PVNGS

Palo Verde Nuclear Generating Station
Units 1, 2, and 3

Improved Technical Specifications

PALO VERDE

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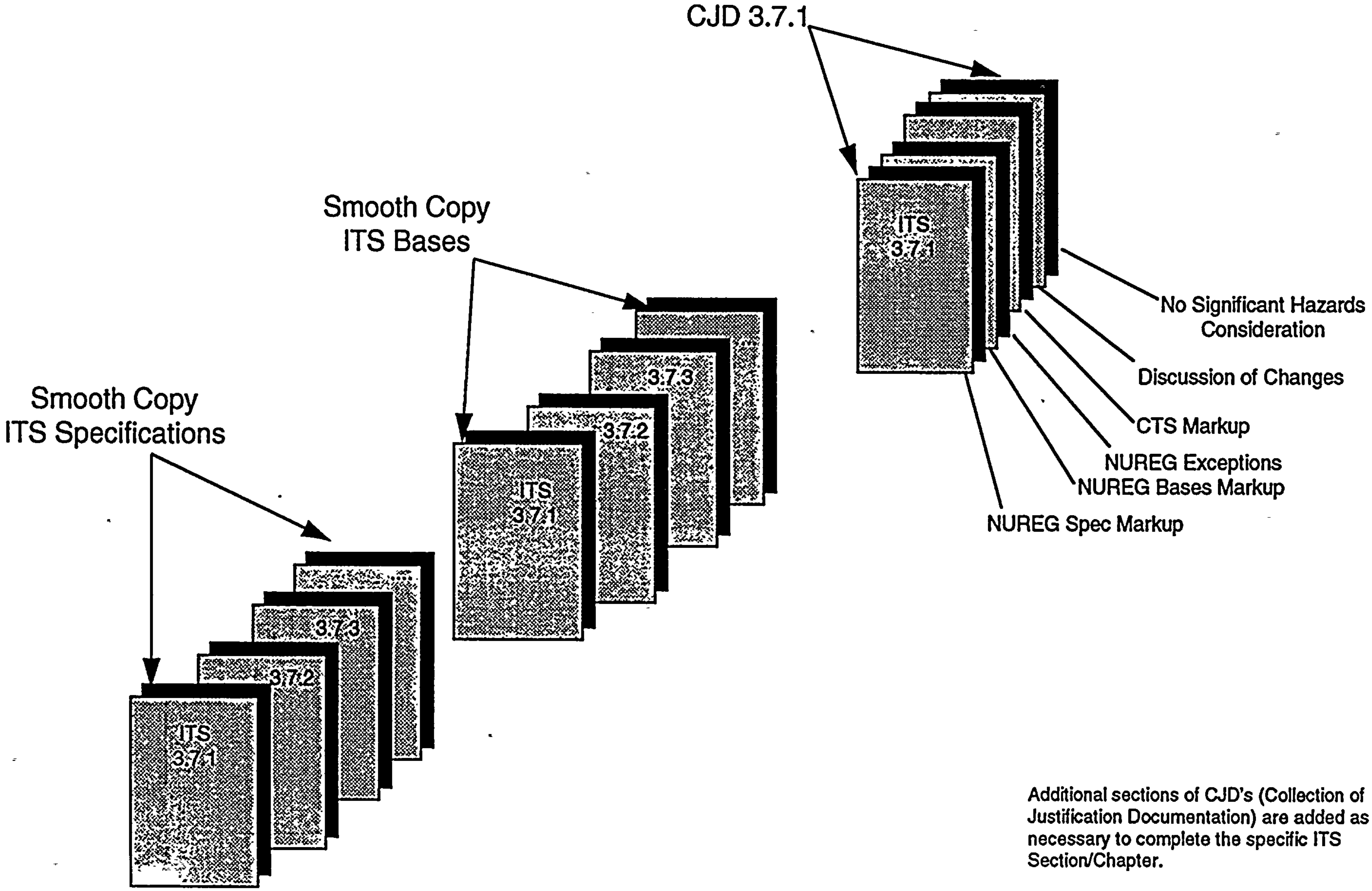
PVNGS ITS
SECTION 3.7 - PLANT SYSTEMS

ITS REVIEW PACKAGE CONTENTS
(Volume 13)



Additional sections of CJD's (Collection of Justification Documentation) are added as necessary to complete the specific ITS Section/Chapter.

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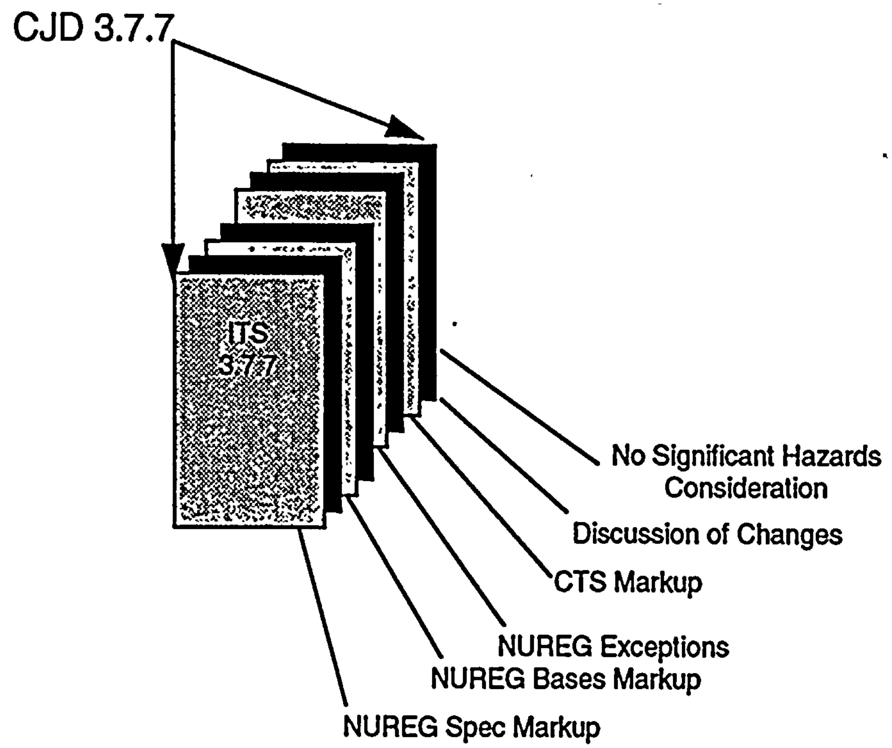


Additional sections of CJD's (Collection of Justification Documentation) are added as necessary to complete the specific ITS Section/Chapter.

SMOOTH COPY
ITS SECTION 3.7

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 The MSSVs shall be OPERABLE as specified in Table 3.7.1-1 and Table 3.7.1-2.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required MSSVs inoperable.	A.1 Reduce power to less than or equal to the applicable % RTP listed in Table 3.7.1-1. <u>AND</u> A.2 Reduce the variable overpower trip–high setpoint in accordance with Table 3.7.1-1.	4 hours 12 hours
B. Required Action and associated Completion Time not met. <u>OR</u> One or more required steam generators with less than six MSSVs OPERABLE.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.1.1	-------------------NOTE------------------- Not required to be performed prior to entry into MODE 3. -- Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ± 1%.	In accordance with the Inservice Testing Program

Table 3.7.1-1 (page 1 of 1)
Variable Overpower Trip Setpoint versus
OPERABLE Main Steam Safety Valves

MINIMUM NUMBER OF MSSVs PER STEAM GENERATOR REQUIRED OPERABLE	MAXIMUM POWER (% RTP)	MAXIMUM ALLOWABLE VARIABLE OVERPOWER TRIP SETPOINT (% RTP)
10	100.0	111.0
9	98.2	108.0
8	87.3	97.1
7	76.4	86.2
6	65.5	75.3

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

VALVE NUMBER		LIFT SETTING (psig ± 3%)
Steam Generator #1	Steam Generator #2	
SGE PSV 572	SGE PSV 554	1250
SGE PSV 579	SGE PSV 561	1250
SGE PSV 573	SGE PSV 555	1290
SGE PSV 578	SGE PSV 560	1290
SGE PSV 574	SGE PSV 556	1315
SGE PSV 575	SGE PSV 557	1315
SGE PSV 576	SGE PSV 558	1315
SGE PSV 577	SGE PSV 559	1315
SGE PSV 691	SGE PSV 694	1315
SGE PSV 692	SGE PSV 695	1315

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Four MSIVs shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2, 3, and 4 except when all MSIVs are closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	4 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, 3, or 4.	C.1 Close MSIV. AND C.2 Verify MSIV is closed.	4 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 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	-------------------NOTE------------------- Not required to be performed prior to entry into MODE 3. -- Verify closure time of each MSIV is ≤ 4.6 seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs)

LCO 3.7.3 Four economizer MFIVs and four downcomer MFIVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4 except when MFIV is closed or isolated by a closed power operated valve.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each penetration flow path.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate inoperable MFIV. AND A.2 Verify inoperable MFIV is closed or isolated.	72 hours Once per 7 days
B. Two valves in the same flow path inoperable.	B.1 Isolate affected flow path. AND B.2 Verify inoperable MFIV is closed or isolated.	8 hours Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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 3.7.3.1	Verify the closure time of each MFIV is ≤ 7.6 seconds on an actual or simulated actuation signal.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 One ADV line per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is being 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. --------------------- Restore ADV line to OPERABLE status.	72 hours
B. Two required ADV lines inoperable.	B.1	Restore one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	C.2	Be in MODE 4 without reliance on 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

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Three AFW trains shall be OPERABLE.

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

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.	A.1 Restore steam supply to OPERABLE status.	7 days <u>AND</u> 10 days from discovery of failure to meet the LCO
B. One AFW train inoperable for reasons other than Condition A in MODE 1, 2, or 3.	B.1 Restore AFW train to OPERABLE status.	72 hours <u>AND</u> 10 days from discovery of failure to meet the LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. OR Two AFW trains inoperable in MODE 1, 2, or 3.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4.	12 hours
D. Three AFW trains inoperable in MODE 1, 2, or 3.	D.1	--------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. -------------------- Initiate action to restore one AFW train to OPERABLE status.	Immediately
E. Required AFW train inoperable in MODE 4.	E.1	--------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. -------------------- Initiate action to restore one AFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	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 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 72 hours after reaching 532°F in the RCS. -- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	31 days on a STAGGERED TEST BASIS
SR 3.7.5.3	-------------------NOTES------------------- 1. Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 532°F in the RCS. 2. Not applicable in MODE 4 when steam generator is relied upon for heat removal. -- 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.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.4	-------------------NOTES------------------- 1. Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 532°F in the RCS. 2. Not applicable in MODE 4 when steam generator is relied upon for heat removal. --- Verify each AFW pump starts automatically on an actual or simulated actuation signal when in MODE 1, 2, or 3.	18 months
SR 3.7.5.5	Verify the 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 or 6 for > 30 days

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST level shall be ≥ 29.5 ft.

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 level not within limit.	A.1 Verify OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND	
	A.2 Restore CST level to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4 without reliance on steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.6.1 Verify CST level is ≥ 29.5 ft.	12 hours

3.7 PLANT SYSTEMS

3.7.7 Essential Cooling Water (EW) System

LCO 3.7.7 Two EW trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One EW train inoperable.	A.1	--------NOTE--------- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops – MODE 4" for shutdown cooling made inoperable by EW. -------------------- Restore EW train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	------------------NOTE------------------- Isolation of EW flow to individual components does not render the EW System inoperable. --- Verify each EW 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 EW 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 EW pump starts automatically on an actual or simulated actuation signal.	18 months

3.7 PLANT SYSTEMS

3.7.8 Essential Spray Pond System (ESPS)

LCO 3.7.8 Two ESPS trains shall be OPERABLE.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	------------------NOTE------------------ Isolation of ESPS flow to individual components does not render ESPS inoperable. -- Verify each ESPS manual and power operated 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 ESPS pump starts automatically on an actual or simulated actuation signal.	18 months

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. UHS inoperable.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Verify the usable water depth of each essential spray pond is ≥ 12 feet.	24 hours
SR 3.7.9.2	Verify water temperature of each essential spray pond is ≤ 89°F.	24 hours

3.7 PLANT SYSTEMS

3.7.10 Essential Chilled Water (EC) System

LCO 3.7.10 Two EC trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One EC train inoperable.	A.1 Restore EC train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify each EC System 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.	31 days
SR 3.7.10.2	Verify the proper actuation of each EC System component on an actual or simulated actuation signal.	18 months

3.7 PLANT SYSTEMS

3.7.11 Control Room Essential Filtration System (CREFS)

LCO 3.7.11 Two CREFS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies,

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable.	A.1 Restore CREFS train to OPERABLE status.	7 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. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODES 5 and 6.	C.1 Place OPERABLE CREFS train in operation.	Immediately
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CREFS trains inoperable in MODES 5 and 6, or during movement of irradiated fuel assemblies.	E.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	E.2 Suspend movement of irradiated fuel assemblies.	Immediately
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate each CREFS train for ≥ 15 minutes.	31 days
SR 3.7.11.2	Perform required CREFS filter testing in accordance with Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.11.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.11.4	Verify one CREFS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the adjacent area during operation at a ventilation flow rate of ≤ 1000 cfm.	18 months on a STAGGERED TEST BASIS

3.7 PLANT SYSTEMS

3.7.12 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.12 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies,

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATCS train inoperable.	A.1 Restore CREATCS 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. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6.	C.1 Place OPERABLE CREATCS train in operation.	Immediately
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CREATCS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	E.1 Suspend CORE ALTERATIONS. AND E.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
F. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Verify each CREATCS train has the capability to remove the assumed heat load.	18 months

3.7 PLANT SYSTEMS

3.7.13 Engineered Safety Feature (ESF) Pump Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.13 Two ESF PREACS trains shall be OPERABLE.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.13.1 Operate each ESF PREACS train for ≥ 15 minutes	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.13.2	Perform required ESF PREACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.13.3	Verify each ESF PREACS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.13.4	Verify one ESF PREACS train can maintain a measurable negative pressure relative to atmospheric pressure during operation at a flowrate of 6000 cfm ±10%.	18 months on a STAGGERED TEST BASIS

3.7 PLANT SYSTEMS

3.7.14 Fuel Storage Pool Water Level

LCO 3.7.14 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage 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 fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Verify the fuel storage pool water level is ≥ 23 ft above the top of irradiated fuel assemblies seated in the storage racks.	7 days

3.7 PLANT SYSTEMS

3.7.15 Fuel Storage Pool Boron Concentration

LCO 3.7.15 The fuel storage pool boron concentration shall be ≥ 2150 ppm.

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.

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
	<u>AND</u>	
	A.2.1 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to perform a fuel storage pool verification.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify the fuel storage pool boron concentration is within limit.	7 days

3.7 PLANT SYSTEMS

3.7.16 Secondary Specific Activity

LCO 3.7.16 The specific activity of the secondary coolant shall be $\leq$ 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. <u>AND</u> A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.16.1 Verify the specific activity of the secondary coolant is within limit.	31 days

3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Assembly Storage

LCO 3.7.17 The combination of initial enrichment and burnup of each fuel assembly stored in each of the three regions of the fuel storage pool shall be within the acceptable burnup domain for each region as shown in Figure 3.7.17-1 and described in Specification 4.3.1.1.

APPLICABILITY: Whenever any fuel assembly is stored in the fuel storage pool.

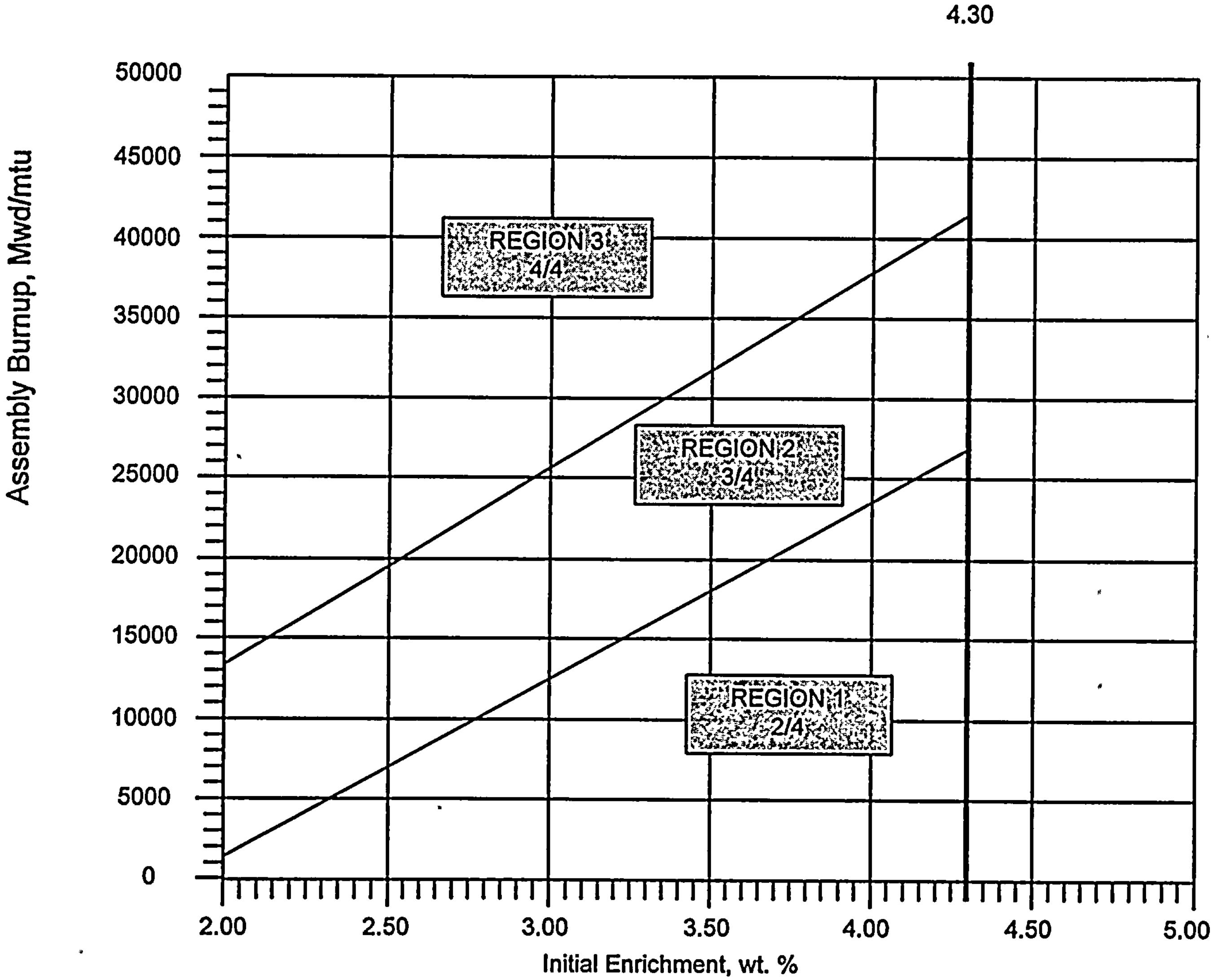
ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	--------NOTE--------- LCO 3.0.3 is not applicable. --------------------- Initiate action to move the noncomplying fuel assembly into an appropriate region.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.17-1 and Specification 4.3.1.1.	Prior to storing the fuel assembly in the fuel storage pool.

FIGURE 3.7.17-1
ASSEMBLY BURNUP VERSUS INITIAL ENRICHMENT



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ITS SECTION 3.7 - BASES

B 3.7 PLANT SYSTEMS

B 3.7.1 Main Steam Safety Valves (MSSVs)

BASES

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.

Five MSSVs are located on each of the four main steam lines, outside containment, upstream of the main steam isolation valves, as described in the CESSAR, Section 5.2 (Ref. 1). The MSSV rated capacity passes the full steam flow at 102% RTP (100% + 2% for instrument error) with the valves full open. This meets the requirements of the ASME Code, Section III (Ref. 2). The MSSV design includes staggered setpoints, according to Table 3.7.1-2, in the accompanying LCO, so that only the number of valves needed will actuate. Staggered setpoints reduce the potential for valve chattering if there is insufficient steam pressure to fully open all valves.

APPLICABLE SAFETY ANALYSES

The design basis for the MSSVs comes from Reference 2; its purpose is to limit secondary system pressure to ≤ 110% of design pressure when passing 100% of design steam flow. This design basis is sufficient to cope with any Anticipated Operational Occurrence (AOO) or accident considered in the Design Basis Accident (DBA) and transient analysis.

The events that challenge the MSSV relieving capacity, and thus RCS pressure, are those characterized as decreased heat removal events, and are presented in the FSAR, Section 15.2 (Ref. 3). Of these, the full power Loss Of Condenser Vacuum (LOCV) event is the limiting AOO. An LOCV isolates the turbine and condenser, and terminates normal feedwater flow to the steam generators. Before delivery of auxiliary feedwater to the steam generators, RCS pressure reaches ≤ 2742 psia. This peak pressure is < 110% of the design pressure of 2500 psia, but high enough to actuate the pressurizer safety valves. The maximum relieving rate during the LOCV event is 14.5 E6 lb/hour, which is less than the rated capacity of 16 MSSVs.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The limiting accident for peak RCS pressure is the full power feedwater line break (FWLB), inside containment, with the failure of the backflow check valve in the feedwater line from the affected steam generator. Water from the affected steam generator is assumed to be lost through the break with minimal additional heat transfer from the RCS. With heat removal limited to the unaffected steam generator, the reduced heat transfer causes an increase in RCS temperature, and the resulting RCS fluid expansion causes an increase in pressure. The RCS pressure increases to ≤ 2843 psia, with the pressurizer safety valves providing relief capacity. These results were found acceptable by the NRC based on the low probability of the event. The maximum relieving rate of the MSSVs during the FWLB event is ≤ 3.8 E6 lb/hour, which is less than the rated capacity of four MSSVs.

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

LCO

This LCO requires all MSSVs to be OPERABLE in compliance with Reference 2, even though this is not a requirement of the DBA analysis. This is because operation with less than the full number of MSSVs requires limitations on allowable THERMAL POWER (to meet Reference 2 requirements), and adjustment to the Reactor Protection System trip setpoints. These limitations are according to those shown in Table 3.7.1-1, Required Action A.2, and Required Action A.3 in the accompanying LCO. An MSSV is considered inoperable if it fails to open upon demand.

The OPERABILITY of the MSSVs is defined as the ability to open within the setpoint tolerances, 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.

The lift settings, according to Table 3.7.1-2 in the accompanying LCO, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

This LCO provides assurance that the MSSVs will perform their designed safety function to mitigate the consequences of accidents that could result in a challenge to the RCPB.

(continued)

BASES

APPLICABILITY

In MODES 1, 2 and 3, a minimum of six MSSVs per steam generator are required to be OPERABLE, according to Table 3.7.1-1 in the accompanying LCO, which is limiting and bounds all lower MODES.

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

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

A.1 and A.2

When 10 MSSVs are OPERABLE per steam generator, THERMAL POWER is limited to 100% RTP per the Operating Lienses, and the VOPT allowable trip setpoint is limited to 111.0% RTP per TS Table 3.3.1-1.

An alternative to restoring inoperable MSSV(s) to OPERABLE status is to reduce power so that the available MSSV relieving capacity meets Code requirements for the power level. Operation may continue provided the allowable THERMAL POWER is equal to the product of: 1) the ratio of the number of MSSVs available per steam generator to the total number of MSSVs per steam generator, and 2) the ratio of the available relieving capacity to total steam flow, multiplied by 100%.

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

$$\text{Allowable THERMAL POWER} = \frac{(10 - N)}{10} \times 109.2$$

With one or more MSSVs inoperable, the ceiling on the variable overpower trip is reduced to an amount over the allowable THERMAL POWER equal to the band given for this trip, according to Table 3.7.1-1 in the accompanying LCO.

SP = Allowable THERMAL POWER + 9.8

where:

SP = Reduced reactor trip setpoint in percent RTP. This is a ratio of the available relieving capacity over the total steam flow at rated power.

10 = Total number of MSSVs per steam generator.

N = Number of inoperable MSSVs on the steam generator with the greatest number of inoperable valves.

109.2 = Ratio of MSSV relieving capacity at 110% steam generator design pressure to calculated steam flow rate at 100% RTP + 2% instrument uncertainty expressed as a percentage (see text above).

9.8 = Band between the maximum THERMAL POWER and the variable overpower trip setpoint ceiling (Table 3.7.1-1).

The operator should limit the maximum steady state power level to the value determined from Table 3.7.1-1 to avoid an inadvertent overpower trip.

The Completion Time of 12 hours for Required Action A.2 is based on operating experience in resetting 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.

(continued)

BASES

ACTIONS (continued)

B.1 and B.2

If the MSSVs cannot be restored to OPERABLE status in the associated Completion Time, or if one or more steam generators have less than six MSSVs OPERABLE, 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

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoints 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 ASME OMc (Ref. 5). According to Reference 5, the following tests are required for MSSVs:

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1 (continued)

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This is to allow testing of the MSSVs at hot conditions. 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

1. CESSAR, Section 5.2.
2. ASME, Boiler and Pressure Vessel Code, Section III, Article NC-7000, Class 2 Components.
3. UFSAR, Section 15.2.
4. ASME, Boiler and Pressure Vessel Code, Section XI, Article IWV-3500.
5. ASME OMc, 1994 Addenda to the ASME OM Code 1990.

B 3.7 PLANT SYSTEMS

B 3.7.2 Main Steam Isolation Valves (MSIVs)

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 generator. 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), atmospheric dump valves, and auxiliary feedwater pump turbine steam supplies to prevent their being isolated from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the other, and isolates the turbine, Steam Bypass Control System, and other auxiliary steam supplies from the steam generators. The MSIVs close on a main steam isolation signal generated by either low steam generator pressure, high steam generator level or high containment pressure. The MSIVs fail closed on loss of control or actuation power. The MSIS also actuates the Main Feedwater Isolation Valves (MFIVs) to close. The MSIVs may also be actuated manually. A description of the MSIVs is found in the FSAR, Section 10.3 (Ref. 1).
APPLICABLE SAFETY ANALYSES	The design basis of the MSIVs is established by the containment analysis for the large steam line break (SLB) inside containment, as discussed in the CESSAR, Section 6.2 (Ref. 2). It is also influenced by the accident analysis of the SLB events presented in the UFSAR, 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). The limiting case for the containment analysis is the hot zero power SLB inside containment with a loss of offsite power following turbine trip, and failure of the MSIV on the affected steam line to close. At zero power, the steam generator inventory and temperature are at their maximum,

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

maximizing the analyzed mass and energy release to the containment. Due to reverse flow, failure of the MSIV to close contributes to the total release of the additional mass and energy in the steam headers, which are downstream of the other MSIVs. With the most reactive control element assembly assumed stuck in the fully withdrawn position, there is an increased possibility that the core will become critical and return to power. The core is ultimately shut down by the borated water injection delivered by the Emergency Core Cooling System. Other failures considered are the failure of an MFIV to close, and failure of an emergency diesel generator to start.

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. 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 (RCS) cooldown. With a loss of offsite power, the response of mitigating systems, such as the High Pressure Safety Injection (HPSI) pumps, is delayed. Significant single failures considered include: failure of a MSIV to close, failure of an emergency diesel generator, and failure of a HPSI pump.

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 the containment, the analysis assumes that the MSIV in the affected steam line remains open. For this accident scenario, steam is discharged into containment from both steam generators until closure of the MSIVs in the intact steam generator occurs. After MSIV closure, steam is discharged into containment only from the affected steam generator, and from the residual steam in the

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

main steam header downstream of the closed MSIVs in the intact loops.

b. A break outside of containment and upstream from the MSIVs. This scenario 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. This type of break will be isolated by the closure of the MSIVs. Events such as increased steam flow through the turbine or the steam bypass valves will also terminate on closure of the MSIVs.

d. A steam generator tube rupture. For this scenario, closure of the MSIVs isolates the affected steam generator from the intact steam generator. In addition to minimizing radiological releases, this enables the operator to maintain the pressure of the steam generator with the ruptured tube below the MSSV setpoints, a necessary step toward isolating the flow through the rupture.

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

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

LCO

This LCO requires that the MSIV in each of the four steam lines be OPERABLE. The MSIVs are considered OPERABLE when the isolation times are within limits, and they close on an isolation actuation signal. The MSIVs have redundant actuator trains. An MSIV is OPERABLE with one train of hydraulics unavailable to shut the valve. Only one OPERABLE MSIV is allowed to have an unavailable hydraulic train.

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.

(continued)

BASES (continued)

APPLICABILITY

The MSIVs must be OPERABLE in MODE 1 and in MODES 2, 3 and 4 except when all MSIVs are closed when there is significant mass and energy in the RCS and steam generators. When the MSIVs are closed, they are already performing their safety function.

In MODES 5 and 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.

ACTIONS

A.1 and A.2

With one MSIV inoperable in MODE 1, time is allowed to restore the component to OPERABLE status. Some repairs can be made to the MSIV with the unit hot. The 4 hour Completion Time is reasonable, considering the probability of an accident occurring during the time period that would require closure of the MSIVs.

The 4 hour Completion Time is consistent with that normally allowed for containment isolation valves that isolate a closed system penetrating containment. These valves differ from other containment isolation valves in that the closed system provides an additional means for containment isolation.

(continued)

BASES (continued)

ACTIONS (continued)

B.1

If the MSIV cannot be restored to OPERABLE within 4 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 Time is reasonable, based on operating experience, to reach MODE 2, and 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.

The 4 hour Completion Time is consistent with that allowed in Condition A.

Inoperable MSIVs that cannot be restored to OPERABLE status within the specified Completion Time, but are closed, 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, MSIV status indications available in the control room, and other administrative controls, to ensure these valves are in the closed position.

D.1 and D.2

If the MSIVs cannot be restored to OPERABLE status, or 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 in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours.

(continued)

BASES (continued)

ACTIONS

D.1 and D.2 (continued)

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that the closure time of each MSIV is ≤ 4.6 seconds on an actual or simulated actuation signal. The MSIV closure time is assumed in the accident and containment analyses. This SR is normally performed upon returning the unit to operation following a refueling outage. The MSIVs should not be full stroke tested at power.

The Frequency for this SR is in accordance with the Inservice Testing Program. This Frequency demonstrates the valve closure time at least once per refueling cycle.

This test is conducted in MODE 3, with the unit at operating temperature and pressure, as discussed in the Reference 5 exercising requirements. 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, in order to establish conditions consistent with those under which the acceptance criterion was generated.

REFERENCES

1. UFSAR, Section 10.3.
2. CESSAR, Section 6.2.
3. UFSAR, Section 15.1.5.
4. 10 CFR 100.11.
5. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.

B 3.7 PLANT SYSTEMS

B 3.7.3 Main Feedwater Isolation Valves (MFIVs)

BASES

BACKGROUND

The MFIVs isolate Main Feedwater (MFW) flow to the secondary side of the steam generators following a High Energy Line Break (HELB). Closure of the MFIVs terminates flow to both steam generators, terminating the event for Feedwater Line Breaks (FWLBs) occurring upstream of the MFIVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream of the MFIVs will be mitigated by their closure. Closure of the MFIVs 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.

The MFIVs isolate the nonsafety related portions from the safety related portion 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 an additional pressure boundary for the controlled addition of Auxiliary Feedwater (AFW) to the intact loop.

Two MFIVs are located on each economizer and downcomer line, outside, but close to, containment. The downcomer MFIVs are located upstream of the train A and B AFW injection points so that AFW may be supplied to a steam generator following MFIV closure. The piping volume from the downcomer MFIVs to the steam generator 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.

The MFIVs close on receipt of a Main Steam Isolation Signal (MSIS) generated by either low steam generator pressure, high steam generator level, or high containment pressure. The MSIS also actuates the Main Steam Isolation Valves (MSIVs) to close. The MFIVs may also be actuated manually. In addition to the MFIVs, check valves are available to isolate the feedwater line penetrating containment, and to ensure that the consequences of events do not exceed the capacity of the containment heat removal systems.A description of the MFIVs is found in the UFSAR, Section 10.4.7 (Ref. 1).

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The design basis of the MFIVs is established by the analysis for the large SLB. It is also influenced by the accident analysis for the large FWLB. Closure of the MFIVs may also be relied on to terminate a steam break for core response analysis and an excess feedwater flow event upon receipt of a MSIS on high steam generator level.

Failure of an MFIV to close following an SLB, FWLB, or excess feedwater flow event can result in additional mass and energy 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 satisfy Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

LCO

This LCO ensures that the MFIVs will isolate MFW flow to the steam generators. Following an FWLB or SLB, these valves will also isolate the nonsafety related portions from the safety related portions of the system. This LCO requires that two MFIVs in each feedwater line be OPERABLE. The MFIVs are considered OPERABLE when the isolation times are within limits, and are closed on an isolation actuation signal.

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 an MSIS 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.

(continued)

BASES

APPLICABILITY

The MFIVs 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, 3, and 4, the MFIVs are required to be OPERABLE, except when they are closed or isolated by a closed power operated valve, in order 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 or isolated by a closed power operated valve, they are already performing their safety function.

In MODES 5 and 6, steam generator energy is low. Therefore, the MFIVs are not required.

ACTIONS

The ACTIONS table is modified by a Note indicating that separate Condition entry is allowed for each penetration flow path.

A.1 and A.2

With one MFIV inoperable, action must be taken to close or isolate the inoperable valves within 72 hours. When these valves are closed or isolated, they are performing their required safety function (e.g., to isolate the line).

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.

Inoperable MFIVs that are closed to comply with Required Action A.1 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 seven day completion time is responsible, based on engineering judgement, MFIV status indications available in the control room, and other administrative controls, to ensure these valves are in the closed position.

(continued)

BASES

ACTIONS

B.1 and B.2

If more than one MFIV in the same flow path cannot be restored to OPERABLE status, then there may be no system to operate automatically and perform the required safety function. Under these conditions, valves in each flow path must be restored to OPERABLE status, closed, or the 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 to close an MFIV or otherwise isolate the affected flow path.

Inoperable MFIVs that cannot be restored to OPERABLE status within the Completion Time, but 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.

C.1 and C.2

If the MFIVs cannot be restored to OPERABLE status, closed, or isolated in 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.

(continued)

[illegible]

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR ensures the actuation of each MFIV is ≤ 7.6 seconds on an actual or simulated actuation signal. The MFIV closure 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 MFIVs should not be full stroke tested at power.

The Frequency is in accordance with the Inservice Testing Program. The Frequency for valve closure time is based on the refueling cycle. Operating experience has shown that these components usually pass the SR when performed at the specified Frequency.

REFERENCES

1. UFSAR, Section 10.4.7.

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Dump Valves (ADVs)

BASES

BACKGROUND

The ADVs provide a safety grade method for cooling the unit to Shutdown Cooling (SDC) System entry conditions, should the preferred heat sink via the Steam Bypass Control 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.

Four ADV lines are provided. Each ADV line consists of one ADV and an associated block valve. One ADV line per steam generator is required to meet the assumptions in the safety analyses. The ADV block valves are not required to be closed in the event of a stuck open ADV.

The ADVs are equipped with pneumatic controllers to permit control of the cooldown rate.

The ADVs are 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 sufficient pressurized gas to operate the ADVs for the time required for RCS cooldown to the SDC System entry conditions.

A description of the ADVs is found in Reference 1. The ADVs require both DC sources and class AC instrument power to be considered OPERABLE. In addition, hand wheels are provided for local manual operation.

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The design basis of the ADVs is established by the capability to cool the unit to SDC System entry conditions. A cooldown rate of 75°F per hour is obtainable by one or both steam generators. This design is adequate to cool the unit to SDC System entry conditions with only one ADV and one steam generator, utilizing the cooling water supply available in the CST.

In the accident analysis presented in the UFSAR, the ADVs are assumed to be used by the operator to cool down the unit to SDC System entry conditions for accidents accompanied by a loss of offsite power. Prior to the operator action, the Main Steam Safety Valves (MSSVs) are used to maintain steam generator pressure and temperature at the MSSV setpoint. This is typically 30 minutes following the initiation of an event. (This may be less for a Steam Generator Tube Rupture (SGTR) event.) The limiting events are those that render one steam generator unavailable for RCS heat removal, with a coincident loss of offsite power; this results from a turbine trip. Typical initiating events falling into this category are a main steam line break upstream of the main steam isolation valves, a feedwater line break, and an SGTR event (although the ADVs on the affected steam generator may still be available following a SGTR event).

The design must accommodate the single failure of one ADV to open on demand.

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

LCO

One ADV line is required to be OPERABLE on each steam generator to conduct a unit cooldown following an event in which one steam generator becomes unavailable. Failure to meet the LCO can result in the inability to cool the unit to SDC System entry conditions following an event in which the condenser is unavailable for use with the Steam Bypass Control System.

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

(continued)

BASES

APPLICABILITY

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

In MODES 5 and 6, an SGTR is not a credible event.

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.

With one required ADV line inoperable, action must be taken to restore the OPERABLE status within 72 hours. The 72 hour Completion Time takes into account the availability of a nonsafety grade backup in the Steam Bypass Control System and MSSVs.

B.1

With two required ADV lines inoperable (one in each steam generator), action must be taken to restore one of the ADV lines to OPERABLE status. As 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 Control System and MSSVs, and the low probability of an event occurring during this period that requires the ADV lines.

(continued)

BASES

ACTIONS

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 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 3.7.4.1

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened and throttled through their full range. This SR ensures 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 SR when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Section 10.3.

B 3.7 PLANT SYSTEMS

B 3.7.5 Auxiliary Feedwater (AFW) System

BASES

BACKGROUND

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, "Condensate Storage Tank (CST)") and pump to the steam generator secondary side via the main feedwater (MFW) piping. The discharge piping from the two essential AFW pumps is cross connected outside containment. The AFW lines then penetrate containment and connect to the downcomer piping. The non-essential AFW pump discharge piping splits with a line connecting with each downcomer line 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, "Main Steam Safety Valves (MSSVs)") or Atmospheric Dump Valves (ADVs) (LCO 3.7.4, "Atmospheric Dump Valves (ADVs)"). If the main condenser is available, steam may be released via the steam bypass valves and recirculated to the CST.

The AFW System consists of one essential motor driven AFW pump, one non-essential motor driven AFW pump, and one essential steam turbine driven pump configured into three trains. Each essential pump provides 100% of AFW flow capacity to the steam generators as assumed in the accident analysis. The non-essential pump is not capable of providing 100% capacity with the recirc line open. All three pumps are equipped with independent recirculation lines to prevent pump operation against a closed system.

The essential motor driven AFW pump is powered from an independent Class 1E power supply, and has the capability to be realigned from the control room to feed either steam generator. The non-essential motor driven AFW pump is powered from a Class 1E power supply and can be aligned to feed either steam generator. This pump is manually activated.

One essential pump provides sufficient flow to remove decay heat and cool the unit to Shutdown Cooling (SDC) System entry conditions.

(continued)

BASES

BACKGROUND (continued)

The steam turbine driven AFW pump receives steam from either main steam header upstream of the main steam isolation valve (MSIV). Each of the steam feed lines is capable of supplying 100% of the requirements of the turbine driven AFW pump. The turbine driven AFW pump is capable of feeding either steam generator, with DC powered control valves actuated to the appropriate steam generator by the Auxiliary Feedwater Actuation Signal (AFAS).

The non-essential AFW train supplies feedwater to the steam generators during normal unit startup, shutdown, and hot standby conditions.

For the normal plant conditions stated above, the non-essential AFW train is designed to supply sufficient water to the steam generator(s) to remove decay heat with steam generator pressure at no load conditions ($\leq$ 1170 psia). Subsequently, the non-essential AFW train supplies sufficient water to cool the unit to SDC entry conditions.

The AFW System actuates automatically on low steam generator level by the AFAS as described in LCO 3.3.5, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation." The AFAS logic is designed to feed either or both steam generators with low levels, but will isolate the AFW System from a steam generator having a significantly lower steam pressure than the other steam generator. The AFAS automatically actuates the AFW turbine driven pump and associated DC operated valves and controls when required, to ensure an adequate feedwater supply to the steam generators. DC operated valves are provided for each AFW line to control the AFW flow to each steam generator.

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

APPLICABLE SAFETY ANALYSES

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

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The design basis of the essential AFW trains 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 1270 psia at the entrance to the steam generators.

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

a. Feedwater Line Break (FWLB); and

b. Main Steam Line Break (MSLB).

c. Station Blackout

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

The AFW System design is such that it can perform its function following an FWLB between the MFW isolation valve and containment, combined with a loss of offsite power following turbine trip, and a single active failure of the steam turbine driven AFW pump. In such a case, the AFAS logic might not detect the affected steam generator if the backflow check valve to the affected MFW header worked properly. The non-essential motor driven AFW pump, if started manually, would deliver to the broken down comer header at the pump runout flow until the problem was detected, and flow was terminated by the operator. Sufficient flow would be delivered to the intact steam generator by the essential motor driven AFW pump.

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

(continued)

BASES

LCO

This LCO requires that three AFW trains be OPERABLE to ensure that the AFW System will perform the design safety function to mitigate the consequences of accidents that could result in overpressurization of the reactor coolant pressure boundary. Two essential and one non-essential AFW pumps, in two diverse trains, ensure availability of residual heat removal capability for all events accompanied by a loss of offsite power and a single failure. This is accomplished by powering the essential motor driven AFW pump from an emergency bus. The non-essential motor driven AFW pump can be manually loaded on its emergency bus.

The third AFW pump is powered by a diverse means, a steam driven turbine supplied with steam from a source not isolated by the closure of the MSIVs.

The AFW System is considered to be OPERABLE when the components and flow paths required to provide AFW flow to the steam generators are OPERABLE. This requires that the two motor driven AFW pumps be OPERABLE in two diverse paths, each capable of supplying AFW to either steam generator. The turbine driven AFW pump shall be OPERABLE with redundant steam supplies from each of the two main steam lines upstream of the MSIVs and capable of supplying AFW flow to either of the two steam generators. The piping, valves, instrumentation, and controls in the required flow paths shall also be OPERABLE.

Although the operability of the non-essential motor driven AFW pump is important from a risk persepctive, this pump is not credited in the PVNGS Accident Analyses.

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

(continued)

BASES

APPLICABILITY

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

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

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

ACTIONS

A.1

If one of the two steam supplies to the turbine driven AFW pumps is inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time is reasonable based on the following reasons:

a. The redundant OPERABLE steam supply to the turbine driven AFW pump;

b. The availability of redundant OPERABLE motor driven AFW pumps; and

c. The low probability of an event requiring the inoperable steam supply to the turbine driven AFW pump.

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

(continued)

BASES

ACTIONS (continued)

B.1

With one of the required AFW trains (pump or flow path) inoperable, 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 the redundant capabilities afforded by the AFW System, the time needed for repairs, and the low probability of a DBA event occurring during this period. Two AFW pumps and flow paths remain to supply feedwater to the steam generators. 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.

C.1 and C.2

When either Required Action A.1 or B.1 cannot be completed within the required Completion Time, or if two AFW trains are inoperable in MODES 1, 2, and 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 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.

In MODE 4, with two AFW trains inoperable, operation is allowed to continue because only one motor driven AFW pump (either the essential or the non-essential pump) is required in accordance with the Note that modifies the LCO. Although it is not required, the unit may continue to cool down and start the SDC.

(continued)

BASES

ACTIONS (continued)

D.1

Required Action D.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. Completion Times are also suspended at the time the conditions is entered. The Completion Time is resumed with the time remaining when the Condition was entered upon restoration of one AFW train to OPERABLE status.

With all three AFW trains inoperable in MODES 1, 2, and 3, the unit is in a seriously degraded condition with no TS related means for conducting a cooldown, and only limited means for conducting a cooldown with nonsafety grade equipment. In such a condition, the unit should not be 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 to OPERABLE status. LCO 3.0.3 is not applicable, as it could force the unit into a less safe condition.

E.1

Required Action 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. Completion Times are also suspended at the time the Condition is entered. The Completion Time is resumed with the time remaining when the Condition was entered upon restoration of one AFW train to OPERABLE status.

With one AFW train inoperable, action must be taken to immediately restore the inoperable train to OPERABLE status or to immediately verify, by administrative means, the OPERABILITY of a second train. LCO 3.0.3 is not applicable, as it could force the unit into a less safe condition.

In MODE 4, either the reactor coolant pumps or the SDC loops can be used to provide forced circulation as discussed in LCO 3.4.6, "RCS Loops – MODE 4."

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the AFW water and steam supply flow paths provides assurance that the proper flow paths exist for AFW 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 manipulations; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position.

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

SR 3.7.5.2

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 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 may be performed on recirculation flow. This test confirms one point on the pump design curve and can be 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), at 3 month intervals satisfies this requirement. The 31 day Frequency on a STAGGERED TEST BASIS results in testing each pump once every 3 months, as required by Reference 2.

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. Normal operating pressure is established in the steam generators when RCS temperature reaches 532°F, this corresponds to a P_{sat} of 900 psia. This deferral is required because there is an insufficient steam pressure to perform the test.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.3

This SR ensures that AFW can be delivered to the appropriate steam generator, in the event of any accident or transient that generates an AFAS signal, 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. This SR is not required for the non-essential train since there are no automatic valves which receive an AFAS. 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. The 18 month Frequency is acceptable, based on the design reliability and operating experience of the equipment.

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions have been established. Normal operating pressure is established in the steam generators when RCS temperature reaches 532°F, this corresponds to a P_{sat} of 900 psia. This deferral is required because there is an insufficient steam pressure to perform the test.

Also, 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 ensures that the essential AFW pumps will start in the event of any accident or transient that generates an AFAS signal by demonstrating that each essential AFW pump starts automatically on an actual or simulated actuation signal. 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. The 18 month Frequency is acceptable, based on the design reliability and operating experience of the equipment.

The non-essential AFW pump does not automatically activate and is not subject to this SR.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.4 (continued)

This SR is modified by two Notes. Note 1 indicates that the SR be deferred until suitable test conditions are established. Normal operating pressure is established in the steam generators when RCS temperature reaches 532°F, this corresponds to a P_{sat} of 900 psia. This deferral is required because there is insufficient steam pressure to perform the test. Note 2 states that the SR is not required in MODE 4. In MODE 4, the required pump is already operating and the autostart function is not required.

SR 3.7.5.5

This SR ensures that the AFW System is properly aligned by verifying the flow path from each essential AFW pump to each steam generator prior to entering MODE 2 operation, after 30 days in MODE 5 or 6. OPERABILITY of essential 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 judgment, and administrative controls to ensure that flow paths remain OPERABLE.

To further ensure AFW System alignment, the OPERABILITY of the essential AFW flow paths is verified following extended outages to determine that no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generators is properly aligned by requiring a verification of minimum flow capacity of 650 gpm at 1270 psia at the entrance to the steam generators. (This SR is not required for the non-essential AFW pump since it is normally used for startup and shutdown.)

REFERENCES

1. UFSAR, Section 10.4.9.
2. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank (CST)

BASES

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 is the primary source of water for the Auxiliary Feedwater (AFW) System (LCO 3.7.5, "Auxiliary Feedwater (AFW) System"). The steam produced is released to the atmosphere by the Main Steam Safety Valves (MSSVs) or the atmospheric dump valves.

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 control valves. The condensed steam is returned to the CST by the condensate pump draw-off. This has the advantage of conserving condensate while minimizing releases to the environment.

Because the CST is a principal component in removing residual heat from the RCS, it is designed to withstand earthquakes and other natural phenomena. The CST is designed to Seismic Category I requirements to ensure availability of the feedwater supply. Feedwater is also available from the Reactor Makeup Water Tank (RMWT).

A description of the CST is found in the UFSAR, Section 9.2.6 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The CST provides cooling water to remove decay heat and to cool down the unit following all events in the accident analysis, discussed in the UFSAR, Chapters 6 and 15 (Refs. 2 and 3, respectively). For anticipated operational occurrences and accidents which do not affect the OPERABILITY of the steam generators, the CST has sufficient volume to maintain the plant for 8 hours at MODE 3, followed by a cooldown to shutdown cooling (SDC) entry conditions at the design cooldown rate.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

a. The failure of the diesel generator powering the motor driven AFW pump (requiring additional steam to drive the remaining AFW pump turbine); and

b. The 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 either in the main feedwater, or essential AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, as the Auxiliary 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 by the retaining of steam generator inventory. A break in the non-essential AFW line could have similar consequences on CST level but is not controlled by AFAS. Actuation required operator action.

The CST satisfies Criterion 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 4 hours following a reactor trip from 102% RTP, and then cool down the RCS to SDC 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 the cooldown, as well as to account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line.

The CST level required is a usable volume of ≥ 300,000 gallons, which is based on holding the unit in MODE 3 for 8 hours, followed by a cooldown to SDC entry conditions at 75°F per hour. This basis exceeds the level required by the NRC Standard Review Plan Branch Technical Position, Reactor

(continued)

BASES

LCO (continued)

Systems Branch 5-1 (Ref. 4).

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 MODES 5 and 6, the CST is not required because the AFW System is not required.

ACTIONS

A.1 and A.2

If the CST level is not within the limit, the OPERABILITY of the backup water supply (RMWT) must be verified by administrative means within 4 hours.

OPERABILITY of the RMWT must include verification of the OPERABILITY of flow paths from the RMWT to the AFW pumps, and availability of 26 ft. (300,000 gal.) of water in the RMWT. The CST level must be returned to OPERABLE status within 7 days, as the RMWT 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 RMWT. The 7 day Completion Time is reasonable, based on an OPERABLE RMWT being available, and the low probability of an event requiring the use of the water from the CST occurring during this period.

(continued)

BASES

ACTIONS (continued)

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 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

This SR verifies that the CST contains the required volume of cooling water. (This level ≥ 29.5 ft (300,000 gallons)). 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. The 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal CST level deviations.

REFERENCES

1. UFSAR, Section 9.2.6.
2. UFSAR, Chapter 6.
3. UFSAR, Chapter 15.
4. NRC Standard Review Plan Branch Technical Position (BTP) RSB 5-1.

B 3.7 PLANT SYSTEMS

B 3.7.7 Essential Cooling Water (EW) System

BASES

BACKGROUND

The EW 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. The EW System acts as a backup to the non-safety related Nuclear Cooling Water System for several non-safety related loads. The EW System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Essential Spray Pond System (ESPS), and thus to the environment.

The EW System is arranged as two independent full capacity cooling loops, which are normally isolated from the Nuclear Cooling Water System. Each safety related train includes a full capacity pump, surge tank, heat exchanger, piping, valves, chemical addition tank, and instrumentation. Each safety related train is powered from a separate bus. The surge tank in the system provides pump trip protective functions to ensure sufficient net positive suction head is available. The pump in each train is automatically started on receipt of an ESFAS signal.

Additional information on the design and operation of the system, along with a list of the components served, is presented in the UFSAR, Section 9.2.2, Reference 1, and Section 9.2.1, Reference 2. The principal safety related function of the EW System is the removal of decay heat from the reactor via the Shutdown Cooling (SDC) System heat exchanger.

APPLICABLE SAFETY ANALYSES

The design basis of the EW System is for one EW train in conjunction with the ultimate heat sink and a 100% capacity Containment Spray System to remove sufficient heat to ensure a safe reactor shutdown coincident with a loss of offsite power. The EW System provides a gradual reduction in the temperature of the containment sump fluid as it is supplied to the Reactor Coolant System (RCS) by the safety injection pumps.

(continued)

BASES

APPLICABLE SAFETY ANALYSIS (continued)

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

The EW System also functions to cool the unit from SDC entry conditions (T_{cold} < 350°F) to MODE 5 (T_{cold} < 210°F) during normal and post accident operations. The time required to cool from 350°F to 210°F is a function of the number of EW and SDC trains operating. One EW train is sufficient to remove decay heat during subsequent operations with T_{cold} < 210°F. This assumes that the worst case meteorological conditions occur simultaneously with the maximum heat loads on the system.

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

LCO

The EW 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 EW 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, two EW trains must be OPERABLE. At least one EW train will operate assuming the worst single active failure occurs coincident with the loss of offsite power.

A EW train is considered OPERABLE when the following:

a. The associated pump and surge tank are OPERABLE; and

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

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

(continued)

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, the EW System must be prepared to perform its post accident safety functions, primarily RCS heat removal by cooling the SDC heat exchanger.

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

Reference LCO 3.0.6 and the SFDP (Specification 5.5.15).

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating the requirement of entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for SDC made inoperable by EW. This note is only applicable in Mode 4. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.

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

B.1 and B.2

If the EW 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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

Verifying the correct alignment for manual, power operated, and automatic valves in the EW flow path provides assurance that the proper flow paths exist for EW 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 potentially being mispositioned are in their correct position.

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

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

SR 3.7.7.2

This SR verifies proper automatic operation of the EW valves 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. 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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.7.3

This SR verifies proper automatic operation of the EW pumps on an actual or simulated actuation signal. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Section 9.2.2.
2. UFSAR, Section 9.2.1.

B 3.7 PLANT SYSTEMS

B 3.7.8 Essential Spray Pond System (ESPS)

BASES

BACKGROUND

The ESPS 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 a normal shutdown, the ESPS also provides this function for various safety related components.

The ESPS consists of two separate, 100% capacity safety related cooling water trains. Each train consists of one 100% capacity pump, one Essential Cooling Water (EW) heat exchanger, piping, valves, instrumentation, and a cleanup and Chemistry Control System. The valves are manually aligned, and secured in position. The pumps are automatically started upon receipt of an ESFAS signal.

Additional information about the design and operation of the ESPS, 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 ESPS is the removal of decay heat from the reactor via the EW System.

APPLICABLE SAFETY ANALYSES

The design basis of the ESPS is for one ESPS train, in conjunction with the EW System and a 100% capacity containment spray system to remove sufficient heat to ensure a safe reactor shutdown coincident with a loss of offsite power. The ESPS is designed to perform its function with a single failure of any active component, assuming the loss of offsite power.

The ESPS, in conjunction with the EW System, also cools the unit from shutdown cooling (SDC), as discussed in the UFSAR, 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 EW and SDC System trains that are operating. One ESPS train is sufficient to remove decay heat during subsequent operations in MODES 5 and 6. This assumes that worst case meteorological conditions occur simultaneously with maximum heat loads on the system.

(continued)

BASES

APPLICABLE (continued)

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

LCO

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

An ESPS train is considered OPERABLE when:

a. The associated pump is OPERABLE; and

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

APPLICABILITY

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

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

Reference LCO 3.0.6 and the SFDP (Specification 5.5.15).

ACTIONS

A.1

With one ESPS train inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE ESPS train is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the ESPS train could result in loss of ESPS function. Required Action A.1 is modified by two Notes. The first Note indicates that the applicable Conditions of LCO 3.8.1, "AC Sources-Operating," must be entered when the inoperable ESPS train results in an inoperable emergency diesel generator. The second Note

(continued)

BASES

ACTIONS

A.1 (continued)

indicates that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4," should be entered if an inoperable ESPS train results in an inoperable SDC System. This note is only applicable in MODE 4. The 72 hour Completion Time is based on the redundant 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 ESPS 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

Verifying the correct alignment for manual and power operated, valves in the ESPS flow path ensures that the proper flow paths exist for ESPS 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 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 potentially being mispositioned are in the correct position. This SR is modified by a Note indicating that the isolation of the ESPS components or systems may render those components inoperable but does not necessarily affect the OPERABILITY of the ESPS. Although the ESPS remains operable, the effect of isolating components on the mechanical performance must be evaluated.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1 (continued)

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

The SR verifies proper automatic operation of the ESPS pumps on an actual or simulated actuation signal. 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. UFSAR, Section 9.2.1.

2. UFSAR, Section 5.4.7.

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

BASES

BACKGROUND

The UHS provides a heat sink for process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. This is done utilizing the Essential Spray Pond System (ESPS).

The UHS is the essential spray ponds as discussed in the UFSAR, Section 9.2.5 (Ref. 1). The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after an accident.

The basic performance requirements are that a 26 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.

APPLICABLE SAFETY ANALYSES

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 shutdown cooling. 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 spray system is required to remove the core decay heat.

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. The assumptions include: worst expected meteorological conditions, conservative uncertainties when calculating decay heat, and the worst case failure. 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. The 26 day supply contained in the two essential spray ponds meets the intent of this requirement.

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

(continued)

BASES

LCO

The UHS is required to be OPERABLE. The UHS is considered OPERABLE if it contains a sufficient volume of water at or below the maximum temperature that would allow the ESPS to operate for at least 26 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 ESPS. To meet this condition, the UHS temperature should not exceed 89°F and the level of each ESP should not fall below 12 ft usable water depth during normal unit operation. Since the bottom 1.5 ft of the ESPS is not usable, an actual depth of 13.5 ft provides a usable depth of 12 ft to meet the heat loads minimum water requirement.

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

Reference LCO 3.0.6 and the SFDP (Specification 5.5.15).

ACTIONS

A.1 and A.2

If the UHS is inoperable, 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.

(continued)

[illegible]

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1

This SR verifies adequate long term (26 days) cooling can be maintained. The level specified also ensures sufficient NPSH is available for operating the ESPS pumps. The 24 hour Frequency is based on operating experience related to the trending of the parameter variations during the applicable MODES. This SR verifies that the usable water level of each ESP is ≥ 12 ft. A usable water depth of 12 feet requires 13'-6" of actual water depth. The implementing procedure requires the operator to verify that the level is greater than or equal to 13'-6" measured locally at the spray pond or 14' indicated in the control room using installed instrumentation. The difference is a result of instrument uncertainty.

SR 3.7.9.2

This SR verifies that the ESPS is available to cool the EW System to at least its maximum design temperature within the maximum accident or normal design heat loads for 26 days following a DBA. The 24 hour Frequency is based on operating experience related to the trending of the parameter variations during the applicable MODEs. This SR verifies that the UHS water temperature is 89°F, as indicated in the control room. This value includes allowance for uncertainties.

REFERENCES

1. UFSAR, Section 9.2.5.

2. Regulatory Guide 1.27.

B 3.7 PLANT SYSTEMS

B 3.7.10 Essential Chilled Water (EC) System

BASES

BACKGROUND

The EC System provides a heat transfer system to the ultimate heat sink for the removal of process and operating heat from selected safety related air handling systems during a Design Basis Accident (DBA) or transient.

The EC System is a closed loop system consisting of two independent trains. Each 100% capacity train includes a heat exchanger, surge tank, pump, chemical addition tank, piping, valves, controls, and instrumentation. An independent 100% capacity chilled water refrigeration unit cools each train. The EC System is actuated on receipt of an ESFAS signal and supplies chilled water to the Heating, Ventilation, and Air Conditioning (HVAC) units in Engineered Safety Feature (ESF) equipment areas (e.g., the main control room, DC equipment room, AFW pump rooms, EW pump rooms and safety injection pump rooms).

The flow path for the EC System includes the closed loop of piping to all serviced equipment.

During normal operation, the normal Chilled Water System (WC) and the normal HVAC System cools the areas served by the EC System. The WC System and the normal HVAC System are nonsafety grade systems. Following ESFAS actuations, the EC System with essential HVAC units provide this cooling function to the control room and safety grade equipment. Additional information about the design and operation of the system, along with a list of components served, can be found in the UFSAR, Section 9.2.9 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The design basis of the EC System is to remove the post accident heat load from ESF spaces following a DBA coincident with a loss of offsite power. Each train provides chilled water to the HVAC units at the design temperature of 44°F. The design flowrate is 319 gpm for Train A and 314 gpm for Train B not including flow required for oil cooler.

(continued)

BASES

APPLICABLE SAFETY ANALYSIS (continued)

The maximum heat load in the ESF pump room area occurs during the recirculation phase following a loss of coolant accident. During recirculation, hot fluid from the containment sump is supplied to the high pressure safety injection and containment spray pumps. This heat load to the area atmosphere must be removed by the EC System to ensure that these pumps remain OPERABLE.

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

LCO

Two EC trains are required to be OPERABLE to provide the required redundancy to ensure that the system functions to remove post accident heat loads, assuming the worst single failure.

An EC train is considered OPERABLE when:

a. The associated pump and surge tank are OPERABLE; and

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

The isolation of the EC from other components or systems may render those components or systems inoperable, but does not affect the OPERABILITY of the EC System. The OPERABILITY of supported systems is determined in accordance with LCO 3.0.6 and the SFDP.

APPLICABILITY

In MODES 1, 2, 3, and 4, the EC System is required to be OPERABLE when a LOCA or other accident would require ESF operation.

In MODES 5 and 6, the OPERABILITY requirements of the ECS System are determined by the systems it supports. Reference LCO 3.0.6 and the SFDP (Specification 5.5.15).

(continued)

BASES

ACTIONS

A.1

If one EC train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this condition, one OPERABLE ECW train is adequate to perform the cooling function. The 72 hour Completion Time is reasonable, based on the low probability of an event occurring during this time and the 100% capacity OPERABLE EC train.

B.1 and B.2

If the EC train cannot be restored to OPERABLE status within the associated Completion Time, or two EC trains are inoperable, 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 3.7.10.1

Verifying the correct alignment for manual, power operated, and automatic valves in the EC flow path provides assurance that the proper flow paths exist for EC 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 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 potentially being mispositioned are in the correct position.

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.10.2

This SR verifies proper automatic operation of the EC System components and that the EC pumps will start in the event of any accident or transient that generates an applicable ESFAS signal. This SR also ensures that each automatic valve in the flow paths actuates to its correct position on an actual or simulated ESFAS signal.

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. The 18 month Frequency is based on operating experience and design reliability of the equipment.

REFERENCES

1. UFSAR, Section 9.2.9.

B 3.7 PLANT SYSTEMS

B 3.7.11 Control Room Essential Filtration System (CREFS)

BASES

BACKGROUND

The CREFS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity.

The CREFS consists of two independent, redundant trains that recirculate and filter the control room air. Each train consists of a prefilter, a High Efficiency Particulate Air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodine), and a fan. Ductwork, dampers, and instrumentation also form part of the system. A second bank of HEPA filters follows the adsorber section to collect carbon fines.

The CREFS is an emergency system. Upon receipt of the actuating signal(s), normal HVAC to the control room is isolated, and the stream of ventilation air is mixed with outside air and recirculated through the filter trains of the system. The prefilters remove any large particles in the air, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

Actuation of CREFS aligns the system for recirculation of control room air mixed with outside air through the redundant trains of HEPA and charcoal filters. The CREFS initiates pressurization and filtered ventilation of the air supply to the control room.

(continued)

BASES

BACKGROUND (continued)

Outside air is filtered, and then 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 building.

The air entering the control room is continuously monitored by radiation detectors. One detector output above the setpoint will cause actuation of the CREFS.

A single train is designed to pressurize the control room to ≥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 recirculation trains provide the required filtration. 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

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 UFSAR, Chapter 15 (Ref. 2).

Toxic gases are not stored or used onsite in quantities sufficient to necessitate control room protection, as required by Regulatory Guide 1.78 (Ref. 1). In addition, nearby industrial, military, and transportation facilities present no hazard to the operation of PVNGS, and there are no site-related design basis events due to accidents at these facilities (Ref. 6).

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

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.

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

LCO

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

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

a. Fan is OPERABLE;

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

c. 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.

APPLICABILITY

In MODES 1, 2, 3, and 4, the CREFS must be OPERABLE to limit operator exposure during and following a DBA.

In MODES 5 and 6, the CREFS is required to cope with the release from a rupture of a waste gas tank.

During movement of irradiated fuel assemblies, the CREFS must be OPERABLE to cope with the release from a fuel handling accident.

Refer to LCO 3.0.6 and the SFDP (Specification 5.5.15) to determine OPERABILITY requirements of supporting systems.

(continued)

BASES

ACTIONS

A.1

With one CREFS train inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREFS subsystem is adequate to perform control room radiation 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 the ability of the remaining train to provide the required capability.

B.1 and B.2

If the inoperable CREFS cannot be restored to OPERABLE status within the required Completion Time in MODE 1, 2, 3, or 4, the unit must be placed in a MODE that minimizes the 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.

C.1

In MODE 5 or 6, or during movement of irradiated fuel assemblies if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE CREFS train must be immediately placed in operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected.

D.1

During movement of irradiated fuel assemblies, if required Action A.1 cannot be completed within the required Completion time, immediate action must be taken 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 the accident risk. This does not preclude the movement of fuel assemblies to a safe position.

(continued)

BASES

ACTIONS (continued)

E.1 and E.2

When in MODES 5 and 6, or during movement of 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 the 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, the 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

Monthly operations for ≥ 15 minutes to demonstrate the function of the system is required. The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.11.2

This SR verifies that the required CREFS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CREFS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.11.3

This SR verifies each CREFS train starts and operates on an actual or simulated actuation signal. The Frequency of 18 months is consistent with that specified in Reference 3.

SR 3.7.11.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the CREFS. During 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 ventilation flow rate of ≤1000 cfm. The ventilation flowrate is the outside makeup air flowrate. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800, Section 6.4 (Ref. 4).

REFERENCES

1. UFSAR, Section 6.4.
2. UFSAR, Chapter 15.
3. Regulatory Guide 1.52 (Rev. 2).
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.
5. UFSAR, Section 9.4.
6. UFSAR, Section 2.2

B 3.7 PLANT SYSTEMS

B 3.7.12 Control Room Emergency Air Temperature Control System (CREATCS)

BASES

BACKGROUND

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

The CREATCS consists of two independent, redundant trains that provide cooling of recirculated control room air. Each train consists of 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, which is part of the Control Room Essential Filtration Sytem (CREFS). A single train will provide the required temperature control to maintain the control room between 70°F and 80°F. The CREATCS operation to maintain the control room temperature is discussed in the UFSAR, Section 9.4 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The design basis of the CREATCS is to maintain temperature of the control room environment throughout 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 80°F. A single active failure of a component of the CREATCS, assuming 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, considering equipment heat loads and personnel occupancy requirements, to ensure equipment OPERABILITY.

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

(continued)

BASES (continued)

LCO

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 disables the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

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

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies, the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment OPERABILITY requirements following isolation of the control room.

Refer to LCO 3.0.6 and the SFDP (Specification 5.5.15) to determin the OPERABILITY requirements of suporting systems.

ACTIONS

A.1

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. The 30 day Completion Time is reasonable, based on the low probability of an event occurring requiring control room isolation, consideration that the remaining train can provide the required capabilities, and the alternate safety or nonsafety related cooling means that are available.

B.1 and B.2

In MODE 1, 2, 3, or 4, when Required Action A.1 cannot be completed within the required Completion Time, the unit must be placed in a MODE that minimizes the 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.

(continued)

BASES (continued)

ACTIONS

B.1 and B.2 (continued)

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.

C.1

In MODE 5 or 6, or during movement of irradiated fuel assemblies when Required Action A.1 cannot be completed 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 any active failure will be readily detected.

D.1

During movement of irradiated fuel assemblies, if Required Action A.1 cannot be completed within the Required Completion Time, immediate action must be taken to suspend activities that could result in a release of radioactivity that might require actuation of CREATCS. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position.

E.1 and E.2

In MODE 5 or 6, or during movement of 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 actuation of CREATCS. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

F.1

If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4, the CREATCS may not be capable of performing the intended function and the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

This SR verifies that the heat removal capability of the system is sufficient to meet design requirements. This SR consists of a combination of testing and calculations. An 18 month Frequency is appropriate, since significant degradation of the CREATCS is slow and is not expected over this time period.

REFERENCES

1. UFSAR, Section 9.4.

B 3.7 PLANT SYSTEMS

B 3.7.13 Engineered Safety Feature (ESF) Pump Room Exhaust Air Cleanup System (PREACS)

BASES

BACKGROUND

The ESF PREACS filters air from the area of the active ESF components during the recirculation phase of a Loss Of Coolant Accident (LOCA).

The ESF PREACS consists of two independent and redundant trains shared with the fuel building. Each train consists of a heater, a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, dampers, and instrumentation also form part of the system. A second bank of HEPA filters follows the adsorber section. 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 rooms and lower region of the auxiliary building following receipt of a safety injection actuation signal.

The ESF PREACS is a standby system. The Auxiliary Building Normal HVAC System provides normal cooling. During emergency operations, the ESF PREACS dampers are realigned and fans are started to initiate filtration. Upon receipt of the actuating Engineered Safety Feature Actuation System signal(s), normal air discharges from the ESF pump rooms are isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The ESF PREACS is discussed in the FSAR, Sections 6.5.1, 9.4.2, and 15.6.5 (Refs. 1, 2, and 3, respectively). The primary purpose of the heaters is to maintain the relative humidity at an acceptable level consistent with iodine removal efficiencies, as discussed in the Regulatory Guide 1.52 (Ref. 4).

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The design basis of the ESF PREACS is established by the large break LOCA. The system evaluation assumes a passive failure of the ECCS outside containment, such as safety injection pump seal failure, during the recirculation mode. In such a case, the system limits the radioactive release to within 10 CFR 100 limits (Ref. 5). The analysis of the effects and consequences of a large break LOCA is presented in Reference 3. The ESF PREACS also actuates following a small break LOCA, requiring the unit to go into the recirculation mode of long term cooling and to clean up releases of smaller leaks, such as from valve stem packing.

The two types of system failures that are considered in the accident analysis are 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 ESF envelope following a LOCA.

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

LCO

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

ESF PREACS is considered OPERABLE when the individual components necessary to maintain the ESF Pump Room filtration are OPERABLE in both trains.

An ESF 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

(continued)

BASES

LCO (continued)

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

In addition, the auxiliary building envelope below the 100 ft. elevation must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

APPLICABILITY

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

In MODES 5 and 6, the ESF PREACS is not required to be OPERABLE, since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one ESF 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 ESF 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 reasonable, based on the low probability of a DBA occurring during this time period, and the consideration that the remaining train can provide the required capability.

B.1 and B.2

If the ESF PREACS train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be 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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. Since 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 operations for ≥ 15 minutes demonstrates the function of the system. There is not expected to be any moisture buildup on the adsorbers and HEPA filters due to the low humidity at PVNGS (Ref. 7). The 31 day Frequency is based on the known reliability of equipment, and the two train redundancy available.

SR 3.7.13.2

This SR verifies that the required ESF PREACS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The ECCS PREACS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4). 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 ESF PREACS train starts and operates on an actual or simulated actuation signal. The 18 month Frequency is consistent with that specified in Regulatory Guide 1.52 (Ref. 4).

SR 3.7.13.4

This SR verifies the integrity of the ESF envelope. The ability of the ESF envelope to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper function of the ESF PREACS. During the post accident mode of operation, the ESF PREACS is designed to maintain a slight negative pressure in the ESF envelope with respect to adjacent areas to prevent unfiltered LEAKAGE. For the purposes of testing, the term

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.13.4 (continued)

"measurable negative pressure" is defined as 10 times the minimum instrument reading. The ESF PREACS is designed to maintain this negative pressure at a flow rate of 6,000 cfm ± 10% from the ESF envelope. The Frequency of 18 months is consistent with the guidance provided in the 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 other filtration SRs.

REFERENCES

1. UFSAR, Section 6.5.1.
2. UFSAR, Section 9.4.2.
3. UFSAR, Section 15.6.5.
4. Regulatory Guide 1.52 (Rev. 2).
5. 10 CFR 100.11.
6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.
7. UFSAR, Section 1.8

B 3.7 PLANT SYSTEMS

B 3.7.14 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.

A general description of the fuel storage pool design is given in the UFSAR, Section 9.1.2, Reference 1, and the Spent Fuel Pool Cooling and Cleanup System is given in the UFSAR, Section 9.1.3 (Ref. 2). The assumptions of the fuel handling accident are given in the UFSAR, Section 15.7.4 (Ref. 3).

APPLICABLE SAFETY ANALYSES

The minimum water level in the fuel storage pool meets the intent of the assumptions of the fuel handling accident described in Regulatory Guide 1.25 (Ref. 4). The resultant 2 hour thyroid dose to a person at the exclusion area boundary is less than one-third of the 10 CFR 100 (Ref. 5) limits.

According to Reference 4, there is 23 ft of water between the top of the damaged fuel bundle and the fuel pool surface for a fuel handling accident. With a 23 ft water level, 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 bundle and the surface, by the width of the bundle. The decontamination factor for 22 ft-6 in of water is essentially the same as that for 23 ft of water so the intent of Regulatory Guide 1.25 is met.

The fuel storage pool water level satisfies Criterion 3 of 10 CFR 50.36 (c)(2)(ii).

(continued)

BASES

LCO

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.

APPLICABILITY

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.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply.

When the initial conditions for 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. This effectively precludes a spent fuel handling accident from occurring. This does not preclude moving a fuel assembly to a safe position.

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, in either case, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

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 unit procedures and are acceptable, based on operating experience.

(continued)

BASES

SURVEILLANCE REQUIREMENTS	SR 3.7.14.1 (continued) During refueling operations, the level in the fuel storage pool is at equilibrium with that of the refueling canal, and the level in the refueling canal is checked daily in accordance with LCO 3.9.6, "Refueling Water Level-Fuel Assemblies".
REFERENCES	1. UFSAR, Section 9.1.2. 2. UFSAR, Section 9.1.3. 3. UFSAR, Section 15.7.4. 4. Regulatory Guide 1.25 5. 10 CFR 100.11.

B 3.7 PLANT SYSTEMS

B 3.7.15 Fuel Storage Pool Boron Concentration

BASES

BACKGROUND

As described in LCO 3.7.17, "Spent Fuel Assembly Storage," fuel assemblies are stored in the spent fuel racks in accordance with criteria based on initial enrichment and discharge burnup. Although the water in the spent fuel pool is normally borated to ≥ 2150 ppm, the criteria that limit the storage of a fuel assembly to specific rack locations is conservatively developed without taking credit for boron.

APPLICABLE SAFETY ANALYSES

A fuel assembly could be inadvertently loaded into a spent fuel rack location not allowed by LCO 3.7.17 (e.g., an unirradiated fuel assembly or an insufficiently depleted fuel assembly). Another type of postulated accident is associated with a fuel assembly that is dropped onto the fully loaded fuel pool storage rack or between a rack and the pool walls. These incidents could have a positive reactivity effect, decreasing the margin to criticality. However, the negative reactivity effect of the soluble boron compensates for the increased reactivity caused by these postulated accident scenarios.

The concentration of dissolved boron in the fuel pool satisfies Criterion 2 of 10 CFR 50.36 (c)(2)(ii).

LCO

The specified concentration of dissolved boron in the fuel pool preserves the assumptions used in the analyses of the potential accident scenario described above. This concentration of dissolved boron is the minimum required concentration for fuel assembly storage and movement within the fuel pool.

APPLICABILITY

This LCO applies whenever fuel assemblies are stored in the spent fuel pool until a complete spent fuel pool verification has been performed following the last movement of fuel assemblies in the spent fuel pool. This LCO does not apply following the verification since the verification would confirm that there are no misloaded fuel assemblies.

(continued)

BASES

APPLICABILITY (continued)

With no further fuel assembly movements in progress, there is no potential for a misloaded fuel assembly or a dropped fuel assembly.

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.

When the concentration of boron in the spent fuel pool is less than required, immediate action must be taken to preclude an accident from happening or to mitigate the consequences of an accident in progress. This is most efficiently achieved by immediately suspending the movement of fuel assemblies. This does not preclude the movement of fuel assemblies to a safe position. In addition, action must be immediately initiated to restore boron concentration to within limit. Alternately, immediate action to perform a fuel storage pool verification can be initiated.

If moving fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving 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 3.7.15.1

This SR verifies that the concentration of boron in the spent fuel pool is within the required limit. As long as this SR is met, the analyzed incidents are fully addressed. The 7 day Frequency is appropriate because no major replenishment of pool water is expected to take place over a short period of time.

REFERENCES

1. UFSAR, Section 9.12.

2. PVNGS Operating License Amendments 82, 69 and 54 for Units 1, 2 and 3, respectively, and associated NRC Safety Evaluation dated September 30, 1994.

B 3.7 PLANT SYSTEMS

B 3.7.16 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 is indication of 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.

A limit on secondary coolant specific activity during power operation minimizes releases to the environment because of normal operation, anticipated operational occurrences, and accidents.

This limit is lower than the activity value that might be expected from a 1 gpm tube leak (LCO 3.4.14, "RCS Operational LEAKAGE") of primary coolant at the limit of 1.0 μCi/gm (LCO 3.4.17, "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 reactor coolant LEAKAGE. Most of the iodine isotopes have short half lives (i.e., < 20 hours). I-131, with a half life of 8.04 days, concentrates faster than it decays, but does not reach equilibrium because of blowdown and other losses.

With the specified activity level, the resultant 2 hour thyroid dose to a person at the Exclusion Area Boundary (EAB) would be about .42 rem should the Main Steam Safety Valves (MSSVs) open for the 2 hours following a trip from full power.

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.

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The accident analysis of the main steam line break (MSLB), as discussed in the UFSAR, Chapter 15 (Ref. 2), assumes the initial secondary coolant specific activity to have a radioactive isotope concentration of 0.10 μCi/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.

With the loss of offsite power, the remaining steam generator is available for core decay heat dissipation by venting steam to the atmosphere through MSSVs and Atmospheric Dump Valves (ADVs). The Auxiliary Feedwater System supplies the necessary makeup to the steam generator. Venting continues until the reactor coolant temperature and pressure have decreased sufficiently for the Shutdown Cooling System to complete the cooldown.

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 MSSVs and ADVs during the event.

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 limit in the secondary coolant system of ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131 to limit the radiological consequences of a Design Basis Accident (DBA) to a small fraction of the required limit (Ref. 1).

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.

(continued)

BASES

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.

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 secondary specific activity cannot be restored to within limits in 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 3.7.16.1

This SR ensures that the secondary specific activity is within the limits of the accident analysis. A gamma isotope 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.

(continued)

BASES

REFERENCES

1. 10 CFR 100.11.
2. UFSAR, Chapter 15.

B 3.7 PLANT SYSTEMS

B 3.7.17 Spent Fuel Assembly Storage

BASES

BACKGROUND

The spent fuel storage is designed to store either new (nonirradiated) nuclear fuel assemblies, or burned (irradiated) fuel assemblies in a vertical configuration underwater. The storage pool was originally designed to store up to 1329 fuel assemblies in a borated fuel storage mode. The current storage configuration, which allows credit to be taken for burnup and does not require neutron absorbing (boraflex) storage cans, provides for a maximum storage of 1054 fuel assemblies in a three-region configuration. Region 1 is comprised of three 9x8 storage racks, one 12x8 storage rack and one 9x9 storage rack. To prevent inadvertent storage of a fuel assembly in a cell required to be vacant, cell blocking devices are placed in every other storage cell location to maintain a two-out-of-four checkerboard configuration. Region 2 is comprised of three 9x8 storage racks and one 12x8 storage rack. Cell blocking devices in Region 2 are employed in one out of every four storage cell locations to preclude the possibility of an unanalyzed assembly configuration. Region 3 is comprised of six 9x8 storage racks and two 12x8 storage racks. Since fuel assemblies may be stored in every Region 3 cell location, no cell blocking devices are installed in Region 3. Cell blocking devices are also placed along the Region 2 interface with Region 3 to eliminate the possibility of an unanalyzed arrangement of assemblies. The spent fuel storage cells are installed in parallel rows with a nominal center-to-center spacing of 9.5 inches. This spacing and the storage of fuel in the appropriate region based on assembly burnup in accordance with TS Figure 3.7.17-1 is sufficient to maintain a k_{eff} of $\leq$0.95 for spent fuel of original enrichment of up to 4.30%.

APPLICABLE SAFETY ANALYSES

The spent fuel storage pool is designed for non-criticality by use of adequate spacing, and the storage of fuel in the appropriate region based on assembly burnup in accordance with TS Figure 3.7.17-1.

(continued)

BASES

APPLICABLE SAFETY ANALYSIS (continued)

The analysis of the reactivity effects of fuel storage in the spent fuel storage racks was performed by ABB-Combustion Engineering (CE) using the two-dimensional discrete ordinates transport theory DOT-IV computer code, with four energy group neutron cross sections generated by the CEPAK code. These codes have been previously used by CE for the analysis of fuel rack reactivity and have been benchmarked against results from numerous critical experiments. These experiments simulate the PVNGS fuel storage racks as realistically as possible with respect to parameters important to reactivity such as enrichment and assembly spacing. In March 1992, the NRC issued Information Notice 92-21 and Supplement 1 concerning discrepancies that were discovered in spent fuel pool reactivity calculations. The discrepancies were due to an overestimation of neutron absorption in the CEPAK generation of cross sections. These discrepancies were found to exist only in regions containing a strong neutron absorber (poison). Since neutron poison is not present, this problem does not exist for the PVNGS racks.

The modeling of Regions 2 and 3 included several conservative assumptions. These assumptions neglected the reactivity effects of axial leakage, poison shims in the assemblies, structural grids, and soluble boron in the 68°F pool water. These assumptions tend to increase the calculated effective multiplication factor ($k(_{eff})$) of the racks. The stored fuel assemblies were modeled as CE 16x16 assemblies with a nominal pitch of 0.506 inches between fuel rods, a fuel pellet diameter of 0.33 inches, and a UO(2) density of 10.4 g/cc.

DOT-IV calculations were used to construct a curve of burnup versus initial enrichment for both Regions 2 and 3 (TS Figure 5.6-1) such that all points on the curve produce a k_{eff} value (without uncertainties or biases) of 0.93. This method of reactivity equivalencing has been accepted by the NRC and used for numerous other spent fuel storage pools which take credit for burnup. The NRC criticality acceptance criterion for fuel storage is that k_{eff} be no greater than 0.95, including all uncertainties at a 95% probability/95% confidence level. Therefore, the reactivity of assemblies, minimum monolith thickness, temperature variations, minimum L-insert thickness, assembly enrichment, and assembly burnup were obtained as well as a methodology uncertainty and bias. These were applied to the nominal value of 0.93 to obtain a final k_{eff} 0.944 for the spent fuel racks. This meets the NRC criterion of no greater than 0.95.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

Most abnormal storage conditions will not result in an increase in the k_{eff} of the racks. However, it is possible to postulate events, such as an assembly drop on top of a rack or between a rack and the pool walls or the misloading of an assembly, with a burnup and enrichment combination outside of the acceptable area in TS Figure 3.7.17-1, which could lead to an increase in reactivity. However, for such events, credit may be taken for the presence of 2150 ppm of boron in the pool water required by TS 3.7.15 since the staff does not require the assumption of two unlikely, independent, concurrent events to ensure protection against a criticality accident (double contingency principle). The reduction in k_{eff} caused by the boron more offsets the reactivity addition caused by credible accidents. Therefore, the staff criterion of k_{eff} no greater than 0.95 for any postulated accident is met.

The criticality aspects of the spent fuel pool meet the requirements of General Design Criterion 62 for the prevention of criticality in fuel storage and handling.

The spent fuel pool head load calculations were based on a full pool with 1300 fuel assemblies. The maximum number of fuel assemblies that can be stored in the three-region configuration is 1054 fuel assemblies. The actual loading pattern therefore has a lower decay heat than assumed in the calculations for a full pool.

The original licensing basis for the spent fuel pool allowed for spent fuel to be loaded in either a 4x4 array or a checkerboard array, depending on the use of boraflex poison. Therefore, a fuel handling accident was assumed to occur with maximum loading of the pool. The fuel pool rack construction precludes more than one assembly from being impacted in a fuel handling accident. Therefore, the UFSAR analysis conclusion regarding the worst scenario for a dropped assembly (in which the horizontal impact of a fuel assembly on top of the spent fuel assembly damages fuel rods in the dropped assembly but does not impact fuel in the stored assemblies) continued to be limiting.

The spent fuel assembly storage satisfies Criterion 2 of 10 CFR 50.36 (c)(2)(ii).

(continued)

BASES

LCO

The restrictions on the placement of fuel assemblies within the spent fuel pool, according to Figure 3.7.17-1, in the accompanying LCO, ensures that the k_{eff} of the spent fuel pool will always remain $\leq$ 0.95 assuming the pool to be flooded with unborated water. The restrictions are consistent with the criticality safety analysis performed for the spent fuel pool according to Figure 3.7.17-1, in the accompanying LCO. Specification 4.3.1.1 provides additional details for fuel storage in each of the three Regions.

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in the spent fuel pool.

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 the spent fuel pool is not in accordance with Figure 3.7.17-1, immediate action must be taken to make the necessary fuel assembly movement(s) to bring the configuration into compliance with Figure 3.7.17-1.

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 MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operation. Therefore, in either case, inability to move fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

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 and Specification 4.3.1.1.

(continued)

BASES

REFERENCES

1. UFSAR, Section 9.1.2.
2. PVNGS Operating License Amendments 82, 69, and 54 for Units 1, 2, and 3 respectively, and associated NRC Safety Evaluation, dated September 30, 1994.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.1
MARK UP

<DOC>
<CTS> 3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

<3.7.1.1> LCO 3.7.1 The MSSVs shall be OPERABLE as specified in Table 3.7.1-1 and Table 3.7.1-2.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

------------------------------------NOTE------------------------------------
<DOC A.5> Separate Condition entry is allowed for each MSSV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.1.1 ACT a> A. One or more required MSSVs inoperable.	A.1 Reduce power to less than or equal to the applicable % RTP listed in Table 3.7.1-1.	4 hours
	<u>AND</u>	
<DOC L.2>	A.2 Reduce the *variable overpower trip—high* setpoint [ceiling] in accordance with Table 3.7.1-1. (3)	12 hours
<3.7.1.1 ACT a> B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
<u>OR</u>	<u>AND</u>	
<3.7.1.1 ACT b> One or more steam generators with less than [two] MSSVs OPERABLE. SIX (3)	B.2 Be in MODE 4.	*12* hours

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.7.1.1> <DOC A.7> <DOC M.1> SR 3.7.1.1	---NOTE--- Only ~~required to be performed in MODES 1 and 2.~~ Not required to be performed prior to entry into MODE 3. ① ------ Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ± 1%.	In accordance with the Inservice Testing Program

<DOC>
<CTS>

<TABLE 3.7-2>

Table 3.7.1-1 (page 1 of 1)
Variable Overpower Trip Setpoint versus
OPERABLE Main Steam Safety Valves

MINIMUM NUMBER OF MSSVs PER STEAM GENERATOR REQUIRED OPERABLE	MAXIMUM POWER (% RTP)	MAXIMUM ALLOWABLE *VARIABLE OVERPOWER TRIP* SETPOINT ([~~CEILING~~] % RTP)
~~8~~ 10	100.0	111.0
~~7~~ 9	98.2	108.0
~~6~~ 8	87.3	97.1
~~5~~ 7	76.4	86.2
~~4~~ 6	65.5	75.3
~~3~~		
~~2~~		

③

<DOC>
<CTS>

<TABLE 3.7-1>

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

VALVE NUMBER		LIFT SETTING (psig ± ~~[1]~~ 3%)
Steam Generator #1	Steam Generator #2	
SGE PSV 572	SGE PSV 554	1250
SGE PSV 579	SGE PSV 561	1250
SGE PSV 573	SGE PSV 555	1290
SGE PSV 578	SGE PSV 560	1290
SGE PSV 574	SGE PSV 556	1315
SGE PSV 575	SGE PSV 557	1315
SGE PSV 576	SGE PSV 558	1315
SGE PSV 577	SGE PSV 559	1315
SGE PSV 691	SGE PSV 694	1315
SGE PSV 692	SGE PSV 695	1315

3

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.1
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.1 Main Steam Safety Valves (MSSVs)

BASES

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. (2)

(3) Five ~~Eight~~ MSSVs are located on each of the four main steam ~~header~~ lines (2), outside containment, upstream of the main steam isolation valves, as described in the ~~FSAR~~ CESSAR, Section [5.2] (Ref. 1). The MSSV rated capacity passes the full steam flow at 102% RTP (100% + 2% for instrument error) with the valves full open. This meets the requirements of the ASME Code, Section III (Ref. 2). The MSSV design includes staggered setpoints, according to Table ~~3.7.1-1~~ 3.7.1-2 (3), in the accompanying LCO, so that only the number of valves needed will actuate. Staggered setpoints reduce the potential for valve chattering ~~because of~~ if there is insufficient steam pressure to fully open all valves. ~~following a turbine reactor trip.~~ (2)

APPLICABLE SAFETY ANALYSES

The design basis for the MSSVs comes from Reference 2; its purpose is to limit secondary system pressure to ≤ 110% of design pressure when passing 100% of design steam flow. This design basis is sufficient to cope with any anticipated operational occurrence (AOO) or accident considered in the Design Basis Accident (DBA) and transient analysis. (2)

The events that challenge the MSSV relieving capacity, and thus RCS pressure, are those characterized as decreased heat removal events, and are presented in the FSAR, Section [15.2] (Ref. 3). Of these, the full power loss of condenser vacuum (LOCV) event is the limiting AOO. (2) An LOCV isolates the turbine and condenser, and terminates normal feedwater flow to the steam generators. Before delivery of auxiliary feedwater to the steam generators, RCS pressure reaches ≤ ~~2630 psig~~ 2742 psia (3). This peak pressure is < 110% of the design pressure of 2500 ~~psig~~ psia (3), but high enough to actuate the pressurizer safety valves. The maximum relieving rate

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

14.5
during the LOCV event is ~~2.5~~ E6 lb/hour, which is less than the rated capacity of ~~two~~ MSSVs.
16

The limiting accident for peak RCS pressure is the full power feedwater line break (FWLB), inside containment, with the failure of the backflow check valve in the feedwater line from the affected steam generator. Water from the affected steam generator is assumed to be lost through the break with minimal additional heat transfer from the RCS. With heat removal limited to the unaffected steam generator, the reduced heat transfer causes an increase in RCS temperature, and the resulting RCS fluid expansion causes an increase in pressure. The RCS pressure increases to ≤ ~~2730 psig~~ 2843 psia (3), with the pressurizer safety valves providing relief capacity. These results were found acceptable by the NRC based on the low probability of the event. (3) The maximum relieving rate of the MSSVs during the FWLB event is ≤ ~~2.5~~ 3.8 E6 lb/hour, which is less than the rated capacity of ~~two~~ four MSSVs.

~~Using conservative analysis assumptions, a small range of FWLB sizes less than a full double ended guillotine break produce an RCS pressure of 2765 psig for a period of 20 seconds, exceeding 110% (2750 psig) of design pressure. This is considered acceptable as RCS pressure is still well below 120% of design pressure where deformation may occur. The probability of this event is in the range of 4 E-6/year.~~ (2)

The MSSVs satisfy Criterion 3 of ~~the NRC Policy Statement~~ 10 CFR 50.36 (c)(2)(ii).

LCO

This LCO requires all MSSVs to be OPERABLE in compliance with Reference 2, even though this is not a requirement of the DBA analysis. This is because operation with less than the full number of MSSVs requires limitations on allowable THERMAL POWER (to meet Reference 2 requirements), and adjustment to the Reactor Protection System trip setpoints. These limitations are according to those shown in Table 3.7.1-1, Required Action A.2, and Required Action A.3 in the accompanying LCO. An MSSV is considered inoperable if it fails to open upon demand.

The OPERABILITY of the MSSVs is defined as the ability to open within the setpoint tolerances, relieve steam generator overpressure, and reseat when pressure has been reduced. The OPERABILITY of the MSSVs is determined by periodic

(continued)

BASES

LCO (continued)

surveillance testing in accordance with the Inservice Testing Program.

The lift settings, according to Table 3.7.1-2 in the accompanying LCO, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

This LCO provides assurance that the MSSVs will perform their designed safety function to mitigate the consequences of accidents that could result in a challenge to the RCPB.

3

APPLICABILITY

1 In MODES 1, 2 and 3

SIX

~~In MODE 1~~ a minimum of ~~two~~ MSSVs per steam generator are required to be OPERABLE, according to Table 3.7.1-1 in the accompanying LCO, which is limiting and bounds all lower MODES. ~~In MODES 2 and 3, both the ASME Code and the accident analysis require only one MSSV per steam generator to provide overpressure protection.~~ 3

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

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

A.1 and A.2

When 10 MSSVs are OPERABLE per steam generator, THERMAL POWER is limited to 100% RTP per the Operating Licenses, and the VOPT allowable trip setpoint is limited to 111.0% RTP per TS Table 3.3.1-1

An alternative to restoring the inoperable MSSV(s) to OPERABLE status is to reduce power so that the available MSSV relieving capacity meets Code requirements for the power level. Operation may continue provided the allowable THERMAL POWER is equal to the product of: 1) the ratio of the number of MSSVs available per steam generator to the total number of MSSVs per steam generator, and 2) the ratio of the available relieving capacity to total steam flow, multiplied by 100%.

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

Allowable THERMAL POWER = (~~8~~ 10 3 - N) x 109.2

~~8~~ 10

With one or more MSSVs inoperable, the ceiling on the variable overpower trip is reduced to an amount over the allowable THERMAL POWER equal to the band given for this trip, according to Table 3.7.1-1 in the accompanying LCO.

SP = Allowable THERMAL POWER + 9.8

where:

SP = Reduced reactor trip setpoint in percent RTP. This is a ratio of the available relieving capacity over the total steam flow at rated power.

3 10 ~~8~~ = Total number of MSSVs per steam generator.

N = Number of inoperable MSSVs on the steam generator with the greatest number of inoperable valves.

109.2 = Ratio of MSSV relieving capacity at 110% steam generator design pressure to calculated steam flow rate at 100% RTP + 2% instrument uncertainty expressed as a percentage (see text above).

9.8 = Band between the maximum THERMAL POWER and the variable overpower trip setpoint ceiling (Table 3.7.1-1).

The operator should limit the maximum steady state power level to ~~some value slightly below this setpoint~~ the value determined from Table 3.7.1-1 to avoid an inadvertent overpower trip. 3

4 ~~The 4 hour Completion Time for Required Action A.2 is consistent with A.1. An additional 8 hours is allowed to reduce the setpoints in recognition of the difficulty of resetting all channels of this trip function within a period of 8 hours.~~ The Completion Time of 12 hours for Required Action ~~A.3~~ A.2 is based on operating experience in resetting 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.

(continued)

BASES

ACTIONS (continued)

B.1 and B.2

If the MSSVs cannot be restored to OPERABLE status in the associated Completion Time, or if one or more steam generators have less than two six MSSVs OPERABLE, 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. 3

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoints 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). OM-1 3
According to Reference 5, the following tests are required for MSSVs:

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 tested every 24 months. 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.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This is to

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1 (continued)

allow testing of the MSSVs at hot conditions. 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

CESSAR

1. FSAR Section [5.2].

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

UFSAR

3. FSAR, Section [15.2].

③

4. ASME, Boiler and Pressure Vessel Code, Section XI, Article IWV-3500.

5. ~~ANSI~~/ASME ~~OM-1-1987~~. OMc, 1994 Addenda to the ASME OM Code 1990.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.1

1. NUREG-1432 SR 3.7.1.1 is modified by a note which states, "Only required to be performed in MODES 1 and 2." This note has been changed in ITS SR 3.7.1.1 to read, "Not required to be performed prior to entry into MODE 3." The bases for both NUREG-1432 SR 3.0.4 and ITS SR 3.0.4 states in part, "...the Surveillance may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been met." Revising this note as stated in ITS SR 3.7.1.1 is consistent with NUREG-1432 format and provides greater clarity. This change makes the note consistent with frequency of performance as described in the NUREG-1432 and ITS Bases for this SR.

2. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

3. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

4. Bases 3.7.1, Action A.1 and A.2 states that "The 4 hour Completion Time for Required Action A.2 is consistent with A.1. An additional 8 hours is allowed to reduce the setpoints in recognition of the difficulty of resetting all channels of this trip function within a period of 8 hours." This statement is incorrect. Action A.2 allows 12 hours which is not consistent with the 4 hours stated in Action A.1. Therefore, this statement is being deleted.

PVNGS CTS
SPECIFICATION 3.7.1
MARK UP

Specification 3.7.1

A.1

3.7 ~~3/4.7~~ PLANT SYSTEMS

3.7.1 ~~3/4.7.1 TURBINE CYCLE~~ Main Steam Safety Valves (MSSVs)

~~SAFETY VALVES~~

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.1 ~~3.7.1.1~~ The ~~All~~ main steam safety valves shall be OPERABLE ~~with lift settings~~ as specified in Table ~~3.7-1.~~ 3.7.1-1 and Table 3.7.1-2 L.1 L.3

APPLICABILITY: MODES 1, 2, 3, ~~and 4*~~. A.5

ACTION: NOTE: Separate Condition entry is allowed for each MSSV. A.2

ACT A ~~a.~~ ~~With both reactor coolant loops and associated steam generators in operation and~~ with one or more** main steam safety valves inoperable per steam generator, ~~operation in MODES 1 and 2 may proceed provided that~~ within 4 hours, ~~either all the inoperable valves are restored to OPERABLE status or the maximum variable overpower trip setpoint and~~ the maximum Allowable Steady State Power Level ~~are~~ reduced per Table 3.7-2; otherwise, be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN within the following 30 hours.~~ MODE 4 within 12 hours. M.3 A.3 A.4 L.2

L.2 and within 12 hours, reduce the maximum variable overpower trip setpoint per Table 3.7.1-1.

ACT B ~~b.~~ ~~Operation in MODES 3 and 4* may proceed with at least one reactor coolant loop and associated steam generator in operation, provided that there are no~~ more than four inoperable main steam safety valves associated with ~~the operating steam generator; otherwise, be in COLD SHUTDOWN within the following 30 hours.~~ a required steam generator A.6 M.1

A.7 ~~c. The provisions of Specification 3.0.4 are not applicable.~~

MODE 4 within 12 hours M.4 L.3

SURVEILLANCE REQUIREMENTS

Note: Not required to be performed prior to entry into MODE 3. A.7

SR 3.7.1.1 ~~4.7.1.1 No additional Surveillance Requirements other than those required by Specification 4.0.5.~~ M.2

Verify each required MSSV lift setpoint per Table <ITS> 3.7.1-2 in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ±1%.

*Until the steam generators are no longer required for heat removal. L.3

ACT B **The maximum number of inoperable safety valves on any operating steam generator is four (4).

TABLE 3.7.1-2 ~~TABLE 3.7-1~~

~~STEAM LINE SAFETY VALVES PER LOOPS~~

Main Steam Safety Valve Lift Settings

VALVE NUMBER			LIFT SETTING (±3%)*	~~MINIMUM RATED CAPACITY**~~
	S/G No. 1	S/G No. 2		
a.	SGE PSV 572	SGE PSV 554	1250 psig	~~941,543 lb/hr~~
b.	SGE PSV 579	SGE PSV 561	1250 psig	~~941,543 lb/hr~~
c.	SGE PSV 573	SGE PSV 555	1290 psig	~~971,332 lb/hr~~
d.	SGE PSV 578	SGE PSV 560	1290 psig	~~971,332 lb/hr~~
e.	SGE PSV 574	SGE PSV 556	1315 psig	~~989,950 lb/hr~~
f.	SGE PSV 575	SGE PSV 557	1315 psig	~~989,950 lb/hr~~
g.	SGE PSV 576	SGE PSV 558	1315 psig	~~989,950 lb/hr~~
h.	SGE PSV 577	SGE PSV 559	1315 psig	~~989,950 lb/hr~~
i.	SGE PSV 691	SGE PSV 694	1315 psig	~~989,950 lb/hr~~
j.	SGE PSV 692	SGE PSV 695	13[illegible]5 psig	~~989,950 lb/hr~~

A.1

*The lift setting pressure shall correspond to ambient conditions at the valve at nominal operating temperature and pressure.

LA.2

**Capacity is rated at lift setting +3% accumulation.

A.1

Specification 3.7.1

A.1

TABLE 3.7.1-1 ~~TABLE 3.7-2~~

~~MAXIMUM ALLOWABLE STEADY STATE POWER LEVEL AND MAXIMUM~~ VARIABLE OVERPOWER TRIP SETPOINT ~~WITH INOPERABLE~~ versus OPERABLE MAIN STEAM ~~LINE~~ SAFETY VALVES

MINIMUM ~~MAXIMUM~~ NUMBER OF OPERABLE ~~INOPERABLE~~ SAFETY VALVES ON ANY OPERATING STEAM GENERATOR	MAXIMUM VARIABLE OVERPOWER TRIP SETPOINT (% OF RATED THERMAL POWER)	MAXIMUM ~~ALLOWABLE STEADY STATE~~ POWER ~~LEVEL~~ (% OF RATED THERMAL POWER)
10	111.0	100.0
~~1~~ 9	108.0	98.2~~*~~
~~2~~ 8	97.1	87.3
~~3~~ 7	86.2	76.4
~~4~~ 6	75.3	65.5

A.8

~~*For Unit 1 cycle 5, operation may continue at 100% Allowable Steady State Power Level with one main steam safety valve inoperable per steam generator.~~

A.1

Specification 3.7.1

DISCUSSION OF CHANGES
SPECIFICATION 3.7.1

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 3.7.1.1 Action a states in part, "With both reactor coolant loops and associated steam generators in operation and...." The Actions of ITS 3.7.1 do not contain statements of this type. The opening statement quoted above is a requirement of Modes 1 and 2 and is implied by ITS LCO and Applicability statement. The Actions of ITS 3.7.1 are formatted to be generic to all Modes in the Applicability. Omitting this statement from the ITS does not alter the requirements and has no impact on safety. This change is consistent with NUREG-1432.

A.3 CTS 3.7.1.1 Action a states in part, "...operation in MODES 1 and 2 may proceed provided that..." ITS LCO 3.7.1 Actions do not contain this statement since it is implied that operation may continue if the Required Actions are met within the specified Completion Time. The Bases for ITS LCO 3.0.2 states in part, "Completion of the Required Actions within the Specified Completion Times constitutes compliance with a Specification..." If the Specification is complied with, the Action is complied with and continued operation is allowed. This change has no impact on safety and is consistent with NUREG-1432.

A.4 CTS 3.7.1.1 Action a states in part,"...either all the inoperable valves are restored to OPERABLE status...." ITS LCO 3.7.1 does not explicitly state the option of restoring OPERABILITY. ITS LCO 3.0.2 states, "If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated." The Bases for ITS LCO 3.0.2 states, "Whether stated as a Required Action or not, correction of the entered condition is an action that may always be considered upon entering Actions." The option of restoring OPERABILITY is already provided generically by ITS LCO 3.0.2, therefore it need not be restated in the individual Specifications. This change does not impact safety and is consistent with NUREG-1432.

A.5 ITS LCO 3.7.1 Actions are modified by a Note which states, "Separate Condition entry is allowed for each MSSV." CTS 3.7.1.1 Actions do not contain this clarifying note. The actions of CTS 3.7.1.1 are designed such that it is implied that separate condition entry is allowed. CTS 3.7.1.1 Action a provides the Required Actions for one or more inoperable MSSVs. This Action is modified by an asterisk which states, "The maximum number of inoperable safety valves on any operating steam generator is four (4)." This asterisk makes it clear that more than one MSSV is allowed to be inoperable. Addition of this clarifying Note in ITS LCO 3.7.1 does not alter the intent or application of the Specification. This change does not impact safety and is consistent with NUREG-1432.

A.6 CTS 3.7.1.1 Action b states in part, "Operation in MODES 3 and 4* may proceed with at least one reactor coolant loop and associated steam generator in operation, provided that there are no more than four inoperable main steam safety valves associated with the operating steam generator...." By referencing Table 3.7.1-1 in the LCO, it becomes unnecessary to restate the provisions of normal operations in the Actions. This change does not impact on safety. This change is consistent with NUREG-1432.

A.7 CTS 3.7.1.1 Action c states, "The provisions of Specification 3.0.4 are not applicable." The exclusion of Specification 3.0.4 allows changing Modes with the LCO not met in order to perform surveillance testing at normal operating conditions. ITS SR 3.7.1.1 is modified by a Note which states, "Not required to be performed prior to entry into MODE 3." The Bases for SR 3.7.1.1 states in part, "This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This is to allow testing of the MSSVs at hot conditions." This Note therefore amounts to an exclusion to ITS SR 3.0.4. This change does not impact safety and has been submitted as a generic change to NUREG-1432.

A.8 CTS Table 3.7-2 contains an asterisk stating that for unit 1 cycle 5, operation at 100% steady state power was allowed with one inoperable MSSV. This note is not included in ITS 3.7.1. This statement will no longer be applicable at the time of submittal. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.7.1.1 Action b. Allows operation in Modes 3 and 4 to proceed provided there are no more than four inoperable MSSVs associated with the operating steam generator. ITS LCO 3.7.1 Action B allows continued operation with no more than four inoperable MSSVs associated with a required steam generator. Operation in Mode 3 may require both steam generators to be Operable even though only one required steam generator is required to be in operation. It is reasonable to place the same OPERABILITY requirements on the safety devices of both steam generators whether that specific steam generator is in operation or not. The addition of this requirement constitutes a more restrictive change to PVNGS current operating practice. This change is consistent with NUREG-1432.

M.2 CTS 4.7.1.1 states that no additional SRs other than those required by Specification 4.0.5 need to be performed. Specification 4.0.5 requires inservice testing in accordance with ASME Section XI. ITS SR 3.7.1.1 requires the verification of each MSSV lift setpoint is in compliance with ITS Table 3.7.1-2 with the added requirement that the as left settings are to be within ±1% of the specified value. This change is consistent with PVNGS current operating practices and commitments made to the NRC, but is considered a more restrictive change since the commitments now become TS requirements. This change does not impact safety and is consistent with NUREG-1432.

M.3 CTS 3.7.1.1 Action a requires the unit be placed in COLD SHUTDOWN if the inoperable MSSVs are not restored to OPERABILITY or if the RTP and VOPT are not reduced within 4 hours. Since the Applicability of the Specification now ends in MODE 3 (ref. DOC L.3), the appropriate Action is to exit the Applicability by placing the unit in Hot Shutdown within 12 hours. The Bases for CTS 3.0.1 states in part, "If these actions are not completed within the allowable outage time limits, a shutdown is required to place the facility in a MODE or condition in which the specification no longer applies." LCO 3.7.1 Required Action B.2 is changed consistent with this application of CTS LCO 3.0.1. This change does not impact safety and is consistent with NUREG-1432.

M.4 CTS 3.7.1.1 Action b allows 30 hours in Modes 3 or 4 before the plant must be in Mode 5 if more than 4 MSSVs are inoperable on one steam generator. ITS 3.7.1 Action B.2 allows only 12 hours in Mode 3 before the plant must be in Mode 4 if more than four MSSVs are inoperable on one steam generator. In this situation, even though the end Mode is less restrictive in the ITS (Mode 4 in ITS vs. Mode 5 in CTS), the time that the plant can operate in Mode 3 is more restrictive in ITS (since CTS doesn't limit Mode 3 operation to 12 hours). This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS Table 3.7-1 contains information on minimum rated capacity of the MSSVs. This information is not used in determining the OPERABILITY of the MSSVs. The rated capacity is a function of the component and system design. The evaluation of the Loss of Condenser Vacuum event in Chapter 15 of the UFSAR states in part, "There are no credible failures which can degrade pressurizer safety valve or main steam safety valve capacity." This requirement is therefore is being relocated to the UFSAR.

Any change to the requirements in the UFSAR will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of regulatory control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the UFSAR is acceptable and is consistent with NUREG-1432.

LA.2 CTS Table 3.7-1 contains an asterisk which provides details of lift set pressure testing which are not required to determine the OPERABILITY of the MSSVs. The information contained in this Note is relocated to the ITS 3.7.1 Bases for SR 3.7.1.1. This Bases states in part, "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. Relocating this information to the Bases does not alter the requirements of the SR.

Any change to the requirements in the Bases will be governed by the provisions of 10 CFR 50.59 and the TS Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to a Licensee Controlled Document is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.7.1.1 states, "All main steam safety valves shall be OPERABLE with lift settings as specified in Table 3.7-1." Table CTS 3.7-1 provides the required lift settings and minimum rated capacities for the MSSVs. ITS LCO 3.7.1 states, "The MSSVs shall be OPERABLE as specified in Table 3.7.1-1 and 3.7.1-2." Table ITS 3.7.1-1 provides the maximum allowable variable overpower trip setpoints and maximum allowed RTP in relation to the number of MSSVs required OPERABLE. Table ITS 3.7.1-2 provides the required lift settings for the MSSVs. The information contained in Table ITS 3.7.1-1 is also contained in Table CTS 3.7-2 (although it is presented as a function of the number of inoperable MSSVs); however, in CTS 3/4.7.1 this information is used as part of an Action which allows continued operation if, "...the maximum variable overpower trip setpoint and the maximum Allowable Steady State Power Level are reduced per Table 3.7-2." Including VOPT and RTP in the ITS LCO 3.7.1 allows continued operation with up to 4 inoperable MSSVs per operating steam generator and the LCO is still complied with. Since operation with up to 4 inoperable MSSVs was also allowed in CTS 3/4.7.1, albeit under an Action statement, there is no impact to safety. This change is consistent with NUREG-1432.

L.2 CTS 3.7.1.1 Action a requires the VOPT setpoint to be reduced within 4 hours with one or more MSSVs inoperable. ITS LCO 3.7.1 Required Action A.2 allows a Completion Time of 12 hours to perform this same action. The Completion Time of 12 hours is based on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period. This change has no impact on safety and is consistent with NUREG-1432.

L.3 CTS 3.7.1.1 is Applicable in MODES 1, 2, 3, and Mode 4 until the steam generators are no longer required for heat removal. ITS 3.7.1 is Applicable in Modes 1, 2, and 3. The MSSVs are not required to be Operable in Mode 4 due to the low temperature and pressure which result in a decreased potential for over pressurization of the steam generators and the RCS. The availability of the atmospheric dump valves and the Shutdown Cooling System also provides additional safety grade means of removing energy from the Steam Generators and the RCS. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.1

ADMINISTRATIVE CHANGES
(ITS 3.7.1 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7, and A.8)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Specification to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.1 Discussion of Changes Labeled A.1, A.2, A.3, A.4, A.5, A.6, A.7, and A.8) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled M.1, M.2, M.3, and M.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled M.1, M.2, M.3, and M.4) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.1 Discussion of Changes Labeled LA.1 and LA.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.1 Discussion of Changes Labeled LA.1 and LA.2) (continued)

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed change allows operation with inoperable Main Steam Safety Valves (MSSVs) under the LCO. The CTS requires that the MSSVs' Variable Overpower Trip (VOPT) setpoints and the Reactor Thermal Power (RTP) be reduced to comply with Actions if one or more MSSV is inoperable. By adding the RTP and VOPT requirements to the ITS LCO, the unit is able to exit the Action and continue operation in compliance with the LCO once the RTP and VOPT conditions have been met. This change is considered less restrictive since it allows continued operation in compliance with the LCO with inoperable MSSVs although there is no change to the number of inoperable MSSVs allowed, the allowable RTP or the VOPT setpoints required.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows operation with inoperable Main Steam Safety Valves (MSSVs) under the LCO. The CTS requires that the MSSVs' Variable Overpower Trip (VOPT) setpoints and the Reactor Thermal Power (RTP) be reduced to comply with Actions if one or more MSSV is inoperable. By adding the RTP and VOPT requirements to the ITS LCO, the unit is able to exit the Action and continue operation in compliance with the LCO once the RTP and VOPT conditions have been met. This change is considered less restrictive since it allows continued operation in compliance with the LCO with inoperable MSSVs although there is no change to the number of inoperable MSSVs allowed, the allowable RTP or the VOPT setpoints required.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows operation with inoperable Main Steam Safety Valves (MSSVs) under the LCO. The CTS requires that the Variable Overpower Trip (VOPT) setpoint and the Reactor Thermal Power (RTP) be reduced to comply with Actions if one or more MSSV is inoperable. By adding the RTP and VOPT requirements to the ITS LCO, the unit is able to exit the Action and continue operation in compliance with the LCO once the RTP and VOPT conditions have been met. This change is considered less restrictive since it allows continued operation in compliance with the LCO with inoperable MSSVs although there is no change to the number of inoperable MSSVs allowed, the allowable RTP or the VOPT setpoints required.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 3.7.1.1 Action a requires the VOPT setpoint to be reduced within 4 hours with one or more MSSVs inoperable. ITS LCO 3.7.1 Required Action A.2 allows a Completion Time of 12 hours to perform this same action. The Completion Time of 12 hours is based on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period. This change has no impact on safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed change increases the Completion Time for reducing the VOPT setpoint from 4 hours in the CTS to 12 hours in the ITS. The MSSVs are required to provide overpressure protection for the secondary system. There are 10 MSSVs associated with each of the steam generators. With one or more MSSV inoperable, the relieving capacity is reduced such that the RTP and VOPT must also be reduced to assure the integrity of the secondary system is maintained. The 12 hour completion time is based on operating experience in resetting all channels of a protective function. Allowing 12 hours instead of four hours to reset the VOPT setpoint is acceptable based on the low probability of a decreased heat removal event during this short time period.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.2) (continued)

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change increases the Completion Time for reducing the VOPT setpoint from 4 hours in the CTS to 12 hours in the ITS. The MSSVs are required to provide overpressure protection for the secondary system. There are 10 MSSVs associated with each of the steam generators. With one or more MSSV inoperable, the relieving capacity is reduced such that the RTP and VOPT must also be reduced to assure the integrity of the secondary system is maintained. The 12 hour completion time is based on operating experience in resetting all channels of a protective function. Allowing 12 hours instead of four hours to reset the VOPT setpoint is acceptable based on the low probability of a decreased heat removal event during this short time period.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.2) (continued)

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

The proposed change increases the Completion Time for reducing the VOPT setpoint from 4 hours in the CTS to 12 hours in the ITS. The MSSVs are required to provide overpressure protection for the secondary system. There are 10 MSSVs associated with each of the steam generators. With one or more MSSV inoperable, the relieving capacity is reduced such that the RTP and VOPT must also be reduced to assure the integrity of the secondary system is maintained. The 12 hour completion time is based on operating experience in resetting all channels of a protective function. Allowing 12 hours instead of four hours to reset the VOPT setpoint is acceptable based on the low probability of a decreased heat removal event during this short time period.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.3 CTS 3.7.1.1 is Applicable in MODES 1, 2, 3, and Mode 4 until the steam generators are no longer required for heat removal. ITS 3.7.1 is Applicable in Modes 1, 2, and 3. The MSSVs are not required to be Operable in Mode 4 due to the low temperature and pressure which result in a decreased potential for over pressurization of the steam generators and the RCS. The availability of the atmospheric dump valves and the Shutdown Cooling System also provides additional safety grade means of removing energy from the Steam Generators and the RCS. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed change modifies the Applicability of the MSSV Specification by removing the requirement to maintain the MSSVs Operable in Mode 4. The MSSVs are required to provide overpressure protection for the secondary system and to remove heat from the primary system. The MSSVs are not required to be Operable in Mode 4 due to the low energy contained in the steam generators. In this condition, the potential for overpressurizing the steam generators is extremely low. The ADVs are available to depressurize the secondary system and remove heat from the primary system during Mode 4 if the steam generators are relied upon for heat removal. The Shutdown Cooling System may also be available in Mode 4 for removal of heat from the primary system.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.3) (continued)

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the Applicability of the MSSV Specification by removing the requirement to maintain the MSSVs Operable in Mode 4. The MSSVs are required to provide overpressure protection for the secondary system and to remove heat from the primary system. The MSSVs are not required to be Operable in Mode 4 due to the low energy contained in the steam generators. In this condition, the potential for overpressurizing the steam generators is extremely low. The ADVs are available to depressurize the secondary system and remove heat from the primary system during Mode 4 if the steam generators are relied upon for heat removal. The Shutdown Cooling System may also be available in Mode 4 for removal of heat from the primary system. This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.1 Discussion of Changes Labeled L.3) (continued)

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

The proposed change modifies the Applicability of the MSSV Specification by removing the requirement to maintain the MSSVs Operable in Mode 4. The MSSVs are required to provide overpressure protection for the secondary system and to remove heat from the primary system. The MSSVs are not required to be Operable in Mode 4 due to the low energy contained in the steam generators. In this condition, the potential for overpressurizing the steam generators is extremely low. The ADVs are available to depressurize the secondary system and remove heat from the primary system during Mode 4 if the steam generators are relied upon for heat removal. The Shutdown Cooling System may also be available in Mode 4 for removal of heat from the primary system. This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.2
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

<3.7.1.5> LCO 3.7.2 ~~[Two]~~ Four (4) MSIVs shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 ~~and 3~~ , 3, and 4 (1) except when all MSIVs are closed ~~and [de-activated]~~.

<DOC L.4>

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.1.5 ACT MODE 1>	A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	~~[8]~~ 4 (4) hours
<3.7.1.5 ACT MODE 1>	B. Required Action and Associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
<3.7.1.5 ACT MODES 2,3,4> <DOC L.1> <DOC M.1>	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]~~ 4 (4) hours Once per 7 days
<3.7.1.5 ACT MODES 2,3,4> <DOC L.5>	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~~ 5 (1).	6 hours ~~[12]~~ 36 (1) hours

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.7.1.5.1> <DOC A.3> <DOC L.2>	SR 3.7.2.1 ------------------NOTE------------------ Only required to be performed in MODES 1 and 2. -- Verify closure time of each MSIV is ≤ [4.6] seconds on an actual or simulated actuation signal. Not required to be performed prior to entry into MODE 3. (2)	In accordance with the [Inservice Testing Program or [18] months] (5)

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.2
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.2 Main Steam Isolation Valves (MSIVs)

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 generator.

(3.)

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), atmospheric dump valves, and auxiliary feedwater pump turbine steam supplies to prevent their being isolated from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the other, and isolates the turbine, Steam Bypass Control System, and other auxiliary steam supplies from the steam generators.

(3) (4)

The MSIVs close on a main steam isolation signal generated by either low steam generator pressure, high steam generator level, or high containment pressure. The MSIVs fail closed on loss of control or actuation power. The MSIS also actuates the main feedwater isolation valves (MFIVs) to close. The MSIVs may also be actuated manually.

(4) (3)

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

APPLICABLE SAFETY ANALYSES

The design basis of the MSIVs is established by the containment analysis for the large steam line break (SLB) inside containment, as discussed in the ~~FSAR~~ CESSAR, Section [6.2] (Ref. 2). It is also influenced by the accident analysis of the SLB events presented in the ~~FSAR~~ UFSAR, 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).

(3) (3)

The limiting case for the containment analysis is the hot zero power SLB inside containment with a loss of offsite power following turbine trip, and failure of the MSIV on the affected steam ~~generator~~ line to close. At zero power, the steam generator inventory and temperature are at their maximum,

(4)

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

(3) MSIVs

element (4)

maximizing the analyzed mass and energy release to the containment. Due to reverse flow, failure of the MSIV to close contributes to the total release of the additional mass and energy in the steam headers, which are downstream of the other MSIV. With the most reactive rod cluster control assembly assumed stuck in the fully withdrawn position, there is an increased possibility that the core will become critical and return to power. The core is ultimately shut down by the borated water injection delivered by the Emergency Core Cooling System. Other failures considered are the failure of an MFIV to close, and failure of an emergency diesel generator to start.

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. 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 (RCS) cooldown. With a loss of offsite power, the response of mitigating systems, such as the high pressure safety injection (HPSI) pumps, is delayed. Significant single failures considered include: failure of a MSIV to close, failure of an emergency diesel generator, and failure of a HPSI pump. (3)

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 the containment, the analysis assumes that the MSIV in the affected steam generator remains open. For this accident scenario, steam is discharged into containment from both steam generators until closure of the MSIV in the intact steam generator occurs. After MSIV closure, steam is discharged into containment only from the affected steam generator, and from the residual steam in the

line (4) MSIVs (2)

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

main steam header downstream of the closed ~~MSIV~~ MSIVs in the intact ~~loop~~ loops. 3

b. A break outside of containment and upstream from the MSIVs. This scenario 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. This type of break will be isolated by the closure of the MSIVs. Events such as increased steam flow through the turbine or the steam bypass valves will also terminate on closure of the MSIVs.

d. A steam generator tube rupture. For this scenario, closure of the MSIVs isolates the affected steam generator from the intact steam generator. In addition to minimizing radiological releases, this enables the operator to maintain the pressure of the steam generator with the ruptured tube below the MSSV setpoints, a necessary step toward isolating the flow through the rupture.

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

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

4

LCO

This LCO requires that the MSIV in each of the ~~two~~ four steam lines be OPERABLE. The MSIVs are considered OPERABLE when the isolation times are within limits, and they close on an isolation actuation signal. 4

The MSIVs have redundant actuator trains. An MSIV is OPERABLE with one train of hydraulics unavailable to shut the valve. Only one OPERABLE MSIV is allowed to have an unavailable hydraulic train.

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~~.

(continued)

BASES (continued)

APPLICABILITY

The MSIVs must be OPERABLE in MODE 1 and in MODES 2, ~~and~~ 3 and 4 (1) except when all MSIVs are closed ~~and [deactivated]~~ when there is significant mass and energy in the RCS and steam generators. When the MSIVs are closed, they are already performing their safety function.

In MODE 4, the steam generator energy is low; therefore, the MSIVs are not required to be OPERABLE.

In MODES 5 and 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.

ACTIONS

A.1 and A.2 (3)

With one MSIV inoperable in MODE 1, time is allowed to restore the component to OPERABLE status. Some repairs can be made to the MSIV with the unit hot. The [8] hour (4) (4) Completion Time is reasonable, considering the probability of an accident occurring during the time period that would require closure of the MSIVs.

(4) The [8] (4) hour Completion Time is ~~greater than~~ Consistent with (3) that normally allowed for containment isolation valves ~~because the MSIVs are valves~~ that isolate a 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

If the MSIV cannot be restored to OPERABLE status within [8] hours, the unit must be placed in a MODE in which the (4) LCO does not apply. To achieve this status, the unit must (4) be placed in MODE 2 within 6 hours and Condition C would be entered. The Completion Time is reasonable, based on operating experience, to reach MODE 2, and close the MSIVs in an orderly manner and without challenging unit systems.

(continued)

BASES

ACTIONS (continued)

C.1, C.2.1, and C.2.2 3

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.

4 The [8] 4 hour Completion Time is consistent with that allowed in Condition A.

Inoperable MSIVs that cannot be restored to OPERABLE status within the specified Completion Time, but are closed, 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, MSIV status indications available in the control room, and other administrative controls, to ensure these valves are in the closed position.

D.1 and D.2 5 1

If the MSIVs cannot be restored to OPERABLE status, or 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 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 MODE 2 conditions in an orderly manner and without challenging unit systems. 36

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR verifies that the closure time of each MSIV is ≤ [4.6] seconds on an actual or simulated actuation signal. The MSIV closure time is assumed in the accident and containment analyses. This SR is normally performed upon returning the unit to operation following a refueling

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1 (continued) fullstroke 4

outage. The MSIVs should not be tested at power, ~~since even a part stroke exercise increases the risk of a valve closure with the unit 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 MODES 1 and 2.~~

The Frequency for this SR is in accordance with the [Inservice Testing Program ~~or [18] months~~]. This ~~[18] month~~ Frequency demonstrates the valve closure time at least once per refueling cycle. ~~Operating experience has shown that these components usually pass the SR when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.~~ 5

This test is conducted in MODE 3, with the unit at operating temperature and pressure, as discussed in the Reference 5 exercising requirements. 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, in order to establish conditions consistent with those under which the acceptance criterion was generated.

REFERENCES

4

1. UFSAR ~~FSAR~~ Section [10.3].
2. CESSAR ~~FSAR~~, Section [6.2].
3. UFSAR ~~FSAR~~, Section [15.1.5].
4. 10 CFR 100.11.
5. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.2

1. NUREG-1432 Specification 3.7.2 is Applicable in Mode 1, and Modes 2 and 3 except when all MSIVs are closed. ITS Specification 3.7.2 is Applicable in Mode 1, and Modes 2, 3, and 4 except when all MSIVs are closed. The addition of Mode 4 to the Applicability is required to minimize the positive reactivity effects of a Reactor Coolant System cooldown associated with blowdown of the steam generators. Shutdown Actions have been revised for consistency with this change. This change does not have a negative impact on safety and is consistent with CTS 3/4.7.1.5.

2. NUREG-1432 SR 3.7.2.1 is modified by a note which states, "Only required to be performed in MODES 1 and 2." This note has been changed in ITS SR 3.7.2.1 to read, "Not required to be performed prior to entry into MODE 3." The bases for both NUREG-1432 SR 3.0.4 and ITS SR 3.0.4 states in part, "...the Surveillance may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been met." Revising this note as stated in ITS SR 3.7.2.1 is consistent with NUREG-1432 format and provides greater clarity. This change makes the note consistent with the frequency of performance as described in the NUREG-1432 and ITS Bases for this SR.

3. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

4. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

5. NUREG SR 3.7.2.1 contains a Frequency in accordance with the Inservice Testing Program (IST) or 18 months. PVNGS will preform this SR in accordance with the Inservice Testing Program, therefore, the reference to 18 month testing is being deleted. The Bases has also been revised to be consistent with the Specification.

PVNGS CTS
SPECIFICATION 3.7.2
MARK UP

A.1

3.7 PLANT SYSTEMS

3.7.2 MAIN STEAM LINE ISOLATION VALVES (MSIVs)

~~LIMITING CONDITION FOR OPERATION~~

Four MSIVs

LCO3.7.2 ~~3.7.1.5~~ ~~Each main steam line isolation valve~~ shall be OPERABLE.

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

L.4 MODES 2, 3, and 4 except when all MSIVs are closed

ACTION:

MODE 1:

ACT A 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;

ACT B otherwise, be in at least MODE 2 within the next 6 hours. L.1

MODES 2, 3, and 4: NOTE: Separate Condition entry is allowed for each MSIV.

ACT C With one or more main steam line isolation valve inoperable, ~~subsequent operation in MODE 2, 3, or 4 may proceed provided:~~

~~a. The isolation valve is maintained closed.~~ Close MSIV within 4 hours. Verify MSIV is closed once per 7 days M.1

~~b. The provisions of Specification 3.0.4 are not applicable.~~ A.4

ACT D Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR3.7.2.1 ~~4.7.1.5.1 Each main steam line isolation valve shall be demonstrated OPERABLE by~~ verifying full closure within 4.6 seconds upon receipt of an actual or simulated actuation signal (L.2) when tested ~~pursuant to Specification 4.0.5.~~ in accordance with the Inservice Testing Program. A.2

SR3.7.2.1 Note ~~4.7.1.5.2~~ ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or MODE 4 to perform the surveillance testing of Specification 4.7.1.5.1 provided the testing is performed within 12 hours after achieving normal operating steam pressure and normal operating temperature for the secondary side to perform the test.~~ A.3 L.3

Note: Not required to be performed prior to entry into MODE 3. A.3

DISCUSSION OF CHANGES
SPECIFICATION 3.7.2

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.7.1.5.1 Requires stroke time testing of the MSIVs pursuant to CTS 4.0.5. ITS SR 3.7.2.1 requires that stroke time testing of the MSIVs be performed in accordance with the Inservice Testing Program. CTS 4.0.5 provides the inservice testing requirements for ASME Code Class 1, 2, and 3 components. Inservice testing is performed to monitor equipment condition to assure operational readiness. The requirements for inservice testing are now specified in ITS 5.5.8 which references the Inservice Testing Program. Relocation of inservice testing requirements from CTS 4.0.5 to the administrative requirements of the ITS is discussed in Chapter 5. This change does not impact safety. This change is consistent with NUREG-1432.

A.3 CTS 4.7.1.5.2 states in part, "The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 to perform the surveillance testing of Specification 4.7.1.5.1...." ITS SR 3.7.2.1 is modified by a note which states, "Not required to be performed prior to entry into MODE 3." The Bases for ITS SR 3.7.2.1 states in part, "...This test is conducted in MODE 3, with the unit at operating temperature and pressure, as discussed in the Reference 5 exercising requirements. 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, in order to establish conditions consistent with those under which the acceptance criterion was generated." The exclusion to CTS 4.0.4 contained in CTS 4.7.1.5.2 allows changing MODES with Surveillances not met so that the plant conditions required to perform the Surveillance can be established. The Note contained in ITS SR 3.7.2.1 also allows entry into MODE 3 with the Surveillance not met for the purpose of establishing initial test parameters. This change does not impact safety and has been submitted as a generic change to NUREG-1432.

A.4 CTS 3.7.1.5 Mode 2, 3, and 4 Action b states, "The provisions of Specification 3.0.4 are not applicable." ITS LCO 3.7.2 Action C does not contain a similar exclusion from the requirements of ITS LCO 3.0.4. CTS Specification 3.0.4 prohibits changing Modes when the LCO is not met and the associated Action requires a shutdown if the LCO is not met in a specified amount of time. Both CTS 3.7.1.5 Mode 2, 3, and 4 Action a and ITS LCO 3.7.2 Action C permit continued operation for an unlimited period of time. Compliance with Actions that permit continued operation for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. Since both the ITS Action and CTS Action allow continued operation for an unlimited period of time, changes in Mode are allowed in compliance with the Actions and no exclusion from Specification 3.0.4 is required. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.7.1.5 Mode 2, 3, and 4 Action a requires inoperable MSIVs to be maintained closed. ITS LCO 3.7.2 Action C requires that inoperable MSIVs be closed within 4 hours and verified to be closed once per seven days. A completion time of 4 hours is added to assure that the MSIV flow paths are isolated in a timely manner and is consistent with the completion time for other CIVs which isolate a closed system inside containment. The periodic verification assures that the inoperable MSIVs remain in the position required for them to perform their safety function. The seven day completion time for the periodic verification is reasonable based on engineering judgment, MSIV status indications available in the control room, and other administrative controls, to ensure these valves are in the closed position. Addition of the completion times and periodic verification of MSIV position results in a more restrictive change to current PVNGS plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

None.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.7.1.5 states, "Each main steam line isolation valve shall be OPERABLE." ITS LCO 3.7.2 states, "Four MSIVs shall be OPERABLE." ITS LCO 3.7.2 Action C (one or more MSIVs inoperable in Mode 2, 3, or 4) is modified by a note which states, "Separate Condition entry is allowed for each MSIV." This note does not appear in CTS 3.7.1.5. The note allows more than one MSIV to be inoperable with the Required Actions and Completion Times of ITS 3.7.2 Action C applied separately for each inoperable valve. Allowing separate condition entry for each MSIV is acceptable since the valves are fulfilling their safety function when closed. There is no impact on safety due to this change. This change is consistent with NUREG-1432.

L.2 CTS 4.7.1.5.1 requires closed stroke time testing of the MSIVs. ITS SR 3.7.2.1 also requires stroke time testing but allows the additional flexibility of using an actual or simulated actuation signal to initiate valve closure. This change allows PVNGS to take credit for MSIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the MSIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original Frequency. PVNGS would have the option to either start the SR Frequency from receipt of the actual actuation or to retest the MSIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change is consistent with NUREG-1432.

L.3 CTS 4.7.1.5.2 is an exclusion to the requirements of CTS Specification 4.0.4. This exclusion allows entry into Mode 3 and Mode 4 to perform Surveillance testing of the MSIVs. CTS 4.7.1.5.2 further states that the required SRs must be performed within 12 hours of reaching normal operating pressure and temperature for the secondary side. ITS SR 3.7.2.1 allows entry into Mode 3 to perform testing, but does not specify a time limit for performance of the SR once the appropriate test conditions are established. Operation in Mode 3 with the SR not current is acceptable based on the limited amount of time the unit is expected to remain in this condition and the low probability of an event occurring during this time which would challenge the MSIVs. It is expected that the SR be performed in a timely manner once the appropriate plant conditions are established. This change is consistent with NUREG-1432.

L.4 CTS 3/4.7.1.5 is Applicable in Modes 1, 2, 3, and 4. ITS 3.7.2 is Applicable in Mode 1 and Modes 2, 3, and 4 except when all MSIVs are closed. When all MSIVs are closed, they are already performing their safety function and therefore could be considered Operable. With the position of the MSIVs administratively controlled, the probability of the MSIVs being mis-positioned is minimal, therefore, no LCO, Actions, or SRs need be applied to assure safe operation of the plant. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.2

ADMINISTRATIVE CHANGES
(ITS 3.7.2 Discussion of Changes Labeled A.1, A.2, A.3, and A.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.2 Discussion of Changes Labeled (A.1, A.2, A.3, and A.4) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled M.1) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.7.1.5 states, "Each main steam line isolation valve shall be OPERABLE." ITS LCO 3.7.2 states, "Four MSIVs shall be OPERABLE." ITS LCO 3.7.2 Action C (one or more MSIVs inoperable in Mode 2, 3, or 4) is modified by a note which states, "Separate Condition entry is allowed for each MSIV." This note does not appear in CTS 3.7.1.5. The note allows more than one MSIV to be inoperable with the Required Actions and Completion Times of ITS 3.7.2 Action C applied separately for each inoperable valve. Allowing separate condition entry for each MSIV is acceptable since the valves are fulfilling their safety function when closed. There is no impact on safety due to this change. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.2 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows separate condition entry for each inoperable MSIV in Modes 2, 3, and 4. The Required Action associated with this condition is to close the inoperable MSIV within 4 hours and verify that the valve remains in the closed position once every 7 days. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the inoperable MSIV closed to comply with Actions, it is already in the position required for it to perform its safety function. The closed valve could be considered Operable; therefore, there is no impact to safety by allowing multiple valves in this condition. The MSSVs and ADVs are upstream of the MSIVs to allow for over pressure protection and heat removal if required.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.2 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows separate condition entry for each inoperable MSIV in Modes 2, 3, and 4. The Required Action associated with this condition is to close the inoperable MSIV within 4 hours and verify that the valve remains in the closed position once every 7 days. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the inoperable MSIV closed to comply with Actions, it is already in the position required for it to perform its safety function. The closed valve could be considered Operable; therefore, there is no impact to safety by allowing multiple valves in this condition. The MSSVs and ADVs are upstream of the MSIVs to allow for over pressure protection and heat removal if required.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.2 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows separate condition entry for each inoperable MSIV in Modes 2, 3, and 4. The Required Action associated with this condition is to close the inoperable MSIV within 4 hours and verify that the valve remains in the closed position once every 7 days. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the inoperable MSIV closed to comply with Actions, it is already in the position required for it to perform its safety function. The closed valve could be considered Operable; therefore, there is no impact to safety by allowing multiple valves in this condition. The MSSVs and ADVs are upstream of the MSIVs to allow for over pressure protection and heat removal if required.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 4.7.1.5.1 requires closed stroke time testing of the MSIVs. ITS SR 3.7.2.1 also requires stroke time testing but allows the additional flexibility of using an actual or simulated actuation signal to initiate valve closure. This change allows PVNGS to take credit for MSIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the MSIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original Frequency. PVNGS would have the option to either start the SR Frequency from receipt of the actual actuation or to retest the MSIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.2) (continued)

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

The proposed change allows stroke timing of the MSIVs using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for MSIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the MSIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the MSIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows stroke timing of the MSIVs using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for MSIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the MSIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the MSIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.2) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows stroke timing of the MSIVs using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for MSIV SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the MSIVs properly actuate per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the MSIVs as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.3 CTS 4.7.1.5.2 is an exclusion to the requirements of CTS Specification 4.0.4. This exclusion allows entry into Mode 3 and Mode 4 to perform Surveillance testing of the MSIVs. CTS 4.7.1.5.2 further states that the required SRs must be performed within 12 hours of reaching normal operating pressure and temperature for the secondary side. ITS SR 3.7.2.1 allows entry into Mode 3 to perform testing, but does not specify a time limit for performance of the SR once the appropriate test conditions are established. Operation in Mode 3 with the SR not current is acceptable based on the limited amount of time the unit is expected to remain in this condition and the low probability of an event occurring during this time which would challenge the MSIVs. It is expected that the SR be performed in a timely manner once the appropriate plant conditions are established. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.3) (continued)

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

The proposed change involves a change in the exclusion which allows changing Modes with the MSIV stroke time testing not met. The CTS contains an exclusion which allows entry into Mode 3 or 4 to perform stroke time testing provided the testing is performed within 12 hours after achieving normal operating steam pressure and normal operating pressure for the secondary side. The ITS does not require performance of this SR prior to entry into Mode 3, but does not specify a time period during which the test must be performed once Mode 3 is achieved. The exclusion which allows entry into Mode 3 to perform this SR is required to establish the initial conditions of the SR. Removing the requirement to perform this SR within 12 hours of Mode 3 entry is acceptable based on the limited time the unit is expected to remain in this condition and the fact that the most probable outcome of the Surveillance is confirmation that the components are in compliance with OPERABILITY requirements. Should one or more MSIV be found with stroke times exceeding the acceptance criteria, the unit can be placed in a safe condition by closing or isolating the inoperable valve.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.3) (continued)

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

The proposed change involves a change in the exclusion which allows changing Modes with the MSIV stroke time testing not met. The CTS contains an exclusion which allows entry into Mode 3 or 4 to perform stroke time testing provided the testing is performed within 12 hours after achieving normal operating steam pressure and normal operating pressure for the secondary side. The ITS does not require performance of this SR prior to entry into Mode 3, but does not specify a time period during which the test must be performed once Mode 3 is achieved. The exclusion which allows entry into Mode 3 to perform this SR is required to establish the initial conditions of the SR. Removing the requirement to perform this SR within 12 hours of Mode 3 entry is acceptable based on the limited time the unit is expected to remain in this condition and the fact that the most probable outcome of the Surveillance is confirmation that the components are in compliance with OPERABILITY requirements. Should one or more MSIV be found with stroke times exceeding the acceptance criteria, the unit can be placed in a safe condition by closing or isolating the inoperable valve.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.3) (continued)

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

The proposed change involves a change in the exclusion which allows changing Modes with the MSIV stroke time testing not met. The CTS contains an exclusion which allows entry into Mode 3 or 4 to perform stroke time testing provided the testing is performed within 12 hours after achieving normal operating steam pressure and normal operating pressure for the secondary side. The ITS does not require performance of this SR prior to entry into Mode 3, but does not specify a time period during which the test must be performed once Mode 3 is achieved. The exclusion which allows entry into Mode 3 to perform this SR is required to establish the initial conditions of the SR. Removing the requirement to perform this SR within 12 hours of Mode 3 entry is acceptable based on the limited time the unit is expected to remain in this condition and the fact that the most probable outcome of the Surveillance is confirmation that the components are in compliance with OPERABILITY requirements. Should one or more MSIV be found with stroke times exceeding the acceptance criteria, the unit can be placed in a safe condition by closing or isolating the inoperable valve.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.4 CTS 3/4.7.1.5 is Applicable in Modes 1, 2, 3, and 4. ITS 3.7.2 is Applicable in Mode 1 and Modes 2, 3, and 4 except when all MSIVs are closed. When all MSIVs are closed, they are already performing their safety function and therefore could be considered Operable. With the position of the MSIVs administratively controlled, the probability of the MSIVs being mis-positioned is minimal, therefore, no LCO, Actions, or SRs need be applied to assure safe operation of the plant. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.4) (continued)

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

The proposed change modifies the Applicability of the MSIV Specification. The ITS does not require the MSIVs to be Operable in Modes 2, 3, and 4 if all MSIVs are closed. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the MSIVs closed, they are already in the position required to perform their safety function. The closed valves could be considered Operable; therefore, there is no impact to safety by not requiring these valves to be Operable in Modes 2, 3, and 4 when they are all closed. With the MSIVs closed, the MSSVs and ADVs are still available to provide over pressure protection for the secondary system and heat removal for the primary system.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change modifies the Applicability of the MSIV Specification. The ITS does not require the MSIVs to be Operable in Modes 2, 3, and 4 if all MSIVs are closed. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the MSIVs closed, they are already in the position required to perform their safety function. The closed valves could be considered Operable; therefore, there is no impact to safety by not requiring these valves to be Operable in Modes 2, 3, and 4 when they are all closed. With the MSIVs closed, the MSSVs and ADVs are still available to provide over pressure protection for the secondary system and heat removal for the primary system.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.2 Discussion of Changes Labeled L.4) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change modifies the Applicability of the MSIV Specification. The ITS does not require the MSIVs to be Operable in Modes 2, 3, and 4 if all MSIVs are closed. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the MSIVs closed, they are already in the position required to perform their safety function. The closed valves could be considered Operable; therefore, there is no impact to safety by not requiring these valves to be Operable in Modes 2, 3, and 4 when they are all closed. With the MSIVs closed, the MSSVs and ADVs are still available to provide over pressure protection for the secondary system and heat removal for the primary system.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.3
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs) ~~[and [MFIV] Bypass Valves]~~

<3.6.3> LCO 3.7.3 ~~[Two] MFIVs [and [MFIV] bypass valves]~~ Four economizer MFIVs and four downcomer MFIVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, ~~[and 3]~~ 3, and 4 (1) except when MFIV ~~[or [MFIV] bypass valve]~~ is closed ~~and [de-activated]~~ or isolated by a closed ~~manual valve~~ power operated valve. (2)

ACTIONS

<DOC A.3>

---NOTE---
Separate Condition entry is allowed for each ~~valve.~~ penetration flow path (3)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.3 ACT 1a> <3.6.3 ACT 1b> <DOC L.2> <DOC M.1> A. One or more MFIVs ~~[or [MFIV] bypass valves]~~ inoperable. (6)	A.1 Close or isolate inoperable MFIV ~~[or [MFIV] bypass valve]~~. (6)	~~[8 or]~~ 72 hours (6)
	AND	
	A.2 Verify inoperable MFIV ~~[or [MFIV] bypass valve]~~ is closed or isolated.	Once per 7 days
<DOC M.2> ~~B. [Two] valves in the same flow path inoperable.~~	~~B.1 Isolate affected flow path.~~	~~8 hours~~
	~~AND~~	
	~~B.2 Verify inoperable MFIV [or [MFIV] bypass valve] is closed or isolated.~~ (6)	Once per ~~7 days~~ (4)

(continued)

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.6.3ACT1d> <DOC L.1>	C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4 5 (1)	6 hours 36 (1) [12] hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
<4.6.3.5> <DOC M.3>	SR 3.7.3.1	Verify the closure time of each MFIV [and [MFIV] bypass valve] is ≤ [7] 7.6 seconds on an actual or simulated actuation signal. (6)	In accordance with the *Inservice Testing Program [or [18] months] (7)

CE STS
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BASES MARK UP

6

B 3.7 PLANT SYSTEMS

B 3.7.3 Main Feedwater Isolation Valves (MFIVs) ~~[and [MFIV] Bypass Valves]~~

BASES

BACKGROUND

5 The MFIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). Closure of the MFIVs ~~and the bypass valves~~ terminates flow to both steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream 5 of the MFIVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream of the MFIVs will be mitigated by their closure. Closure of the MFIVs ~~and bypass valves~~ effectively terminates the addition of feedwater to an affected steam generator, limiting the mass 5 and energy release for steam line breaks (SLBs) or FWLBs inside containment, and reducing the cooldown effects for SLBs.

The MFIVs ~~and bypass valves~~ isolate the nonsafety related portions from the safety related portion 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 6 (an additional) ~~a~~ pressure boundary for the controlled addition of auxiliary feedwater (AFW) to the intact loop. 5 6

(Two MFIVs are) ~~One MFIV is~~ located on each (economizer and downcomer) ~~AFW~~ line, outside, but close to, containment. The MFIVs are located upstream of the (train A and B) AFW 6 (downcomer) injection points so that AFW may be supplied to a steam generator following MFIV closure. The piping volume from the (downcomer MFIVs) ~~valve~~ to the steam generator 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. 6

5 The MFIVs ~~and its bypass valves~~ close on receipt of a main steam isolation signal (MSIS) generated by either low steam generator pressure(, high steam generator level,) or high containment pressure. The MSIS also actuates the main steam isolation valves (MSIVs) to close. The MFIVs ~~and bypass valves~~ may also be actuated manually. In addition to the MFIVs ~~and the bypass valves, a check valve inside containment is~~ (, check valves are) available to isolate the feedwater line penetrating containment, and to ensure that the consequences of events do not exceed the capacity of the containment heat removal systems. 6

(continued)

BASES

BACKGROUND (continued)

(u) A description of the MFIVs is found in the FSAR, (5) Section *10.4.7* (Ref. 1).

APPLICABLE SAFETY ANALYSES

The design basis of the MFIVs is established by the analysis for the large SLB. It is also influenced by the accident analysis for the large FWLB. Closure of the MFIVs (6) ~~and their bypass valves~~ may also be relied on to terminate a steam break for core response analysis and an excess feedwater flow event upon receipt of a MSIS on high steam generator level.

(6) Failure of an MFIV ~~and the bypass valve~~ to close following an SLB, FWLB, or excess feedwater flow event can result in additional mass and energy 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 satisfy Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii).

LCO

(6) This LCO ensures that the MFIVs ~~and the bypass valves~~ will isolate MFW flow to the steam generators. Following an FWLB or SLB, these valves will also isolate the nonsafety related portions from the safety related portions of the system. This LCO requires that *two* MFIVs ~~[and [MFIV] bypass valves]~~ in each feedwater line be OPERABLE. The MFIVs (6) ~~and the bypass valves~~ are considered OPERABLE when the isolation times are within limits, and are closed on an isolation actuation signal.

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 an MSIS 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.

APPLICABILITY

(6) The MFIVs ~~and the bypass valves~~ must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant

(continued)

BASES

APPLICABILITY (continued)

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.

(1) In MODES 1, 2, ~~and 3~~ 3, and 4, the MFIVs ~~[or [MFIV] bypass valves]~~ (6) are required to be OPERABLE, except when they are closed ~~and deactivated~~ or isolated by a closed ~~manual~~ power operated (2) valve, in order 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 deactivated~~ or isolated by a closed ~~manual~~ power operated (2) valve, they are already performing their safety function.

(1) In MODES ~~4~~, 5, and 6, steam generator energy is low. Therefore, the MFIVs ~~and the bypass valves~~ are ~~normally closed since MFW is~~ (6) not required.

ACTIONS

The ACTIONS table is modified by a Note indicating that separate Condition entry is allowed for each ~~valve~~ penetration flow path. (3)

A.1 and A.2

With one MFIV ~~or the bypass valve~~ (6) inoperable, action must be taken to close or isolate the inoperable valves within ~~[8 or~~ 72~~]~~ hours. When these valves are closed or isolated, they are performing their required safety function (e.g., to isolate the line).

~~For units with only one MFIV per feedwater line: The [8] hour Completion Time is reasonable to close the MFIV or its bypass valve, which includes performing a controlled unit shutdown to MODE 2.~~ (6)

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.

Insert 1 (6)

B.1 and B.2 (6)

If more than one MFIV ~~or [MFIV] bypass valve~~ in the same flow path cannot be restored to OPERABLE status, then there

(continued)

INSERT FOR ITS 3.7.3 BASES MARKUP
ACTION SECTION

INSERT 1

Inoperable MFIVs that are closed to comply with Required Action A.1 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 seven day completion time is reasonable, based on engineering judgement, MFIV status indications available in the control room, and other administrative controls, to ensure these valves are in the closed position.

BASES

ACTIONS

and B.2 (5)

B.1 (continued)

(8)

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 this flow path. Under these conditions, valves in each flow path must be restored to OPERABLE status, closed, or the 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 to close ~~the~~ MFIV ~~or its bypass valve~~ or otherwise isolate the an affected flow path. (6)

Inoperable MFIVs ~~and [MFIV] bypass valves~~ that cannot be restored to OPERABLE status within the Completion Time, but 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.

C.1 and C.2

(6)

If the MFIVs ~~and their Bypass Valves~~ cannot be restored to OPERABLE status, closed, or isolated in 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~~ 5 within ~~[12]~~ 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. (1)

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

actuation (6)

This SR ensures the ~~verification~~ actuation of each MFIV ~~[and [MFIV] bypass valve]~~ is ≤ ~~[7]~~ 7.6 seconds on an actual or simulated (6)

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1 (continued)

actuation signal. The MFIV closure 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 MFIVs should not be (6) full stroke tested at power ~~since even a part stroke exercise increases the risk of a valve closure with the unit generating power. As these valves are not tested at power, they are exempt from the ASME Code, Section XI (Ref. 2) requirements during operation in MODES 1 and 2.~~

The Frequency is in accordance with the [Inservice Testing Program or [18] months]. The [18] month Frequency for valve closure time is based on the refueling cycle. Operating experience has shown that these components usually pass the SR when performed at the [18] month specified Frequency. (7)

REFERENCES

1. UFSAR [FSAR], Section [10.4.7].
2. ~~ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.~~ (5) (6)

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.3

1. NUREG-1432 LCO 3.7.3 is applicable in Modes 1, 2, and 3 except when MFIV is closed or isolated by a closed manual valve. ITS 3.7.3 adds Mode 4 to the Applicability. During Mode 4, the downcomer MFIVs are open to provide a flow path for the non-essential auxiliary feedwater pump. These valves are thus required to be Operable in Mode 4. The shutdown Actions have been modified to be consistent with this change in Applicability. This change does not impact safety and is consistent with the Applicability of CTS Specification 3/4.6.3.

2. NUREG-1432 LCO 3.7.3 is applicable in Modes 1, 2, and 3 except when MFIV is closed or isolated by a closed manual valve. ITS LCO 3.7.3 allows the use of closed power operated valves instead of closed manual valves to isolate the MFIVs. There are no manual valves in the design of the Main Feedwater System. Allowing the use of power operated valves to isolate MFIVs is consistent with both CTS 3.6.3 and ITS LCO 3.6.3. This change is consistent with system design and does not impact safety.

3. NUREG-1432 LCO 3.7.3 Actions are modified by a note which states, "Separate Condition entry is allowed for each valve." ITS LCO 3.7.3 has modified this note to read, "Separate Condition entry is allowed for each penetration flow path." This is acceptable since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable MFIV penetration flow path. Complying with the Required Actions may allow continued operation, and subsequent inoperable MFIVs are governed by subsequent Condition entry and application of associated Required Actions. If separate condition entry was allowed for each valve, there would be no need for a condition with two valves inoperable. Allowing separate condition entry for each flow path is consistent with NUREG-1432 Specification 3.6.3.

4. NUREG-1432 LCO 3.7.3 Action B.2 requires verification of MFIV position with a Completion Time of 7 days. The examples of Completion Times contained in both NUREG-1432 and the ITS indicate that this performance is a one time performance. The Bases indicates that this SR should be performed on a periodic Bases. The ITS Completion Time has been modified to, "Once per 7 days," to reflect the requirement to perform this surveillance periodically. This change does not impact safety and is consistent with the formats specified in NUREG-1432.

5. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

6. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

7. NUREG SR 3.7.3.1 contains a Frequency in accordance with the Inservice Testing Program (IST) or 18 months. PVNGS will perform this SR in accordance with the IST, therefore, the reference to the 18 month testing is being deleted. The Bases has also been revised to be consistent with the Specification.

8. NUREG Bases 3.7.3 Action B.1 discusses the condition when 2 valves in parallel are in the same flow path. PVNGS design does not have 2 valves in parallel are in the same flow path. Therefore this statement is being deleted.

PVNGS CTS
SPECIFICATION 3.7.3
MARK UP

Specification 3.7.3
(3.7.3 / 3.6.3/3.6.6)

A.1

PLANT

3.7 ~~CONTAINMENT~~ SYSTEMS Main Feedwater

3.7.3 ~~3/4.6.3 CONTAINMENT~~ ISOLATION VALVES (MFIVs)

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.3 ~~4.6.3 Each containment isolation valve~~ shall be OPERABLE. ~~*~~ Four economizer MFIVs and four downcomer MFIVs A.2 A.3

APPLICABILITY: MODES 1, 2, 3, and 4. except when MFIV is closed or isolated by a closed power operated valve. L.1

MFIV ACTION: Separate Condition entry allowed for each penetration flow path

ACT A. 1. ~~With~~ one or more ~~of the isolation valve(s)~~ inoperable, ~~maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:~~

~~a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or~~ Close or isolate inoperable MFIV within 72 hours L.2

A.1 ~~b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position**, or~~ 72 and verify MFIV is closed or isolated once per 7 days M.1

A.4 ~~c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange**; or~~

ACT C ~~d.~~ Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

A.5 ~~e. The provisions of Specification 3.0.4 do not apply.~~

ITS 3.7.3

ITS 3.6.3

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each containment isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit.

4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.

b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.

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*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

**The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly.

ITS 3.6.3

ITS 3.7.3

ACT B Two valves in the same flow path inoperable, isolate affected flow path within 8 hours and verify inoperable MFIV is closed or isolated once per 7 days. M.2

Specification 3.7.3
(3.7.3/3.6.3/3.6.6)

4.6.3.3 The isolation time of each power operated or automatic valve used in CIAS, CPIAS, or CSAS shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

ITS 3.6.3

4.6.3.4 The containment isolation check valves shall be demonstrated OPERABLE pursuant to 10 CFR 50, Appendix J, with the exception of those check valves footnoted as "Not Type C Tested."

ITS 3.7.3

SR3.7.3.1

4.6.3.5 The containment isolation valves used as safety/relief, normally open-ESF actuated closed, or required open during accident conditions shall be demonstrated OPERABLE as required by Specification 4.0.5 and the Surveillance Requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured*** in their actuated position are considered operable pursuant to this specification. LA.2

ITS 3.7.3

ITS 3.6.3

4.6.3.6 The manual containment isolation valves (normally closed/post accident closed valves) shall be demonstrated OPERABLE pursuant to Surveillance Requirement 4.6.1.1.a of Specification 3.6.1.1.

ITS 3.7.3

SR3.7.3.1 Verify the closure time of each MFIV is ≤ 7.6 seconds on an actual or simulated actuation signal in accordance with the Inservice Testing Program. M.3

***Locked, sealed, or otherwise prevented from unintentional operation. LA.2

DISCUSSION OF CHANGES
SPECIFICATION 3.7.3

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.6.3 states, "Each containment isolation valve shall be OPERABLE." ITS LCO 3.7.3 states, "Four economizer MFIVs and four downcomer MFIVs shall be OPERABLE." The MFIVs perform a safety function in mitigating the consequences of steam line breaks and feedwater line breaks while also serving as containment isolation valves. The current OPERABILITY requirements for the MFIVs are specified in CTS 3.6.3. These valves were formerly listed in Table 3.6-1 Group F (normally open - ESF actuated closed). The OPERABILITY requirements for the MFIVs are being moved to a separate Specification which is specific to MFIVs. Moving OPERABILITY requirements from a generic Specification to a component specific Specification does not alter requirements or application of TSs. Any changes to the requirements are discussed separately. This change does not impact safety and is consistent with NUREG-1432.

A.3 Applicable CTS 3.6.3 Actions are not modified by Notes which allow separate condition entry. ITS LCO 3.7.3 Actions are modified by a note which states, "Separate Condition entry is allowed for each penetration flow path." The use of the word 'each' instead of 'all' in the CTS Actions implies that separate condition entry is allowed; e.g., "Isolate each affected penetration within 4 hours..." vice isolate all penetrations within 4 hours. Separate treatment of penetration flow paths is acceptable since penetration flow paths do not function as a system but function independently of each other. The Actions specified for each inoperable flow path are sufficient to provide the required level of safety. This change does not impact safety and is consistent with NUREG-1432.

A.4 CTS 3.6.3 Action 1.c states, "Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange." There are no blind flanges or manual valves which can be used to isolate these penetration flow paths; therefore, this Action is not included in the ITS. This change does not impact safety and is consistent with NUREG-1432.

A.5 CTS 3.6.3 Action 1.e states, "The provisions of Specification 3.0.4 do not apply." ITS 3.7.3 does not contain an exclusion from the requirements of Specification ITS LCO 3.0.4. Specification 3.0.4 restricts changes in Modes or conditions if the corresponding LCO is not met. Compliance with the Actions specified in ITS LCO 3.7.3 Action A allows continued operation for an unlimited amount of time; therefore, ITS LCO 3.0.4 allows changes in Modes and no additional exclusion is required. The Actions specified in ITS LCO 3.7.3 Action A are sufficient to assure safe operation of the plant. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.6.3 Action 1.b requires that each penetration with an inoperable MFIV be isolated by use of at least one deactivated automatic valve secured in the isolation position. ITS LCO 3.7.3 Action A requires isolation of the penetration but further requires that the isolation be verified once per seven days. Periodic verification of penetration flow path isolation is necessary to ensure that the assumptions in the safety analysis remain valid. The seven 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 and isolated. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.2 There is no Action specified in CTS 3.6.3 for two MFIVs in the same flow path inoperable. ITS LCO 3.7.3 Action B contains the requirements for two MFIVs in the same flow path inoperable. These requirements are to isolate the affected flow path within 8 hours and verify the inoperable MFIV is closed or isolated once per seven days. For ordinary containment penetrations, loss of OPERABILITY for two CIVs in the same flow path results in a loss of CONTAINMENT INTEGRITY and CTS 3.6.1.1 Actions would be entered. The Main Feedwater System is a closed system inside containment; therefore, loss of OPERABILITY of the isolation valves does not result in a loss of CONTAINMENT INTEGRITY since the piping still forms an intact boundary. CTS 3/4.6.1.1 does not apply unless there is a breach of the secondary system. Adding an Action for two inoperable MFIVs constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.3 CTS 4.6.3.5 requires testing of the MFIVs in accordance with CTS 4.0.5. ITS SR 3.7.3.1 requires verification that the closure time of each MFIV is ≤7.6 seconds on an actual or simulated actuation signal when tested in accordance with the Inservice Testing Program. CTS 4.0.5 contains requirements for inservice testing of pumps and valves in accordance with ASME Section XI. These requirements have been moved to ITS 5.5.8 which in turn contains the requirements for the Inservice Testing Program. See the DOC for ITS 5.5.8 for additional discussion. ASME Section XI does not require testing to verify design bases capabilities. ASME Section XI testing is designed to monitor component performance to allow detection of degraded performance so that corrective action can take place prior to failure of the component. Valve stroke times are compared to reference values which are based on performance of specific components when they are known to be operating acceptably. Specifying limiting stroke times in the TS is a more restrictive change although PVNGS current operating practice is to compare MFIV performance to these design bases conditions. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.6.3 Action 1.b states in part, "...by use of at least one deactivated automatic valve secured in the isolation position...." Details of the means of isolation are not included in ITS LCO 3.7.3 Action A. The manner of isolation is not required to determine the OPERABILITY of the system; therefore this information is being relocated to the Bases.

Any change to the requirements in the Bases will be governed by the PVNGS Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

LA.2 CTS SR 4.6.3.5 states in part, "...Valves secured in there actuated position are considered operable pursuant to this specification." Secured is further defined as, "locked, sealed, or otherwise prevented from unintentional operation." The MFIVs are isolation valves and are performing their safety function when in the closed position. This information does not need to be specified in a SR to determine the OPERABILITY of the MFIVs; therefore this information is being relocated to the Bases.

Any change to the requirements in the Bases will be governed by the PVNGS Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3/4.6.3 is Applicable in Modes 1, 2, 3, and 4. ITS 3.7.3 is Applicable in Modes 1, 2, 3, and 4 except when MFIV is closed or isolated by a closed power operated valve. Removal of the requirement to maintain the MFIVs Operable when closed is acceptable since the valves are performing their safety function when closed. This change does not impact safety and is consistent with NUREG-1432.

L.2 CTS 3.6.3 Action 1.a and Action 1.b allow 4 hours to restore OPERABILITY or isolate the penetration. ITS 3.7.3 Action A allows 72 hours to close the inoperable MSIV or isolate the penetration. The four hour Completion Time contained in CTS 3.6.3 is applied generically to all CIVs but is based on the requirements of penetrations designed in accordance with 10CFR50, Appendix A GDC 55 and GDC 56. The MFIV penetrations are required to meet the requirements of GDC 57. GDC 57 is for closed systems inside containment. These penetrations are required to have at least one CIV outside containment. The design of the MFIV penetrations exceed the requirements of GDC 57 in that they contain two CIVs per penetration. The 72 hour Completion Time takes into account the redundant capabilities of the second isolation valve in the penetration and the fact the piping system provides a barrier for the purpose of containment isolation. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.3

ADMINISTRATIVE CHANGES
(ITS 3.7.3 Discussion of Changes Labeled A.1, A.2, A.3, A.4 and A.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.3 Discussion of Changes Labeled (A.1, A.2, A.3, A.4 and A.5) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.3 Discussion of Changes Labeled M.1, M.2, and M.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.3 Discussion of Changes Labeled M.1, M.2 and M.3) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.3 Discussion of Changes Labeled LA.1, and LA.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.3 Discussion of Changes Labeled LA.1, and LA.2) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.3 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3/4.6.3 is Applicable in Modes 1, 2, 3, and 4. ITS 3.7.3 is Applicable in Modes 1, 2, 3, and 4 except when MFIV is closed or isolated by a closed power operated valve. Removal of the requirement to maintain the MFIVs Operable when closed is acceptable since the valves are performing their safety function when closed. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.1) (continued)

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

The proposed change modifies the Applicability of the MFIV Specification. The ITS does not require the MFIVs to be Operable if the MFIVs are closed. The MFIVs safety function is to isolate the secondary system in case of a main steam line break or main feedwater line break. With the MFIVs closed, they are already in the position required to perform their safety function; therefore, there is no impact to safety by not requiring these valves to be Operable when they are closed. With the MFIVs closed, the Auxiliary Feedwater (AFW) System is available to feed the steam generators when they are required for heat removal. In Mode 4, the Shutdown Cooling System may also be available to remove heat from the primary system. The non-essential AFW pump cannot feed the steam generators with the downcomer MFIVs closed.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.1) (continued)

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

The proposed change modifies the Applicability of the MSIV Specification. The ITS does not require the MSIVs to be Operable in Modes 2, 3, and 4 if all MSIVs are closed. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the MSIVs closed, they are already in the position required to perform their safety function. The closed valves could be considered Operable; therefore, there is no impact to safety by not requiring these valves to be Operable in Modes 2, 3, and 4 when they are all closed. With the MSIVs closed, the MSSVs and ADVs are still available to provide over pressure protection for the secondary system and heat removal for the primary system.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.1) (continued)

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

The proposed change modifies the Applicability of the MSIV Specification. The ITS does not require the MSIVs to be Operable in Modes 2, 3, and 4 if all MSIVs are closed. The MSIVs safety function is to isolate the secondary in case of a main steam line break, a steam generator tube rupture or main feedwater line break. With the MSIVs closed, they are already in the position required to perform their safety function. The closed valves could be considered Operable; therefore, there is no impact to safety by not requiring these valves to be Operable in Modes 2, 3, and 4 when they are all closed. With the MSIVs closed, the MSSVs and ADVs are still available to provide over pressure protection for the secondary system and heat removal for the primary system.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 3.6.3 Action 1.a and Action 1.b allow 4 hours to restore OPERABILITY or isolate the penetration. ITS 3.7.3 Action A allows 72 hours to close the inoperable MSIV or isolate the penetration. The four hour Completion Time contained in CTS 3.6.3 is applied generically to all CIVs but is based on the requirements of penetrations designed in accordance with 10CFR50, Appendix A GDC 55 and GDC 56. The MFIV penetrations are required to meet the requirements of GDC 57. GDC 57 is for closed systems inside containment. These penetrations are required to have at least one CIV outside containment. The design of the MFIV penetrations exceed the requirements of GDC 57 in that they contain two CIVs per penetration. The 72 hour Completion Time takes into account the redundant capabilities of the second isolation valve in the penetration and the fact the piping system provides a barrier for the purpose of containment isolation. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.2) (continued)

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

The proposed change increases the Completion Time allowed to isolate a MFIV penetration flow path with one inoperable MFIV from 4 hours in the CTS to 72 hours in the ITS. The MFIVs are governed by Specification 3/4.6.3 - Containment Isolation Valves - in the CTS. Since CTS 3/4.6.3 is applicable to all containment isolation valves, the Action for one inoperable CIV requires isolating the affected penetration within 4 hours. This Action does not take into account details of penetration design such as whether the penetration flow path is a closed system inside containment. The MFIV penetration flow path is a closed system inside containment. The piping that forms this closed system presents a barrier to the release of radioactivity that is equivalent to a closed valve. The completion time in the ITS reflects this design difference. 10CFR50 Appendix A only requires this type of penetration to have one isolation valve which is located outside containment. The MFIV lines each have two MFIVs per line which provides greater assurance that the feedwater lines can be isolated if needed.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.2) (continued)

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

The proposed change increases the Completion Time allowed to isolate a MFIV penetration flow path with one inoperable MFIV from 4 hours in the CTS to 72 hours in the ITS. The MFIVs are governed by Specification 3/4.6.3 - Containment Isolation Valves - in the CTS. Since CTS 3/4.6.3 is applicable to all containment isolation valves, the Action for one inoperable CIV requires isolating the affected penetration within 4 hours. This Action does not take into account details of penetration design such as whether the penetration flow path is a closed system inside containment. The MFIV penetration flow path is a closed system inside containment. The piping that forms this closed system presents a barrier to the release of radioactivity that is equivalent to a closed valve. The completion time in the ITS reflects this design difference. 10CFR50 Appendix A only requires this type of penetration to have one isolation valve which is located outside containment. The MFIV lines each have two MFIVs per line which provides greater assurance that the feedwater lines can be isolated if needed.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.3 Discussion of Changes Labeled L.2) (continued)

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

The proposed change increases the Completion Time allowed to isolate a MFIV penetration flow path with one inoperable MFIV from 4 hours in the CTS to 72 hours in the ITS. The MFIVs are governed by Specification 3/4.6.3 - Containment Isolation Valves - in the CTS. Since CTS 3/4.6.3 is applicable to all containment isolation valves, the Action for one inoperable CIV requires isolating the affected penetration within 4 hours. This Action does not take into account details of penetration design such as whether the penetration flow path is a closed system inside containment. The MFIV penetration flow path is a closed system inside containment. The piping that forms this closed system presents a barrier to the release of radioactivity that is equivalent to a closed valve. The completion time in the ITS reflects this design difference. 10CFR50 Appendix A only requires this type of penetration to have one isolation valve which is located outside containment. The MFIV lines each have two MFIVs per line which provides greater assurance that the feedwater lines can be isolated if needed.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.4
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

<3.7.1.6> LCO 3.7.4 ~~[Two]~~ One (1) ADV line~~s~~ per steam generator (1) shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC M.1> A. One required ADV line inoperable.	A.1 ---------NOTE--------- LCO 3.0.4 is not applicable. ---------------------- Restore ADV line to OPERABLE status.	~~7 days~~ 72 hours (1)
<3.7.1.6ACT> B. ~~[Two]~~ ~~or more~~ (1) ~~[required]~~ ADV lines inoperable.	B.1 Restore ~~[one]~~ ADV line to OPERABLE status.	24 hours
<3.7.1.6ACT> C. Required Action and associated Completion Time not met. <DOC M.2>	C.1 Be in MODE 3. AND C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours ~~[12]~~ 24 (5) hours

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.7.1.6.b>	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]~~ 2

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.4
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Dump Valves (ADVs)

BASES

BACKGROUND

Control

4

3

The ADVs provide a safety grade method for cooling the unit to Shutdown Cooling (SDC) System 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 Bypass System.

4

One

is

4

Per assumptions in the safety analyses,

2

Four ADV lines are provided. Each ADV line consists of one ADV and an associated block valve. Two ADV lines per steam generator are required to meet single failure assumptions following an event rendering one steam generator unavailable for Reactor Coolant System (RCS) heat removal.

The ADV block valves are not required to be closed in the event of a stuck open ADV.

4

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.

4

4

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 sufficient pressurized gas to operate the ADVs for the time required for RCS cooldown to the SDC System entry conditions.

require both DC sources and class AC instrument power to be considered OPERABLE

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

APPLICABLE SAFETY ANALYSES

The design basis of the ADVs is established by the capability to cool the unit to SDC System entry conditions. A cooldown rate of 75°F per hour is obtainable by one or

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

both steam generators. This design is adequate to cool the unit to SDC System entry conditions with only one ADV and one steam generator, utilizing the cooling water supply available in the CST.

UFSAR (3)

In the accident analysis presented in the ~~FSAR~~, the ADVs are assumed to be used by the operator to cool down the unit to SDC System entry conditions for accidents accompanied by a loss of offsite power. Prior to the operator action, the main steam safety valves (MSSVs) are used to maintain steam generator pressure and temperature at the MSSV setpoint. This is typically 30 minutes following the initiation of an event. (This may be less for a steam generator tube rupture (SGTR) event.) The limiting events are those that render one steam generator unavailable for RCS heat removal, with a coincident loss of offsite power; this results from a turbine trip ~~and the single failure of one ADV on the unaffected steam generator~~. Typical initiating events falling into this category are a main steam line break upstream of the main steam isolation valves, a feedwater line break, and an SGTR event (although the ADVs on the affected steam generator may still be available following a SGTR event).

(3)

(4)

The design must accommodate the single failure of one ADV to open on demand~~; thus, each steam generator must have at least two ADVs. The ADVs are equipped with block valves in the event an ADV spuriously opens, or fails to close during use.~~

(1)

(2)

The ADVs satisfy Criterion 3 of ~~the NRC Policy Statement~~. 10 CFR 50.36(c)(2)(ii)

LCO

One ~~[Two]~~ ADV line~~s~~ ~~are~~ is required to be OPERABLE on each steam generator to ~~ensure that at least one ADV is OPERABLE to~~ conduct a unit cooldown following an event in which one steam generator becomes unavailable~~, accompanied by a single active failure of one ADV line on the unaffected steam generator. The block valves must be OPERABLE to isolate a failed open ADV. 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.~~

(4)

(4)

Failure to meet the LCO can result in the inability to cool the unit to SDC System entry conditions following an event

(continued)

BASES

LCO (continued)

in which the condenser is unavailable for use with the Steam Bypass Control System. (4)

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

APPLICABILITY

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

In MODES 5 and 6, an SGTR is not a credible event.

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.

72 hours (1)

With one required ADV line inoperable, action must be taken to restore the OPERABLE status within 7 days. The 7 day 72 hour Completion Time takes into account the ~~redundant capability afforded by the remaining OPERABLE ADV lines, and~~ availability of (4) a nonsafety grade backup in the Steam Bypass Control System and MSSVs. (4)

B.1

(1) (1)

With two ~~or more~~ required ADV lines inoperable, (one in each steam generator) action must be taken to restore one of the ADV lines to OPERABLE status. As 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 Control System and MSSVs, and the low probability of an event occurring during this period that requires the ADV lines. (4)

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

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance upon the steam generator for heat removal, within [12] hours. 24 5 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 3.7.4.1

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened and throttled through their full range. This SR ensures 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 SR when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

1

~~[SR 3.7.4.2~~

~~The function of the ADV block valve is to isolate a failed open ADV. Cycling the block valve 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 SR when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.]~~

REFERENCES UFSAR 1. ~~FSAR~~ Section [10.3].

3

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.4

1. NUREG-1432 LCO 3.7.4 states, "[Two] ADV lines shall be OPERABLE." The brackets indicate that plant specific information is to be inserted. ITS LCO 3.7.4 states, "One ADV line per steam generator shall be OPERABLE. The Bases for NUREG-1432 LCO 3.7.4 clarifies that the statement, "Two ADV lines shall be OPERABLE" is intended to require two ADV lines per steam generator to be OPERABLE. PVNGS transient analyses and current licensing bases only require one ADV line per steam generator to be OPERABLE. ITS LCO 3.7.4 reflects this requirement. The completion time for Action A (one required ADV line inoperable) has also been changed to reflect the fact that only one ADV per steam generator is required OPERABLE. NUREG-1432 LCO 3.7.4 Action A allows a Completion Time of 7 days whereas ITS LCO 3.7.4 Action A allows a Completion Time of 72 hours. The change in Completion Times is necessary since there is no redundant ADV line available on the affected steam generator with one ADV inoperable. This change does not result in a reduction to the level of safety currently provided by Technical Specifications and is consistent with current licensing bases.

2. NUREG-1432 SR 3.7.4.2 requires the ADV block valves to be stroked through one full cycle once per 18 months. The basis for this SR is the need to isolate the ADV lines in the event of a stuck open ADV. PVNGS design now incorporates block valves, however, they are not required to be closed in the event of a stuck open ADV. The radiological release due to a Steam Generator Tube Rupture with a Loss of Offsite Power and a Fully Stuck Open ADV transient is mitigated by maintaining the SG tubes covered. The offsite dose due to complete blowdown of the affected steam generator has been analyzed and is within the 10CFR100 limits. This SR is not part of the current licensing bases.

3. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

4. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

5. NUREG-1432 LCO 3.7.4, Action C, specifies a bracketed completion time of 12 hours to be in Mode 4 without reliance on steam generator for heat removal when the required ADV Action and associated completion time are not met. ITS LCO 3.7.4, Action C, specifies a completion time of 24 hours. The 24 hour completion time to be in Mode 4 without reliance on the steam generator for heat removal is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

   The transition from Mode 3 to shutdown cooling entry conditions would require much more plant cooling than a transition from Mode 3 to Mode 4 entry conditions.

PVNGS CTS
SPECIFICATION 3.7.4
MARK UP

3.7 PLANT SYSTEMS ATMOSPHERIC

3.7.4 ~~ATMOSPHERE~~ DUMP VALVES (ADVs) A.1

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.4 ~~3.7.1.6~~ ~~The~~ One A.3 atmospheric dump valve~~s~~ line per steam generator A.3 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4*~~#~~. A.2

ACTION:

ACT A — With ~~less than~~ A.4 one required A.4 atmospheric dump valve line inoperable A.4 ~~per steam generator OPERABLE~~, restore the required atmospheric dump valve to OPERABLE status within 72 hours; or be

ACT C — in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN without reliance upon steam generator for heat removal within the following 18 hours M.2

SURVEILLANCE REQUIREMENTS

~~4.7.1.6 Each atmospheric dump valve shall be demonstrated OPERABLE:~~

a. At least once per 24 hours by verifying that the nitrogen accumulator tank is at a pressure ≥ 615 PSIG. LA.1

SR 3.7.4.1 ~~b.~~ Prior to startup following any refueling shutdown ~~or cold shutdown of 30 days or longer~~ L.2, verify that all valves will open and close fully.

NOTE: LCO 3.0.4 is not applicable L.1

ACT B With two required ADV lines inoperable, M.1 restore one ADV line to OPERABLE status within 24 hours

LCO 3.7.4 Applicability *When steam generators are being used for decay heat removal.

~~#See Special Test Exception 3.10.9.~~ A.2

DISCUSSION OF CHANGES
SPECIFICATION 3.7.4

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.7.1.6 Applicability references Special Test Exception CTS 3.10.9. This cross reference is only contained in the Unit 1 Technical Specification. CTS 3:10.9 is a special test exception for suspension of SHUTDOWN MARGIN requirements while testing CEDMs. Removal of this erroneous cross reference is an editorial change which has no impact on safety. This change is consistent with NUREG-1432.

A.3 CTS 3.7.1.6 LCO states, "The atmospheric dump valves shall be OPERABLE." ITS LCO 3.7.4 states, "One ADV line per steam generator shall be OPERABLE." Although PVNGS plant design incorporates two ADV lines per steam generator, the condition specified by the CTS Action makes it clear that only one of the two ADVs per steam generator are required to be Operable since there is no Action specified for only one ADV inoperable (less than two Operable). Restating the current requirement provides greater clarity and does not change the intent of the LCO that a minimum of one ADV per steam generator must be Operable. This change does not impact safety and is consistent with the format of NUREG-1432. The change from the NUREG requirement of two ADVs per steam generator required Operable to the CTS and ITS requirement of one ADV per steam generator required Operable is discussed as NUREG Exception 1.

A.4 CTS 3.7.1.6 Action states in part, "With less than one atmospheric dump valve per steam generator OPERABLE...." ITS LCO 3.7.4 Condition A states "One required ADV line inoperable." Although PVNGS plant design incorporates two ADVs per steam generator, CTS 3.7.1.6 does not provide an Action for one ADV per steam generator inoperable. Since there is no Action specified, operation is allowed with only one Operable ADV per steam generator required. The ITS LCO and Required Actions have been reworded for clarity but express the same requirements for OPERABILITY and one required ADV inoperable. The Required Action for two required ADVs inoperable (one required ADV per steam generator) are contained in ITS LCO 3.7.4 Action B and discussed in DOC M.1.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.7.1.6 allows 72 hours to restore OPERABILITY of one ADV when less than one ADV per steam generator is operable. This would include the situation when no ADVs are operable (all four are inoperable). ITS 3.7.4 Action B allows only 24 hours to restore one ADV to OPERABLE when the two required ADVs are inoperable (the required ADVs are one per steam generator). This is a reduction of time allowed to restore Operability of one ADV (from 72 hours to 24 hours) when no ADVs are operable (all four are inoperable), and is a more restrictive change to PVNGS current operating practices. The 24 hour completion time is reasonable based on the availability of the MSSVs, the SBCS and the low probability of an event occurring during this time that requires availability of an ADV. This change is consistent with NUREG-1432.

M.2 CTS 3.7.1.6 states in part, "...be in at least HOT STANDBY within the next 6 hours." ITS 3.7.4 Action C contains the additional requirement that the unit be placed in MODE 4 without reliance upon steam generators for heat removal within 24 hours of entering the Condition (i.e. the following 18 hours). This requirement is more restrictive than CTS 3.7.1.6 or PVNGS current operating practice of placing the unit in Mode 4 within 30 hours if both ADVs on both steam generators are inoperable. The addition of this requirement constitutes a more restrictive change to PVNGS current operating practices. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 4.7.1.6.a states, "At least once per 24 hours by verifying that the nitrogen accumulator tank is at a pressure ≥615 PSIG." This requirement is not required to determine the OPERABILITY of the ADVs and therefore is being relocated to the Technical Requirements Manual (TRM).

The nitrogen accumulators are required to provide backup service gas to the ADVs upon loss of the instrument air supply. The accumulators are required to be pressurized to a minimum of 615 psig to assure that a cooldown can be performed as assumed in the safety analysis. The accumulators have a pressure alarm set at 630 psig which provides immediate notification in the control room of loss of nitrogen pressure. The administrative controls of the TRM are sufficient to assure that the accumulator pressure receives adequate monitoring to assure OPERABILITY of the ADVs is maintained.

Any change to the requirements in the TRM will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the TRM is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 A Note is added to the Required Action for one ADV inoperable which provides an exclusion from the requirements of ITS LCO 3.0.4. ITS LCO 3.0.4 prohibits changing MODES or Conditions of the Applicability with the LCO not met. The addition of this Note allows MODE changes to take place with only one Operable ADV. This change is acceptable based on the fact that the ADVs require operator action for actuation and the availability of the other unaffected steam generator and the MSSVs and SBCS. This change is consistent with NUREG-1432.

L.2 CTS 4.7.1.6.b requires exercising the ADVs prior to startup following any refueling shutdown or Cold Shutdown of 30 days or longer. ITS SR 3.7.4.1 requires that this Surveillance be performed on an 18 month frequency. The 18 month frequency specified in the ITS indicates that this Surveillance should be performed on a refueling basis. The requirement to test these valves prior to startup after any Cold Shutdown of 30 days or longer is not required since there is no reason to believe the performance of these valves would degrade during shutdown conditions any faster than they would during power operation. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.4

ADMINISTRATIVE CHANGES
(ITS 3.7.4 Discussion of Changes Labeled A.1, A.2, A.3, and A.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.4 Discussion of Changes Labeled (A.1, A.2, A.3, and A.4) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled M.1 and M.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled M.1 and M.2) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.4 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.4 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 A Note is added to the Required Action for one ADV inoperable which provides an exclusion from the requirements of ITS LCO 3.0.4. ITS LCO 3.0.4 prohibits changing MODES or Conditions of the Applicability with the LCO not met. The addition of this Note allows MODE changes to take place with only one Operable ADV. This change is acceptable based on the fact that the ADVs require operator action for actuation and the availability of the other unaffected steam generator and the MSSVs and SBCS. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.4 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows an exclusion from the requirements of Specification LCO 3.0.4 with one required ADV inoperable. The ADVs provide a safety grade method of cooling the Primary system when the main condenser or the steam bypass control system are not available. The ADVs are normally closed and manual action is required to open these valves. The ADVs are not required to be opened until 30 minutes into the accident. Should the ADVs not open on demand, the MSSVs are available in Modes 1, 2, and 3 to protect the secondary system from overpressurization and for removal of energy from the primary system. In Mode 4, the energy contained in the steam generators is low resulting in a decreased potential for overpressurizing the secondary system. The Shutdown Cooling System may be used in Mode 4 to cool the primary system. Based on the availability of the other Operable ADV, other systems to perform the safety functions of the ADVs in the Applicable Modes, and the fact that there is no automatic actuation required, it is acceptable to allow an exclusion from the requirements of LCO 3.0.4 with one ADV inoperable.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.4 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows an exclusion from the requirements of Specification LCO 3.0.4 with one required ADV inoperable. The ADVs provide a safety grade method of cooling the Primary system when the main condenser or the steam bypass control system are not available. The ADVs are normally closed and manual action is required to open these valves. The ADVs are not required to be opened until 30 minutes into the accident. Should the ADVs not open on demand, the MSSVs are available in Modes 1, 2, and 3 to protect the secondary system from overpressurization and for removal of energy from the primary system. In Mode 4, the energy contained in the steam generators is low resulting in a decreased potential for overpressurizing the secondary system. The Shutdown Cooling System may be used in Mode 4 to cool the primary system. Based on the availability of the other Operable ADV, other systems to perform the safety functions of the ADVs in the Applicable Modes, and the fact that there is no automatic actuation required, it is acceptable to allow an exclusion from the requirements of LCO 3.0.4 with one ADV inoperable.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.4 Discussion of Changes Labeled L.1) (continued)

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

The proposed change allows an exclusion from the requirements of Specification LCO 3.0.4 with one required ADV inoperable. The ADVs provide a safety grade method of cooling the Primary system when the main condenser or the steam bypass control system are not available. The ADVs are normally closed and manual action is required to open these valves. The ADVs are not required to be opened until 30 minutes into the accident. Should the ADVs not open on demand, the MSSVs are available in Modes 1, 2, and 3 to protect the secondary system from overpressurization and for removal of energy from the primary system. In Mode 4, the energy contained in the steam generators is low resulting in a decreased potential for overpressurizing the secondary system. The Shutdown Cooling System may be used in Mode 4 to cool the primary system. Based on the availability of the other Operable ADV, other systems to perform the safety functions of the ADVs in the Applicable Modes, and the fact that there is no automatic actuation required, it is acceptable to allow an exclusion from the requirements of LCO 3.0.4 with one ADV inoperable.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 4.7.1.6.b requires exercising the ADVs prior to startup following any refueling shutdown or Cold Shutdown of 30 days or longer. ITS SR 3.7.4.1 requires that this Surveillance be performed on an 18 month frequency. The 18 month frequency specified in the ITS indicates that this Surveillance should be performed on a refueling basis. The requirement to test these valves prior to startup after any Cold Shutdown of 30 days or longer is not required since there is no reason to believe the performance of these valves would degrade during shutdown conditions any faster than they would during power operation. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled L.2) (continued)

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

The proposed change modifies the frequency for full stroke Surveillance testing of the ADVs. The CTS requires that these valves be full stroke tested prior to startup following each refueling outage or cold shutdown of 30 days or longer. The ITS requires that full stroke testing be performed every 18 months. The 18 month interval indicates that this Surveillance should be performed on a refueling basis. In addition to the testing required by this SR, the ADVs are tested in accordance with the Inservice Testing Program described in Specification 5.5.8. The current requirements of the PVNGS ASME Section XI program include either full or partial stroke testing once per quarter and stroke timing on a cold shutdown basis. The requirements for cold shutdown testing are controlled by the PVNGS Inservice Testing Program. The testing required by ITS SR 3.7.4.1 in conjunction with that currently required by the Inservice Testing Program provides adequate assurance that the ADVs are capable of performing as intended. Removing the requirement to stroke these valves following each cold shutdown of 30 days or longer does not significantly impact safety.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled L.2) (continued)

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

The proposed change modifies the frequency for full stroke Surveillance testing of the ADVs. The CTS requires that these valves be full stroke tested prior to startup following each refueling outage or cold shutdown of 30 days or longer. The ITS requires that full stroke testing be performed every 18 months. The 18 month interval indicates that this Surveillance should be performed on a refueling basis. In addition to the testing required by this SR, the ADVs are tested in accordance with the Inservice Testing Program described in Specification 5.5.8. The current requirements of the PVNGS ASME Section XI program include either full or partial stroke testing once per quarter and stroke timing on a cold shutdown basis. The requirements for cold shutdown testing are controlled by the PVNGS Inservice Testing Program. The testing required by ITS SR 3.7.4.1 in conjunction with that currently required by the Inservice Testing Program provides adequate assurance that the ADVs are capable of performing as intended. Removing the requirement to stroke these valves following each cold shutdown of 30 days or longer does not significantly impact safety.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.4 Discussion of Changes Labeled L.2) (continued)

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

The proposed change modifies the frequency for full stroke Surveillance testing of the ADVs. The CTS requires that these valves be full stroke tested prior to startup following each refueling outage or cold shutdown of 30 days or longer. The ITS requires that full stroke testing be performed every 18 months. The 18 month interval indicates that this Surveillance should be performed on a refueling basis. In addition to the testing required by this SR, the ADVs are tested in accordance with the Inservice Testing Program described in Specification 5.5.8. The current requirements of the PVNGS ASME Section XI program include either full or partial stroke testing once per quarter and stroke timing on a cold shutdown basis. The requirements for cold shutdown testing are controlled by the PVNGS Inservice Testing Program. The testing required by ITS SR 3.7.4.1 in conjunction with that currently required by the Inservice Testing Program provides adequate assurance that the ADVs are capable of performing as intended. Removing the requirement to stroke these valves following each cold shutdown of 30 days or longer does not significantly impact safety.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.5
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

<3.7.1.2> LCO 3.7.5 Three AFW trains shall be OPERABLE.

---NOTE---

<DOC L.1> Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC M.3> A. One steam supply to turbine driven AFW pump inoperable.	A.1 Restore steam supply to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
<3.7.1.2 Act a.> B. One AFW train inoperable for reasons other than Condition A in MODE 1, 2, or 3. <DOC M.3>	B.1 Restore AFW train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO

(continued)

<DOC>
<CTS>

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME
<3.7.1.2 Act a>	C. Required Action and associated Completion Time of Condition A [or B] not met.	C.1	Be in MODE 3.	6 hours
		AND		
		C.2	Be in MODE 4.	~~[18]~~ hours 12 2
<3.7.1.2 Act b> <DOC L.1>	OR [Two] AFW trains inoperable in MODE 1, 2, or 3.			
<3.7.1.2 Act c> <DOC L.2>	D. [Three] AFW trains inoperable in MODE 1, 2, or 3.	D.1	--------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. --------------------- Initiate action to restore one AFW train to OPERABLE status.	Immediately
<DOC L.1>	E. Required AFW train inoperable in MODE 4.	E.1	--------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. --------------------- Initiate action to restore one AFW train to OPERABLE status.	Immediately

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

		SURVEILLANCE	FREQUENCY
<4.7.1.2.a.1>	SR 3.7.5.1	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 pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
<4.7.1.2.b.1> <DOC M.2>	SR 3.7.5.2	-------------------NOTE------------------- Not required to be performed for the turbine driven AFW pump until ~~[24]~~ 72 hours after reaching ~~[800] psig in the steam generators.~~ 532°F in the RCS. --	②
<DOC M.1>		Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	[31] days on a STAGGERED TEST BASIS
<4.7.1.2.c.1> <DOC M.2> <4.7.1.2.e> <DOC L.4>	SR 3.7.5.3	-------------------NOTES------------------- 1. Not required to be performed for the turbine driven AFW pump until ~~[24]~~ 72 hours after reaching ~~[800] psig in the steam generators.~~ 532°F in the RCS 2. Not applicable in MODE 4 when steam generator is relied upon for heat removal. --	②
<DOC L.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.	[18] months

(continued)

<CTS>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
<4.7.1.2.c.2> <DOC M.2> <4.7.1.2.e> <DOC L.4> SR 3.7.5.4	-------------------NOTES------------------- 1. Not required to be performed for the turbine driven AFW pump until [24] 72 hours after reaching [800] psig in the steam generators 532°F in the RCS. 2. Not applicable in MODE 4 when steam generator is relied upon for heat removal. ---	2
<DOC L.4>	Verify each AFW pump starts automatically on an actual or simulated actuation signal when in MODE 1, 2, or 3.	[18] months
<4.7.1.2.d> SR 3.7.5.5	Verify the 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 or 6 for > 30 days

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.5
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.5 Auxiliary Feedwater (AFW) System

BASES

BACKGROUND

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, "Condensate Storage Tank (CST)") 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, "Main Steam Safety Valves (MSSVs)") or atmospheric dump valves (ADVs) (LCO 3.7.4, "Atmospheric Dump Valves (ADVs)"). If the main condenser is available, steam may be released via the steam bypass valves and recirculated to the CST. (1)

The discharge piping from the two essential AFW pumps is cross connected outside containment. The AFW lines then penetrate containment and connect to the downcomer piping. The non-essential AFW pump discharge piping splits with a line connecting with each downcomer line outside containment.

The AFW System consists of ~~two~~ one essential motor driven AFW pump~~s~~, one non-essential motor driven AFW pump, and one steam turbine driven pump configured into three trains. ~~Each motor driven~~ essential pump provides 100% of AFW flow capacity~~; the turbine driven pump provides 100% of the required capacity~~ to the steam generators as assumed in the accident analysis. ~~The~~ All three pumps are equipped with independent recirculation lines to prevent pump operation against a closed system. (2)

The non-essential pump is not capable of providing 100% capacity with the recirc line open.

~~Each~~ The essential motor driven AFW pump is powered from an independent Class 1E power supply, and ~~feeds one steam generator, although each pump~~ has the capability to be realigned from the control room to feed ~~the other~~ either steam generator. (2)

The non-essential motor driven AFW pump is powered from a Class 1E power supply and can be aligned to feed either steam generator. This pump is manually actuated.

One essential pump ~~at full flow is sufficient to~~ provides sufficient flow to remove decay heat and cool the unit to Shutdown Cooling (SDC) System entry conditions. (2)

The steam turbine driven AFW pump receives steam from either main steam header upstream of the main steam isolation valve (MSIV). Each of the steam feed lines ~~will supply~~ is capable of supplying 100% of the requirements of the turbine driven AFW pump. The turbine driven AFW pump ~~supplies a common header~~ is capable of feeding ~~both~~ either steam generator~~s~~, with DC powered control (2)

(continued)

BASES

BACKGROUND (continued)

valves actuated to the appropriate steam generator by the ~~Emergency~~ Auxiliary Feedwater Actuation ~~System (EFAS)~~ Signal (AFAS). 2

The non-essential AFW ~~System~~ train supplies feedwater to the steam generators during normal unit startup, shutdown, and hot standby conditions.

For the normal plant conditions stated above, the non-essential AFW train ~~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~~ no load conditions (≤ 1170 psia). Subsequently, the ~~AFW System~~ non-essential AFW train supplies sufficient water to cool the unit to SDC entry conditions. ~~and steam is released through the ADVs.~~ 2

The AFW System ~~actuates~~ AFAS automatically on 5 low steam generator level by the ~~EFAS~~ AFAS as described in LCO 3.3.~~2~~, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation." The ~~EFAS~~ AFAS logic is designed to feed either or both steam generators with low levels, but will isolate the AFW System from a steam generator having a significantly lower steam pressure than the other steam generator. The ~~EFAS~~ AFAS automatically actuates the AFW turbine driven pump and associated DC operated valves and controls when required, to ensure an adequate feedwater supply to the steam generators. DC operated valves are provided for each AFW line to control the AFW flow to each steam generator. 2 2

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

APPLICABLE SAFETY ANALYSES 2

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

The design basis of the essential AFW trains ~~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 MSSV set pressure plus 3%~~ 1270 psia at the entrance to the steam generators.

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

a. Feedwater Line Break (FWLB); and

b. ~~Loss of normal feedwater~~ Main Steam Line Break (MSLB). 2

C. Station Blackout

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

The AFW System design is such that it can perform its function following an FWLB between the MFW isolation valve and containment, combined with a loss of offsite power following turbine trip, and a single active failure of the steam turbine driven AFW pump. In such a case, the ~~EFAS~~ AFAS logic might not detect the affected steam generator if the backflow check valve to the affected MFW header worked properly. One motor driven AFW pump would deliver to the broken MFW header at the pump runout flow until the problem was detected, and flow was terminated by the operator. Sufficient flow would be delivered to the intact steam generator by the ~~redundant~~ AFW pump.

The non-essential

downcomer

2

2

, if started manually,

essential motor driven

The AFW System satisfies Criterion 3 of ~~the NRC Policy Statement~~. 10 CFR 50.36 (c)(2)(ii)

LCO

This LCO requires that {three} AFW trains be OPERABLE to ensure that the AFW System will perform the 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 two diverse trains, ensure availability of residual heat removal capability for all events accompanied by a loss of offsite power and a single failure. This is accomplished by powering ~~two pumps from independent emergency buses~~. The third AFW pump is powered by a diverse means, a steam driven turbine supplied with steam from a source not isolated by the closure of the MSIVs.

Two essential and one non-essential

the essential motor driven AFW pump from an emergency bus. The non-essential motor driven AFW pump can be manually loaded on its emergency bus.

The AFW System is considered to be OPERABLE when the components and flow paths required to provide 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 a separate~~ steam generator. The turbine driven AFW pump shall be OPERABLE with redundant steam supplies from each of the two main steam lines upstream of the MSIVs and capable of supplying AFW flow to either of the two steam generators. The piping, valves, instrumentation, and controls in the required flow paths shall also be OPERABLE.

capable of supplying AFW to either

2

Although the OPERABILITY of the non-essential motor driven AFW pump is important from a risk perspective, this pump is not credited in the PVNGS Accident Analyses.

(continued)

2

BASES

LCO (continued)

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

APPLICABILITY

1

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

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

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

ACTIONS

A.1

If one of the two steam supplies to the turbine driven AFW pumps is inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time is reasonable based on the following reasons:

a. The redundant OPERABLE steam supply to the turbine driven AFW pump;

b. The availability of redundant OPERABLE motor driven AFW pumps; and

c. The low probability of an event requiring the inoperable steam supply to the turbine driven AFW pump.

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.

(continued)

BASES

ACTIONS

A.1 (continued)

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

B.1

With one of the required AFW trains (pump or flow path) inoperable, 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 the redundant capabilities afforded by the AFW System, the time needed for repairs, and the low probability of a DBA event occurring during this period. Two AFW pumps and flow paths remain to supply feedwater to the steam generators. 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.

C.1 and C.2

When either Required Action A.1 or B.1 cannot be completed within the required Completion Time, [or if two AFW trains are inoperable in MODES 1, 2, and 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.

12

2

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

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.

In MODE 4, with {two AFW trains inoperable in MODES 1, 2, and 3}, operation is allowed to continue because only one motor driven AFW pump is required in accordance with the Note that modifies the LCO. Although it is not required, the unit may continue to cool down and start the SDC.

(either the essential or the non-essential pump)

2

D.1

Required Action D.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.

Completion Times are also suspended at the time the Condition is entered. The Completion Time is resumed with the time remaining when the Condition was entered upon restoration of one AFW train to OPERABLE status.

With all {three} AFW trains inoperable in MODES 1, 2, and 3, the unit is in a seriously degraded condition with no ~~safety~~ TS related means for conducting a cooldown, and only limited means for conducting a cooldown with nonsafety grade equipment. In such a condition, the unit should not be 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 to OPERABLE status. LCO 3.0.3 is not applicable, as it could force the unit into a less safe condition. 2

E.1

Required Action 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.

With one AFW train inoperable, action must be taken to immediately restore the inoperable train to OPERABLE status or to immediately verify, by administrative means, the OPERABILITY of a second train. LCO 3.0.3 is not applicable, as it could force the unit into a less safe condition.

(continued)

BASES

ACTIONS

E.1 (continued)

In MODE 4, either the reactor coolant pumps or the SDC loops can be used to provide forced circulation as discussed in LCO 3.4.6, "RCS Loops—MODE 4."

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the AFW water and steam supply flow paths provides assurance that the proper flow paths exist for AFW 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 manipulations; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position.

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

SR 3.7.5.2

the (1)

Verifying that each AFW pump's developed head at the flow test point is greater than or equal to ~~this~~ required developed head ensures that AFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of 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), at 3 month intervals satisfies this requirement. The ~~{~~31~~}~~ day Frequency on a STAGGERED

(2) may be

(2) can be

(1) trend

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.5.2 (continued)

TEST BASIS results in testing each pump once every 3 months, as required by Reference 2.

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 an insufficient steam pressure to perform the test.

Normal operating pressure in the steam generators is established when RCS temperature reaches 532°F. This corresponds to a Psat of 900 psia.

SR 3.7.5.3

This SR ensures that AFW can be delivered to the appropriate steam generator, in the event of any accident or transient that generates an ~~EFAS~~ AFAS (2) signal, 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. This SR is not required for the non-essential train since there are no automatic valves which receive an AFAS. 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. The 18 month Frequency is acceptable, based on the design reliability and operating experience of the equipment.

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions have been established. Normal operating pressure in the steam generators is established when RCS temperature reaches 532°F. This corresponds to a Psat of 900 psia. This deferral is required because there is an insufficient steam pressure to perform the test.

Also, 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 ensures that the Essential AFW pumps will start in the event of any accident or transient that generates an ~~EFAS~~ AFAS (2) signal by demonstrating that each AFW pump starts automatically on an actual or simulated actuation signal. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.5.4 (continued)

potential for an unplanned transient if the Surveillance were performed with the reactor at power. The 18 month Frequency is acceptable, based on the design reliability and operating experience of the equipment.

The Non-essential AFW pump does not automatically actuate and is not subject to this SR.

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 the SR is not required in MODE 4. [In MODE 4, the required pump is already operating and the autostart function is not required.] [In MODE 4, the heat removal requirements would be less providing more time for operator action to manually start the required AFW pump.]

Normal operating pressure in the steam generators is established when RCS temperature reaches 532°F. This corresponds to a Psat of 900 psia.

(2)

[Reviewer's Note: Some plants may not routinely use the AFW for heat removal in MODE 4. The second justification is provided for plants that use a startup feedwater pump rather than AFW for startup and shutdown.]

SR 3.7.5.5

from each essential AFW pump

This SR ensures that the AFW System is properly aligned by verifying the flow path to each steam generator prior to entering MODE 2 operation, after 30 days in MODE 5 or 6. OPERABILITY of essential 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 judgment, and other administrative controls to ensure that flow paths remain OPERABLE. To further ensure AFW System alignment, the OPERABILITY of the essential AFW flow paths is verified following extended outages to determine that no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generators is properly aligned by requiring a verification of minimum flow capacity of 750 650 gpm at 1270 psi psia at the entrance to the steam generators. (This SR is not required by those units that use AFW for normal startup and shutdown.) for the non-essential AFW pump since it is normally used for startup and shutdown.

(2)

(2)

(continued)

BASES (continued)

REFERENCES

UFSAR 1. FSAR, Section 10.4.9.

2 2. ASME, Boiler and Pressure Vessel Code, Section XI, Inservice Inspection, Article IWV-3400.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.5

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. The PVNGS current licensing basis does not contain parameters/values for bracketed information. The requirement to perform testing within 24 hours of reaching 800 psi in the steam generator is modified in the ITS to require testing within 72 hours of reaching 532°F in the RCS. This change is discussed as DOC M.2.

PVNGS CTS
SPECIFICATION 3.7.5
MARK UP

Specification 3.7.5

A.1

3.7 PLANT SYSTEMS (AFW)

3.7.5 AUXILIARY FEEDWATER SYSTEM

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.5 ~~3.7.1.2~~ ~~At least~~ three ~~independent steam generator~~ auxiliary feedwater ~~pumps~~ trains A.2 ~~and associated flow paths~~ shall be OPERABLE ~~with:~~

a. Two feedwater pumps, each capable of being powered from separate OPERABLE emergency busses, and

b. One feedwater pump capable of being powered from an OPERABLE steam supply system. LA.1

M.3 Add LCO 3.7.5 ACTION A. INSERT

NOTE: only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4. L.1 M.3

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

ACTION:

ACT B ~~a.~~ With one auxiliary feedwater ~~pump~~ train A.2 inoperable, for reasons other than steam supply in MODES 1, 2 or 3, restore the required auxiliary feedwater ~~pumps~~ to OPERABLE status within 72 hours or be in AND 10 days from failure to meet the LCO, M.3

ACT C at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

ACT C ~~b.~~ With two auxiliary feedwater ~~pumps~~ trains A.2 inoperable in MODES 1, 2, and 3 L.1 be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

L.2 Add ACTION D NOTE INSERT

ACT D ~~c.~~ With three auxiliary feedwater ~~pumps~~ trains A.2 inoperable in MODES 1, 2 or 3 L.1, immediately initiate ~~corrective~~ action to restore ~~at least~~ one auxiliary feedwater ~~pump~~ train A.2 to OPERABLE status ~~as soon as possible.~~

Add ACT E and NOTE INSERT L.1

SURVEILLANCE REQUIREMENTS

~~4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:~~ A.3

SR 3.7.5.1 ~~a.~~ At least once per 31 days:

1. Verify~~ing that~~ each valve (manual, power-operated, or automatic) in each water flow path and in both steam supply flow paths to the steam turbine driven pump ~~in the flow path~~ that is not locked, sealed, or otherwise secured in position, is in its correct position.

2. Verifying that all manual valves in the suction lines from the primary AFW supply tank (condensate storage tank CTE-T01) to each essential AFW pump, and the manual discharge line valve of each AFW pump are locked, sealed or otherwise secured in the open position. LA.2 A.4

SR 3.7.5.2 ~~b.~~ At least once per ~~92~~ 31 days on a STAGGERED TEST BASIS by:

~~1.~~ Testing the turbine-driven pump and both motor-driven pumps pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for the turbine-driven pump for entry into MODE 3. M.2

Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head. M.1

~~*Until~~ When the steam generators are ~~no longer required~~ relied upon for heat removal.

M.2 NOTE: Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 532°F in the RCS

Specification 3.7.5

SURVEILLANCE REQUIREMENTS

(A.5) (L.3)

~~c.~~ At least once per 18 months ~~during shutdown by:~~

SR 3.7.5.3 ~~1.~~ Verify~~ing that~~ each AFW automatic valve that is not locked, sealed or otherwise secured in position, ~~in the flow path~~ actuates to its correct position upon receipt of an actual or simulated (L.5) ~~auxiliary feedwater~~ actuation ~~test~~ signal.

SR 3.7.5.4 ~~2.~~ Verify~~ing that~~ each AFW pump ~~that~~ starts automatically upon receipt of an actual or simulated (L.5) ~~auxiliary feedwater actuation test signal will start automatically upon receipt of an auxiliary feedwater~~ actuation ~~test~~ signal. (L.4) When in MODE 1, 2 or 3

SR 3.7.5.5 ~~d.~~ ~~Prior to startup following any refueling shutdown or cold shutdown of 30 days or longer,~~ (M.4) ~~by verifying on a STAGGERED TEST BASIS (by means of a flow test) that the normal flow path from the condensate storage tank to each of the steam generators through one of the essential auxiliary feedwater pumps delivers at least 650 gpm at 1270 psia or equivalent at the entrance of the steam generator.~~ (LA.3)

~~e.~~ ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or MODE 4 for the turbine-driven pump.~~ (M.2)

(M.4) Verify the proper alignment of the required AFW flow paths

(M.2) NOTES: 1) Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 532°F in the RCS.

(L.4) 2) Not applicable in MODE 4 when steam generator is relied upon for heat removal.

INSERT FOR CTS 3.7.1.2 MARKUP
ACTION SECTION

LCO 3.7.5 Action A

With one steam supply to the turbine driven AFW pump inoperable, restore the steam supply to OPERABLE status within 7 days and within 10 days from discovery of failure to meet the LCO if a combination of conditions exists.

LCO 3.7.5 Action D

---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.

LCO 3.7.5 Action 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.

With the required AFW train inoperable in MODE 4, immediately initiate action to restore one AFW train to OPERABLE status.

DISCUSSION OF CHANGES
SPECIFICATION 3.7.5

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.7.1.2 states in part, "At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE..." ITS LCO 3.7.5 states, "Three AFW trains shall be OPERABLE." In addition, CTS Action statements a, b, and c have also been changed from pumps to trains as noted in the CTS markup. Changing the wording "pumps and associated flowpaths" to "trains" does not alter the meaning of the Specification and therefore does not impact safety. An AFW pump and its associated flow path constitutes a train. This change is consistent with NUREG-1432.

A.3 CTS 4.7.1.2.a.1 states in part, "Verifying that each valve (manual, power-operated, or automatic) in the flow path..." ITS SR 3.7.5.1 states in part, "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..." Adding clarification that this SR applies to valves in the water flow path and the steam flow path does not alter the intent of the Specification and is consistent with PVNGS current operating practice. This change does not impact safety and is consistent with NUREG-1432.

A.4 CTS 4.7.1.2.b requires functional testing of the AFW pumps at least once per 92 days on a Staggered Test Basis. ITS SR 3.7.5.2 requires this testing take place at a Frequency of 31 days on a Staggered Test Basis. CTS 1.33 defines Staggered Test Basis as follows:

1.33 A STAGGERED TEST BASIS shall consist of:

a. A test schedule for n systems, subsystems, trains, or other designated components obtained by dividing the specified test interval into n equal subintervals, and

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

ITS 1.1 defines Staggered Test Basis as follows:

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

The change in Surveillance Frequency from CTS once per 92 days on a Staggered Test Basis to ITS once per 31 days on a Staggered Test Basis is considered administrative since the intent is to test all three AFW trains at approximately equal intervals once every three months in accordance with ASME Section XI. See Discussion of Changes for Staggered Test Basis contained in Chapter 1 for discussion of differences between CTS and ITS definition. This change does not impact safety and is consistent with NUREG-1432.

A.5 CTS 4.7.1.2.c specifies a Frequency of, "At least once per 18 months, during shutdown," for testing system actuation with test signals. ITS SR 3.7.5.3 and SR 3.7.5.4 specify an 18 month interval for these Surveillances but do not specify that testing is to be performed during shutdown. The 18 month interval specified in the ITS indicates that this testing should be limited to periods when the plant is shutdown. The intent of both the CTS and the ITS Frequencies are the same. The plant conditions recommended for this Surveillance are documented in the ITS Bases. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.7.1.2.b.1 requires testing the turbine-driven pump and both motor-driven pumps pursuant to Specification 4.0.5 (ASME Section XI ISI and IST). ITS SR 3.7.5.2 requires verification that the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head. Testing pump performance is required by ASME Section XI. This testing entails, in part, either measuring the flow rate at a referenced value of pump dp or measuring pump dp at a reference flow rate. ITS SR 3.7.5.2 is more restrictive than CTS 4.7.1.2.b.1 in that it requires measurement of pump dp at a reference flow rate. Any other testing required by ASME Section XI is performed as part of the Inservice Testing Program, ITS 5.5.8. This change is consistent with NUREG-1432.

M.2 CTS 4.7.1.2.b.1 and CTS 4.7.1.2.e contain exclusions from the requirements of CTS 4.0.4 for entry into Mode 3 with the SRs not met for the turbine driven AFW pump. ITS SR 3.7.5.2, SR 3.7.5.3 and SR 3.7.5.4 are modified by Notes which state that testing of the turbine driven AFW pump is not required to be performed until 72 hours after reaching 532°F in the RCS. The exclusion from CTS 4.0.4 contained in CTS 4.7.1.2.b.1 and CTS 4.7.1.2.e allows entry into Mode 3 in order to establish the conditions necessary to perform functional testing of the turbine driven AFW pump and valves. There is no time limit for testing specified in the CTS; however, PVNGS position has been that testing be performed in a reasonable time frame. The ITS requirement to perform this testing within 72 hours of reaching test conditions is more restrictive. The 72 hours allowed for performance of the Surveillance is consistent with the allowed outage time for one train of Auxiliary Feedwater inoperable. A RCS temperature of 532°F establishes normal operating pressure in the steam generators as defined in the Bases. This change is consistent with NUREG-1432.

M.3 CTS 3.7.1.2 states at least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with one feedwater pump capable of being powered from an OPERABLE steam supply system. ITS LCO 3.7.5 Action A requires that with one steam supply to the turbine driven auxiliary feedwater pump inoperable, restoration of the steam supply system to OPERABLE status must be complete within 7 days and 10 days from discovery of failure to meet the LCO. The CTS LCO allows one steam supply system to be inoperable without affecting the OPERABLE status of the AFW System. Although CTS 3.7.1.2 only requires OPERABILITY of one steam supply system, current PVNGS operating practice is to consider the turbine driven auxiliary feedwater pump inoperable if one of the steam supply systems is inoperable. Addition of this Action to LCO 3.7.5 will increase the availability of the turbine driven pump since both steam supply systems are now required to be OPERABLE.

CTS 3.7.1.2 Action a states in part, "With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pump to OPERABLE status within 72 hours..." ITS LCO 3.7.5 Action A makes it necessary to add the clarifying statement, "...for reasons other than Condition A in Modes 1, 2, or 3," to ITS LCO 3.7.5 Action B (one AFW train inoperable). Similarly, The Completion Time for ITS LCO 3.7.5 Action B also contains the requirement that OPERABILITY be restore within 10 days of discovery of failure to meet the LCO to establish a limit on the maximum time allowed for a combination of Conditions A and B to cause inoperability during any continuous failure to meet ITS LCO 3.7.5. These changes are consistent with NUREG-1432.

M.4 CTS 4.7.1.2.d requires performing verification of the normal flow path by means of a flow test prior to startup following any refueling shutdown or cold shutdown of 30 days or longer on a Staggered Test Basis. ITS SR 3.7.5.5 requires that this flow test be performed prior to entering Mode 2 whenever the unit has been in Mode 5 or 6 for more than 30 days. Removing the requirement to perform this test on a Staggered Test Basis is more restrictive since all required flowpaths must be tested every cold shutdown of greater than 30 days. CTS 4.7.1.2.d would require each flowpath to be tested only once every third cold shutdown of 30 days or longer. Since this is a conditional ST, the definition of Staggered Test Basis contained in the CTS and ITS cannot be applied.

The difference between the CTS requirement of cold shutdown of 30 days or longer and the ITS requirement of greater than 30 days is considered administrative. Deletion of the requirement to test following any refueling shutdown is also considered administrative since past performance has shown that refueling outages last longer than the 30 days specified. These changes are considered to be covered by DOC A.1.

The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. These changes are consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.7.1.2 states in part, "At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two feedwater pumps, each capable of being powered from separate OPERABLE emergency busses, and

b. One feedwater pump capable of being powered from an OPERABLE steam supply system."

ITS 1.1 defines OPERABILITY in part as, "...capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency power, cooling and seal water, lubrication, and other auxiliary equipment that are required ...are also capable of performing their related support function(s)." Due to this change in the definition of OPERABILITY, CTS 3.7.1.2.a is no longer required since the only additional information provided is that the motor driven pumps are required to be capable of being powered from an emergency bus. The change in definition of OPERABILITY is further discussed in Chapter 1.0 Discussion of Changes. The OPERABILITY of the turbine driven AFW pump is redefined in the ITS LCO 3.7.5 Action A which requires both steam supplies to be OPERABLE as opposed to CTS 3.7.1.2.b which only requires that the turbine driven pump be capable of being powered from one OPERABLE steam supply system. CTS 3.7.1.2.b is no longer required since the OPERABILITY of the steam supply system is defined by ITS LCO 3.7.5 Action A. This change is discussed in DOC M.3.

The information contained in a and b above is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the Bases Section.

Any change to the requirements in the Bases will be governed by the provisions of 10 CFR 50.59 and the TS Bases Control Program. This provides an equivalent level of regulatory control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to a Licensee Controlled Document is acceptable and is consistent with NUREG-1432.

LA.2 CTS 4.7.1.2.a.2 requires verifying that all manual valves in the suction lines from the condensate storage tank to each AFW pump and the manual discharge line valve of each AFW pump are locked, sealed, or secured in the open position. There is no requirement in ITS 3.7.5 to verify position of locked, sealed, or secured manual valves. These details are currently controlled administratively by the Locked Valve, Breaker, and Component Control Program. This Program requires that the position of these valves be verified prior to locking, sealing, or securing in position. Once these valves have been correctly positioned and secured from unintentional operation, there is very little likelihood of their becoming mispositioned. Surveillance of these components is therefore not required.

Once the valves are secured in their correct positions, this information is not required to determine the OPERABILITY of the system, component or structure and therefore is being relocated to the Technical Requirements Manual (TRM).

Any change to the TRM must be approved in accordance with the 10 CFR 50.59 Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to plant procedures is acceptable and is consistent with NUREG-1432.

LA.3 CTS 4.7.1.2.d requires verification that the normal flowpath from the condensate storage tank to each steam generator through one AFW pump is capable of delivering at least 650 gpm at 1270 psia. ITS SR 3.7.5.5 requires verifying flow from the condensate storage tank to each steam generator for the purpose of verifying proper flow path alignment. The details of the test itself have been relocated to the Bases. The OPERABILITY of the AFW pumps and alignment/actuation of valves in the flowpath are verified separately. This Surveillance provides added assurance that no valves have been mispositioned during the cold shutdown. This information is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the Bases section.

Any change to the requirements in the Bases will be governed by the provisions of 10 CFR 50.59 and the Bases Control Program. This provides an equivalent level of regulatory control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.7.1.2 states in part, "At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two feedwater pumps, each capable of being powered from separate OPERABLE emergency busses, and

b. One feedwater pump capable of being powered from an OPERABLE steam supply system."

Applicability of CTS 3.7.1.2 is Modes 1, 2, and 3, and Mode 4 until the steam generators are no longer required for heat removal.

ITS LCO 3.7.5 requires three AFW trains to be OPERABLE in Modes 1, 2, and 3, and Mode 4 when steam generator is relied upon for heat removal. This LCO is modified by a Note which reads, "Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in Mode 4." Requiring only one motor driven AFW pump to be OPERABLE in Mode 4 instead of all three AFW pumps as required by CTS 3.7.1.2 is acceptable because of the reduced heat removal requirements, the short period of time in Mode 4 during which AFW is required, and the insufficient steam supply available in Mode 4 to power the turbine driven AFW pump.

CTS 3.7.1.2 Action b and CTS 3.7.1.2 Action c provide requirements for multiple AFW pumps inoperable. The corresponding Actions contained in ITS LCO 3.7.5 Action C and ITS LCO 3.7.5 Action D are modified by a statement which makes them applicable only in Modes 1, 2, and 3. This change is required for consistency with the Note which requires only one motor driven AFW pump to be OPERABLE in Mode 4.

Requiring only one AFW pump OPERABLE in Mode 4 also makes addition of ITS LCO 3.7.5 Action E necessary. This Action provides the requirements should the required AFW train be inoperable in Mode 4. The Required Action is to immediately restore the inoperable AFW train to OPERABLE status or to immediately verify, by administrative means, that the second motor driven train is OPERABLE. ITS LCO 3.7.5 Action E is modified by a Note which states, "LCO 3.0.3 and all other LCO Required Actions requiring Mode changes are suspended until one AFW train is restored to OPERABLE status." Addition of this Note is considered a less restrictive change since any shutdowns are suspended; however, the result of this change is an increase in the level of safety. With the required AFW train inoperable, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown. In such a condition, the unit should not be perturbed by any action, including a power change, that might result in a trip. LCO ITS LCO 3.0.3 is not applicable as it could force the unit into a less safe condition. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

L.2 CTS 3.7.1.2 Action c provides Required Actions with three AFW pumps inoperable. ITS LCO 3.7.5 Action D provides these same Conditions and Required Actions modified for the ITS Applicability, but is further modified by addition of a Note which states, "LCO 3.0.3 and all other LCO Required Actions requiring Mode changes are suspended until one AFW train is restored to OPERABLE status." Addition of this Note is considered a less restrictive change since any shutdowns are suspended; however, the result of this change is an increase in the level of safety. With three AFW trains inoperable in Modes 1, 2, and 3, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown. In such a condition, the unit should not be perturbed by any action, including a power change, that might result in a trip. Entry into ITS LCO 3.0.3 for any reason is suspended as it could force the unit into a less safe condition. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

L.3 CTS 4.7.1.2.c.1 states in part, "Verifying that each automatic valve in the flow path actuates to its correct position..." ITS SR 3.7.5.3 states in part, "Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position..." The ITS is less restrictive since it does not require verification of the correct actuation for valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively and are required to be verified in the correct position prior to locking, sealing, or securing, and on a periodic basis thereafter. Reference DOC LA.2 for additional discussion. PVNGS current operating practice is to consider valves OPERABLE if they are secured in their actuated position. This practice is supported by CTS 4.6.3.5 which states in part, "Valves secured*** in their actuated position are considered operable pursuant to this Specification." The asterisks refer to the clarifying statement, "Locked, sealed, or otherwise prevented from unintentional operation." Although this change has the potential for reducing the amount of Surveillance Testing required, there is no impact to safety since the correct alignment of the actuated system is still assured by testing of valves which are not locked, sealed, or secured, and administratively controlling valves which are locked, sealed, or secured. This change is consistent with NUREG-1432.

L.4 CTS 4.7.1.2.c requires testing of AFW pump and valve automatic actuation once per 18 months. This Surveillance is required to be current during Modes 1, 2, 3, and 4. ITS SR 3.7.5.3 and ITS SR 3.7.5.4 also require testing of AFW pump and valve automatic actuation but are modified by a Note which states, "Not applicable in MODE 4 when steam generator is relied upon for heat removal." This change is acceptable since the required pump is already running in Mode 4 and the autostart function is not required. This change does not impact safety. This change is consistent with NUREG-1432.

L.5 CTS 4.7.1.2.c.1 and CTS 4.7.1.2.c.2 require components to be surveilled to assure their automatic performance is acceptable when subjected to an actuation test signal. ITS SR 3.7.5.3 and SR 3.7.5.4 allow the use of an actual or simulated actuation signal. This change allows actuation of these components for reasons other than Surveillances to be used to fulfill the SRs. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change has no impact on safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.5

ADMINISTRATIVE CHANGES
(ITS 3.7.5 Discussion of Changes Labeled A.1, A.2, A.3, A.4 and A.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.5 Discussion of Changes Labeled (A.1, A.2, A.3, A.4 and A.5) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled M.1, M.2, M.3 and M.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled M.1, M.2, M.3 and M.4) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.5 Discussion of Changes Labeled LA.1, LA.2 and LA.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.5 Discussion of Changes Labeled LA.1, LA.2 and LA.3) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.7.1.2 states in part, "At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two feedwater pumps, each capable of being powered from separate OPERABLE emergency busses, and
b. One feedwater pump capable of being powered from an OPERABLE steam supply system."

Applicability of CTS 3.7.1.2 is Modes 1, 2, and 3, and Mode 4 until the steam generators are no longer required for heat removal.

ITS LCO 3.7.5 requires three AFW trains to be OPERABLE in Modes 1, 2, and 3, and Mode 4 when steam generator is relied upon for heat removal. This LCO is modified by a Note which reads, "Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in Mode 4." Requiring only one motor driven AFW pump to be OPERABLE in Mode 4 instead of all three AFW pumps as required by CTS 3.7.1.2 is acceptable because of the reduced heat removal requirements, the short period of time in Mode 4 during which AFW is required, and the insufficient steam supply available in Mode 4 to power the turbine driven AFW pump.

CTS 3.7.1.2 Action b and CTS 3.7.1.2 Action c provide requirements for multiple AFW pumps inoperable. The corresponding Actions contained in ITS LCO 3.7.5 Action C and ITS LCO 3.7.5 Action D are modified by a statement which makes them applicable only in Modes 1, 2, and 3. This change is required for consistency with the Note which requires only one motor driven AFW pump to be OPERABLE in Mode 4.

Requiring only one AFW pump OPERABLE in Mode 4 also makes addition of ITS LCO 3.7.5 Action E necessary. This Action provides the requirements should the required AFW train be inoperable in Mode 4. The Required Action is to immediately restore the inoperable AFW train to OPERABLE status or to immediately verify, by administrative means, that the second motor driven train is OPERABLE. ITS LCO 3.7.5 Action E is modified by a Note which states, "LCO 3.0.3 and all other LCO Required Actions requiring Mode changes are suspended until one AFW train is restored to OPERABLE status." Addition of this Note is considered a less restrictive change since any shutdowns are suspended; however, the result of this change is an increase in the level of safety. With the required AFW train inoperable, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.1) (continued)

L.1 (continued)

In such a condition, the unit should not be perturbed by any action, including a power change, that might result in a trip. LCO ITS LCO 3.0.3 is not applicable as it could force the unit into a less safe condition. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed change modifies the LCO for Mode 4 operation. The ITS LCO is modified by a Note which states., "Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4." There is no separate provision in the CTS for Mode 4 operation. In Mode 4, the energy contained in the steam generators is low, thus there may be insufficient steam available to drive the turbine driven pump. In Mode 4 with one or more steam generators being used for heat removal, one of the motor driven AFW pumps will already be operating. Since the required pump is already operating, failure of a pump to start does not need to be considered and one AFW pump is sufficient to bring the plant to Cold Shutdown. In Mode 4, the SDC System may also be available as a means of cooling the primary system. Requiring only one motor driven AFW pump to be Operable in Mode 4 does not significantly impact safety.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.5 Discussion of Changes Labeled L.1) (continued)

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the LCO for Mode 4 operation. The ITS LCO is modified by a Note which states, "Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4." There is no separate provision in the CTS for Mode 4 operation. In Mode 4, the energy contained in the steam generators is low, thus there may be insufficient steam available to drive the turbine driven pump. In Mode 4 with one or more steam generators being used for heat removal, one of the motor driven AFW pumps will already be operating. Since the required pump is already operating, failure of a pump to start does not need to be considered and one AFW pump is sufficient to bring the plant to Cold Shutdown. In Mode 4, the SDC System may also be available as a means of cooling the primary system. Requiring only one motor driven AFW pump to be Operable in Mode 4 does not significantly impact safety.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.5 Discussion of Changes Labeled L.1) (continued)

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

The proposed change modifies the LCO for Mode 4 operation. The ITS LCO is modified by a Note which states, "Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4." There is no separate provision in the CTS for Mode 4 operation. In Mode 4, the energy contained in the steam generators is low, thus there may be insufficient steam available to drive the turbine driven pump. In Mode 4 with one or more steam generators being used for heat removal, one of the motor driven AFW pumps will already be operating. Since the required pump is already operating, failure of a pump to start does not need to be considered and one AFW pump is sufficient to bring the plant to Cold Shutdown. In Mode 4, the SDC System may also be available as a means of cooling the primary system. Requiring only one motor driven AFW pump to be Operable in Mode 4 does not significantly impact safety.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 3.7.1.2 Action c provides Required Actions with three AFW pumps inoperable. ITS LCO 3.7.5 Action D provides these same Conditions and Required Actions modified for the ITS Applicability, but is further modified by addition of a Note which states, "LCO 3.0.3 and all other LCO Required Actions requiring Mode changes are suspended until one AFW train is restored to OPERABLE status." Addition of this Note is considered a less restrictive change since any shutdowns are suspended; however, the result of this change is an increase in the level of safety. With three AFW trains inoperable in Modes 1, 2, and 3, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown. In such a condition, the unit should not be perturbed by any action, including a power change , that might result in a trip. LCO ITS LCO 3.0.3 is not applicable as it could force the unit into a less safe condition. There is no impact to safety due to this change. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.2) (continued)

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

The proposed change allows suspending LCO 3.0.3 and all other Required Actions requiring Mode changes while no AFW pumps are Operable. The AFW system is required to mitigate the effects of events which result in a loss of main feedwater. In Modes 1, 2, and 3 with no AFW pumps Operable, there is no safety grade system available to assure the plant can be brought to shutdown conditions in a controlled manner. In this condition, an evaluation must be made and the appropriate action taken to place the unit in the safest condition possible until at least one AFW pump is restored to Operable status. During this time, it may be appropriate to remain at normal operating temperature and pressure to maintain the availability of the main feedwater pumps or if conditions permit, to continue cooldown such that the unit can be placed on shutdown cooling thus exiting the Applicability. Although the requirements of LCO 3.0.3 and all other Required Actions requiring Mode changes are suspended, the level of safety is increased because perturbations which could result in a plant trip will be avoided.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

[illegible]

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.2) (continued)

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

The proposed change allows suspending LCO 3.0.3 and all other Required Actions requiring Mode changes while no AFW pumps are Operable. The AFW system is required to mitigate the effects of events which result in a loss of main feedwater. In Modes 1, 2, and 3 with no AFW pumps Operable, there is no safety grade system available to assure the plant can be brought to shutdown conditions in a controlled manner. In this condition, an evaluation must be made and the appropriate action taken to place the unit in the safest condition possible until at least one AFW pump is restored to Operable status. During this time, it may be appropriate to remain at normal operating temperature and pressure to maintain the availability of the main feedwater pumps or if conditions permit, to continue cooldown such that the unit can be placed on shutdown cooling thus exiting the Applicability. Although the requirements of LCO 3.0.3 and all other Required Actions requiring Mode changes are suspended, the level of safety is increased because perturbations which could result in a plant trip will be avoided.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.2) (continued)

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

The proposed change allows suspending LCO 3.0.3 and all other Required Actions requiring Mode changes while no AFW pumps are Operable. The AFW system is required to mitigate the effects of events which result in a loss of main feedwater. In Modes 1, 2, and 3 with no AFW pumps Operable, there is no safety grade system available to assure the plant can be brought to shutdown conditions in a controlled manner. In this condition, an evaluation must be made and the appropriate action taken to place the unit in the safest condition possible until at least one AFW pump is restored to Operable status. During this time, it may be appropriate to remain at normal operating temperature and pressure to maintain the availability of the main feedwater pumps or if conditions permit, to continue cooldown such that the unit can be placed on shutdown cooling thus exiting the Applicability. Although the requirements of LCO 3.0.3 and all other Required Actions requiring Mode changes are suspended, the level of safety is increased because perturbations which could result in a plant trip will be avoided.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.3 CTS 4.7.1.2.c.1 states in part, "Verifying that each automatic valve in the flow path actuates to its correct position..." ITS SR 3.7.5.3 states in part, "Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position." The ITS is less restrictive since it does not require verification of the correct actuation for valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively and are required to be verified in the correct position prior to locking, sealing, or securing, and on a periodic basis thereafter. Reference DOC LA.2 for additional discussion. PVNGS current operating practice is to consider valves OPERABLE if they are secured in their actuated position. This practice is supported by CTS 4.6.3.5 which states in part, "Valves secured*** in their actuated position are considered operable pursuant to this Specification." The asterisks refer to the clarifying statement, "Locked, sealed, or otherwise prevented from unintentional operation." Although this change has the potential for reducing the amount of Surveillance Testing required, there is no impact to safety since the correct alignment of the actuated system is still assured by testing of valves which are not locked, sealed, or secured, and administratively controlling valves which are locked, sealed, or secured. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.3) (continued)

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

The proposed change removes the requirement to verify proper actuation of automatic valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively to assure that they are in the required position prior to securing. These components also undergo periodic inspections to assure that they remain in the required position. Any intent changes to the requirements or content of the procedures which govern the locked valve, breaker and component program must be evaluated in accordance with 10CFR50.59 prior to implementation. Since these valves have been verified to be in the required position, and are secured in that position, it is not necessary to verify proper actuation to assure they are capable of performing their safety function.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.3) (continued)

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

The proposed change removes the requirement to verify proper actuation of automatic valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively to assure that they are in the required position prior to securing. These components also undergo periodic inspections to assure that they remain in the required position. Any intent changes to the requirements or content of the procedures which govern the locked valve, breaker and component program must be evaluated in accordance with 10CFR50.59 prior to implementation. Since these valves have been verified to be in the required position, and are secured in that position, it is not necessary to verify proper actuation to assure they are capable of performing their safety function.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.3) (continued)

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

The proposed change removes the requirement to verify proper actuation of automatic valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively to assure that they are in the required position prior to securing. These components also undergo periodic inspections to assure that they remain in the required position. Any intent changes to the requirements or content of the procedures which govern the locked valve, breaker and component program must be evaluated in accordance with 10CFR50.59 prior to implementation. Since these valves have been verified to be in the required position, and are secured in that position, it is not necessary to verify proper actuation to assure they are capable of performing their safety function.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.4 CTS 4.7.1.2.c requires testing of AFW pump and valve automatic actuation once per 18 months. This Surveillance is required to be current during Modes 1, 2, 3, and 4. ITS SR 3.7.5.3 and ITS SR 3.7.5.4 also require testing of AFW pump and valve automatic actuation but are modified by a Note which states, "Not applicable in MODE 4 when steam generator is relied upon for heat removal." This change is acceptable since the required pump is already running in Mode 4 and the autostart function is not required. This change does not impact safety. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.4) (continued)

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

The proposed change removes the requirement to surveil the automatic actuation of components in Mode 4. During Mode 4, the required AFW pump is in operation if the steam generators are being used for heat removal. Similarly, since the required AFW pump is feeding the steam generator, it follows that the required flow path is properly aligned. Therefore, no automatic actuation is required. In Mode 4, the SDC system may also be available to remove heat from the primary system.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change removes the requirement to Surveil the automatic actuation of components in Mode 4. During Mode 4, the required AFW pump is in operation if the steam generators are being used for heat removal. Similarly, since the required AFW pump is feeding the steam generator, it follows that the required flow path is properly aligned. Therefore, no automatic actuation is required. In Mode 4, the SDC system may also be available to remove heat from the primary system.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.4) (continued)

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

The proposed change removes the requirement to Surveil the automatic actuation of components in Mode 4. During Mode 4, the required AFW pump is in operation if the steam generators are being used for heat removal. Similarly, since the required AFW pump is feeding the steam generator, it follows that the required flow path is properly aligned. Therefore, no automatic actuation is required. In Mode 4, the SDC system may also be available to remove heat from the primary system.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.5 CTS 4.7.1.2.c.1 and CTS 4.7.1.2.c.2 require components to be surveilled to assure their automatic performance is acceptable when subjected to an actuation test signal. ITS SR 3.7.5.3 and SR 3.7.5.4 allow the use of an actual or simulated actuation signal. This change allows actuation of these components for reasons other than Surveillances to be used to fulfill the SRs. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change has no impact on safety. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.5) (continued)

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

The proposed change allows verification of automatic valve actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for AFW SRs if actuation occurs from an actual actuation signal. In this case, if an actual signal is received and the AFW System properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the AFW System components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change allows verification of automatic valve actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for AFW SRs if actuation occurs from an actual actuation signal. In this case, if an actual signal is received and the AFW System properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the AFW System components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.5 Discussion of Changes Labeled L.5) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows verification of automatic valve actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for AFW SRs if actuation occurs from an actual actuation signal. In this case, if an actual signal is received and the AFW System properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the AFW System components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.6
MARK UP

<DOC>
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3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

<3.7.1.3> LCO 3.7.6 The CST level shall be ≥ ~~[350,000] gal.~~ 29.5 ft 2

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.1.3 ACT b> <4.7.1.3.2>	A. CST level not within limit.	A.1 Verify OPERABILITY of backup water supply. AND A.2 Restore CST level to within limit.	4 hours AND Once per 12 hours thereafter 7 days
<3.7.1.3 ACT b>	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 ~~[18]~~ 24 hours 3

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SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.7.1.3.2>	SR 3.7.6.1 Verify CST level is ≥ ~~[350,000] gal~~ 29.5 ft. 2	12 hours

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.6
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank (CST)

BASES

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~~ is the primary source of water for the Auxiliary Feedwater (AFW) System (LCO 3.7.4, "Auxiliary Feedwater (AFW) System"). The steam produced is released to the atmosphere by the main steam safety valves (MSSVs) or the atmospheric dump valves. ~~The AFW pumps operate with a continuous recirculation to the CST.~~

2 1

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 control ~~valves~~. The condensed steam is returned to the CST by the condensate pump draw-off ~~transfer pump~~. This has the advantage of conserving condensate while minimizing releases to the environment.

2 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. The CST is designed to Seismic Category I requirements to ensure availability of the feedwater supply. Feedwater is also available from ~~an alternate source~~ the Reactor Makeup Water Tank (RMWT).

2

A description of the CST is found in the ~~FSAR~~ UFSAR Section [9.2.6] (Ref. 1).

2

APPLICABLE SAFETY ANALYSES

The CST provides cooling water to remove decay heat and to cool down the unit following all events in the accident analysis, discussed in the ~~FSAR~~ UFSAR, Chapters [6] and [15] (Refs. 2 and 3, respectively). For anticipated operational occurrences and accidents which do not affect the OPERABILITY of the steam generators, ~~the analysis assumption is generally [30] minutes~~ the CST has sufficient volume to maintain the plant for 8 hours at MODE 3, ~~steaming through the MSSVs~~ followed by a cooldown to shutdown cooling (SDC) entry conditions at the design cooldown rate.

2

The limiting event for the condensate volume is the large feedwater line break with a coincident loss of offsite

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

power. Single failures that also affect this event include the following:

a. The 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 (2)

b. The 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.

(2) essential

A nonlimiting event considered in CST inventory determinations is a break either in the main feedwater, or AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, as the ~~Emergency~~ Auxiliary (2) 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 by the retaining of steam generator inventory. A break in the non-essential AFW line could have similar consequences on CST level but is not controlled by AFAS. Actuation requires operator action

The CST satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii).

LCO

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water to remove decay heat for ~~[30 minutes]~~ 4hours (2) following a reactor trip from 102% RTP, and then cool down the RCS to SDC 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 the cooldown, as well as to account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line.

The CST level required is a usable volume of ~~(≤) [350,000]~~ ≥ 300,000 (2) gallons, which is based on holding the unit in MODE 3 for ~~[4]~~ 8 (2) hours, followed by a cooldown to SDC entry conditions at 75°F per hour. This basis ~~is established~~ exceeds the level required by the NRC Standard Review Plan Branch Technical Position, Reactor

(continued)

BASES

LCO (continued)

Systems Branch 5-1 (Ref. 4) ~~and exceeds the volume required by the accident analysis~~. 2

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 MODES 5 and 6, the CST is not required because the AFW System is not required.

ACTIONS

A.1 and A.2

2 (RMWT)

If the CST level is not within the limit, the OPERABILITY of the backup water supply must be verified by administrative means within 4 hours.

RMWT 2 26 ft (300,000 gal.) 2

OPERABILITY of the ~~backup feedwater supply~~ must include verification of the OPERABILITY of flow paths from the ~~backup supply~~ (2 RMWT) to the AFW pumps, and availability of ~~the required volume~~ of water in the ~~backup supply~~ (RMWT). The CST level must be returned to OPERABLE status within 7 days, as the ~~backup supply~~ (2 RMWT) 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~~ (2 RMWT). The 7 day Completion Time is reasonable, based on an OPERABLE ~~backup water supply~~ (2 RMWT) being available, and the low probability of an event requiring the use of the water from the CST occurring during this period.

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 steam generator for heat removal, within ~~18~~ 24 (3) hours. The allowed Completion

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

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 29.5ft (300,000) 2

This SR verifies that the CST contains the required volume of cooling water. (This level ≥ ~~{350,000}~~ gallons.) 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. The 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal CST level deviations.

REFERENCES

1. UFSAR ~~FSAR~~, Section {9.2.6}.
2. UFSAR ~~FSAR~~, Chapter {6}. 2
3. UFSAR ~~FSAR~~, Chapter {15}.
4. NRC Standard Review Plan Branch Technical Position (BTP) RSB 5-1.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.6

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. NUREG-1432 LCO 3.7.6, Action B, specifies a bracketed Completion Time of 18 hours to be in Mode 4 without reliance on steam generator for heat removal when the required condensate storage tank Action and Associated Completion time are not met. ITS LCO 3.7.6, Action C, specifies a Completion Time of 24 hours. The 24 hour Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner without challenging unit systems. The Bases have been revised to be consistent with the LCO/Surveillance.

PVNGS CTS
SPECIFICATION 3.7.6
MARK UP

Specification 3.7.6

3.7 PLANT SYSTEMS

3.7.6 CONDENSATE STORAGE TANK (CST) A.1

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.6 ~~3.7.1.3~~ The condensate storage tank (CST) ~~shall be OPERABLE with an indicated~~ level ~~of~~ shall be at least 29.5 feet ~~(300,000 gallons).~~

APPLICABILITY: MODES 1, 2, 3#, and 4*~~#~~ M.1

ACTION:

Req ACT A.1 With the condensate storage tank inoperable, within 4 hours either:

a. ~~Restore the CST to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours, or~~ A.2 M.2

ACT A. ~~b.~~ Demonstrate the OPERABILITY of ~~the reactor makeup water tank as~~ a backup supply ~~to the essential auxiliary feedwater pumps~~ and restore the condensate storage tank to OPERABLE status within 7 days LA.1

ACT B. or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN with a OPERABLE shutdown cooling loop in operation within the following ~~6~~ 18 hours. L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1 ~~4.7.1.3.1 The condensate storage tank shall be demonstrated OPERABLE at least~~ once per 12 hours ~~by~~ verify~~ing the~~ CST level ~~(contained water volume) is within its limits when the tank is the supply source for the auxiliary feedwater pumps.~~ is ≥ 29.5 ft

Req ACT A.1 ~~4.7.1.3.2~~ The ~~reactor makeup water tank~~ backup supply shall be demonstrated OPERABLE at least once per 12 hours ~~whenever the reactor makeup water tank is the supply source for the essential auxiliary feedwater pumps~~ by verifying: LA.1

~~a. That the reactor makeup water tank supply line to the auxiliary feedwater system isolation valve is open, and~~

~~b. That the reactor makeup water tank contains a water level of at least 26 feet (300,000 gallons).~~

Applicability

*~~Until~~ When the steam generators are ~~no longer required for heat removed.~~ relied upon for heat removal

~~#Not applicable when cooldown is in progress.~~ M.1

DISCUSSION OF CHANGES
SPECIFICATION 3.7.6

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.7.1.3 states in part, "With the condensate storage tank inoperable, within 4 hours... Restore the CST to OPERABLE status..." ITS 3.7.6 does not explicitly state the option of restoring OPERABILITY but it does specify the required action to verify the backup water supply within 4 hours of the CST level not within limits. (ITS 3.7.6 BASES states that CST OPERABILITY is determined by maintaining the tank level at or above the minimum required level.) ITS LCO 3.0.2 states, "If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated." The Bases for ITS LCO 3.0.2 states, "Whether stated as a Required Action or not, correction of the entered condition is an action that may always be considered upon entering Actions." The option of restoring OPERABILITY is already provided generically by ITS LCO 3.0.2, therefore it need not be restated in the individual specifications. This change does not impact safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.7.1.3 Applicability for Mode 4 is modified by an asterisk which states that the LCO is not Applicable when cooldown is in progress. ITS 3.7.6 does not contain this exclusion. The exclusion is contained in the CTS so that initiation of a cooldown starting with the CST level at 29.5 ft will not require entry into an Action statement due to the expected decrease in level. Removal of this exclusion constitutes a more restrictive change since it will require initiating cooldown with a level in excess of LCO requirements or adding makeup to the CST to avoid entering an Action statement. A generic change has been submitted to add this note to NUREG-1432. ITS 3.7.6 may be revised pending approval of the generic change by the NRC. This change does not impact safety and is consistent with NUREG-1432.

M.2 In situations when the condensate storage tank (CST) is inoperable and the backup water supply (RWMT) is also inoperable, at 4 hours CTS 3.7.1.3, Action a, requires the plant to be in at least HOT STANDBY (Mode 3) within the next 6 hours and HOT SHUTDOWN (Mode 4) within the following 6 hours (12 hours total). In the same situation (both CST and backup are inoperable at the 4 hour limit), ITS 3.7.6 b requires the plant to be in Mode 3 in 6 hours and in Mode 4 without reliance on steam generator for heat removal in 24 hours. The ITS end-state requirement of "Mode 4 without reliance on steam generator for heat removal" is more restrictive than the CTS end-state of Mode 4. This change does not impact safety and is consistent with NUREG-1432. The longer time allowed to achieve the end state (24 hours in ITS vs. 12 hours in CTS) could be considered a less restrictive change in some situations and is discussed in section L.1 in this Discussion of Changes.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.7.1.3 Action b states in part, "Demonstrate the OPERABILITY of the reactor makeup water tank as a backup supply to the essential auxiliary feedwater pumps..." CTS 4.7.1.3.2 provides details of the verifications which are required to be performed in order to demonstrate OPERABILITY. ITS 3.7.6 Required Action A.1 requires a backup water supply for the condensate storage tank pumps be verified but does not detail either the source of this backup supply or the acceptance criteria by which it is determined OPERABLE. These details are not required to determine the OPERABILITY of the backup water supply and therefore are being relocated to the Bases section.

Any change to the requirements in the Bases will be governed by the provisions of the PVNGS Bases Control Program. This provides an equivalent level of regulatory control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 In situations when the condensate storage tank (CST) is inoperable in that the backup water supply (RWMT) cannot be verified operable within 4 hours or CTS level cannot be recovered within 7 days the plant is required to be in HOT STANDBY (Mode 3) within 6 hours and HOT SHUTDOWN (Mode 4) with an OPERABLE shutdown cooling loop in operation within the following 6 hours (12 hours total). In the same situation, ITS 3.7.6, Action B requires, the plant to be in Mode 3 within 6 hours and in Mode 4 without reliance on steam generator for heat removal within 24 hours. The CTS end-state of "Mode 4 with an OPERABLE shutdown cooling loop in operation" is considered equivalent to the ITS end-state of "Mode 4 without reliance on steam generator for heat removal." The longer time allowed in ITS to achieve the end-state (24 hours in ITS vs. 12 hours in CTS) is a less restrictive change to CTS. This change is acceptable because an orderly shutdown and cooldown from full power conditions to the required low-temperature Mode 4 end-state (shutdown cooling in operation) would be less challenging to plant systems when done in 24 hours vs. 12 hours. The additional 12 hours for cooldown would occur in Mode 3 or below, since the ITS would keep the CTS requirement for Mode 3 entry within the first 6 hours of the Required Action. Although in this situation the shutdown and cooldown could commence up to 7 days after the CST is declared inoperable, in the situation described in section M.2 of this Discussion of Changes (CST inoperable and backup water supply inoperable) the shutdown and cooldown would be required no more than 4 hours after the CST is declared inoperable. In that situation, the additional 12 hours (24 hours total) to achieve cooldown to Mode 4 shutdown cooling entry conditions is especially needed for an orderly shutdown and cooldown since the previous 7 days would not be available to prepare for the shutdown and cooldown. In that situation (described in M.2) this is not considered a less restrictive change, since the CTS would only require an end-state of Mode 4, not Mode 4 with shutdown cooling in operation. This change would not impact safety since it would enable a more controlled shutdown and cooldown, with less challenge to plant systems, by allowing 24 hours shutdown and cooldown from power operation to a Mode 4 condition where there is no reliance on steam generator for heat removal instead of requiring 12 hours.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.6

ADMINISTRATIVE CHANGES
(ITS 3.7.6 Discussion of Changes Labeled A.1 and A.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.6 Discussion of Changes Labeled (A.1 and A.2) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.6 Discussion of Changes Labeled M.1 and M.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.6 Discussion of Changes Labeled M.1 and M.2) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.6 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.6 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.6 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 In situations when the condensate storage tank (CST) is inoperable in that the backup water supply (RWMT) cannot be verified operable within 4 hours or CTS level cannot be recovered within 7 days the plant is required to be in HOT STANDBY (Mode 3) within 6 hours and HOT SHUTDOWN (Mode 4) with an OPERABLE shutdown cooling loop in operation within the following 6 hours (12 hours total). In the same situation, ITS 3.7.6, Action B requires, the plant to be in Mode 3 within 6 hours and in Mode 4 without reliance on steam generator for heat removal within 24 hours. The CTS end-state of "Mode 4 with an OPERABLE shutdown cooling loop in operation" is considered equivalent to the ITS end-state of "Mode 4 without reliance on steam generator for heat removal." The longer time allowed in ITS to achieve the end-state (24 hours in ITS vs. 12 hours in CTS) is a less restrictive change to CTS. This change is acceptable because an orderly shutdown and cooldown from full power conditions to the required low-temperature Mode 4 end-state (shutdown cooling in operation) would be less challenging to plant systems when done in 24 hours vs. 12 hours. The additional 12 hours for cooldown would occur in Mode 3 or below, since the ITS would keep the CTS requirement for Mode 3 entry within the first 6 hours of the Required Action. Although in this situation the shutdown and cooldown could commence up to 7 days after the CST is declared inoperable, in the situation described in section M.2 of this Discussion of Changes (CST inoperable and backup water supply inoperable) the shutdown and cooldown would be required no more than 4 hours after the CST is declared inoperable. In that situation, the additional 12 hours (24 hours total) to achieve cooldown to Mode 4 shutdown cooling entry conditions is especially needed for an orderly shutdown and cooldown since the previous 7 days would not be available to prepare for the shutdown and cooldown. In that situation (described in M.2) this is not considered a less restrictive change, since the CTS would only require an end-state of Mode 4, not Mode 4 with shutdown cooling in operation. This change would not impact safety since it would enable a more controlled shutdown and cooldown, with less challenge to plant systems, by allowing 24 hours shutdown and cooldown from power operation to a Mode 4 condition where there is no reliance on steam generator for heat removal instead of requiring 12 hours.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.6 Discussion of Changes Labeled L.1) (continued)

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed change will allow more time to shutdown and cooldown the plant from power operation to the end state of "Mode 4 without reliance on steam generator for heat removal." The CTS currently requires this to be done in 12 hours. The ITS will require 24 hours (vs. 12 hours) to achieve this shutdown and cooldown. This change would not impact safety since it would enable a more controlled shutdown and cooldown, without challenging plant systems, by allowing 24 hours to shutdown and cooldown from power operation instead of requiring 12 hours. The additional 12 hours to cooldown the plant would occur in Modes 3 and 4, since the time requirement for Mode 3 entry is not changing.

This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation, other than allowing more time to cooldown the plant from Mode 3 to "Mode 4 without reliance on steam generator" such that it can be accomplished in a controlled manner, without challenging plant systems. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.6 Discussion of Changes Labeled L.1) (continued)

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

The proposed change will allow more time to shutdown and cooldown the plant from power operation to the end state of "Mode 4 without reliance on steam generator for heat removal." The CTS currently requires this to be done in 12 hours. The ITS will require 24 hours (vs. 12 hours) to achieve this shutdown and cooldown. This change would not impact safety since it would enable a more controlled shutdown and cooldown, without challenging plant systems, by allowing 24 hours to shutdown and cooldown from power operation instead of requiring 12 hours. The additional 12 hours to cooldown the plant would occur in Modes 3 and 4, since the time requirement for Mode 3 entry is not changing.

This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation, other than allowing more time to cooldown the plant from Mode 3 to "Mode 4 without reliance on steam generator" such that it can be accomplished in a controlled manner, without challenging plant systems. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.6 Discussion of Changes Labeled L.1) (continued)

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

The proposed change will allow more time to shutdown and cooldown the plant from power operation to the end state of "Mode 4 without reliance on steam generator for heat removal." The CTS currently requires this to be done in 12 hours. The ITS will require 24 hours (vs. 12 hours) to achieve this shutdown and cooldown. This change would not impact safety since it would enable a more controlled shutdown and cooldown, without challenging plant systems, by allowing 24 hours to shutdown and cooldown from power operation instead of requiring 12 hours. The additional 12 hours to cooldown the plant would occur in Modes 3 and 4, since the time requirement for Mode 3 entry is not changing.

This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation, other than allowing more time to cooldown the plant from Mode 3 to "Mode 4 without reliance on steam generator" such that it can be accomplished in a controlled manner, without challenging plant systems. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not involve a significant reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.7
MARK UP

<DOC>

<CTS> 3.7 PLANT SYSTEMS

3.7.7 ~~Component Cooling Water (CCW)~~ System
Essential Cooling Water (EW) 2

<3.7.3> LCO 3.7.7 Two ~~CCW~~ EW 2 trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.3 ACT> <DOC A.4> A. One ~~CCW~~ EW train inoperable.	A.1 ---------NOTE--------- 1 Enter applicable Conditions and Required Actions of LCO3.4.6 ~~LCO 3.4.6~~, "RCS Loops—MODE 4" for shutdown cooling made inoperable by ~~CCW.~~ EW --------------------- 2 Restore ~~CCW~~ EW train to OPERABLE status.	72 hours
<3.7.3 ACT> 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

<DOC>
<LTS>

SURVEILLANCE REQUIREMENTS

		SURVEILLANCE	FREQUENCY
<4.7.3.a> <DOC A.5>	SR 3.7.7.1 (2)	---------------NOTE--------------- Isolation of ~~CCW~~ EW flow to individual components does not render the ~~CCW~~ EW System inoperable. ------------------------------------ Verify each ~~CCW~~ EW 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
<4.7.3.b>	SR 3.7.7.2 (2)	Verify each ~~CCW~~ EW 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
<4.7.3.c>	SR 3.7.7.3 (2)	Verify each ~~CCW~~ EW pump starts automatically on an actual or simulated actuation signal.	18 months

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.7
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.7 ~~Component~~ Cooling Water ~~(CCW)~~ System (EW)

Essential 2

BASES

2

BACKGROUND

The ~~CCW~~ EW 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 pool.~~ The EW System acts as a backup to the non-safety related Nuclear Cooling Water System for several non-safety related loads. The ~~CCW~~ EW System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the ~~Service Water~~ Essential Spray Pond (ESPS) 2 System, and thus to the environment. 2

The ~~CCW~~ EW System is arranged as two independent full capacity cooling loops, and ~~has isolatable nonsafety related components~~ which are normally isolated from the Nuclear Cooling Water System. 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~~ The surge tank in the system provides pump trip protective functions to ensure sufficient net positive suction head is available. 2 chemical addition tank, The pump in each train is automatically started on receipt of ~~a safety injection actuation signal~~ an ESFAS signal ~~, and all nonessential components are isolated~~. 2

Additional information on the design and operation of the system, along with a list of the components served, is presented in the ~~FSAR~~ UFSAR, Section ~~[9.2.2]~~, Reference 1, and Section 9.2.1, Reference 2. 2 The principal safety related function of the ~~CCW~~ EW System is the removal of decay heat from the reactor via the Shutdown Cooling (SDC) System heat exchanger. ~~This may utilize the SCS heat exchanger, during a normal or post accident cooldown and shutdown, or the Containment Spray System during the recirculation phase following a loss of coolant accident (LOCA).~~ 2

2

APPLICABLE SAFETY ANALYSES

The design basis of the the ultimate heat sink and ~~CCW~~ EW System is for one ~~CCW~~ EW train in conjunction with a 100% capacity Containment ~~Cooling~~ Spray System ~~(containment spray, containment coolers, or a combination) removing core decay heat 20 minutes after a design basis LOCA. This prevents the containment sump fluid from increasing in temperature during the recirculation phase~~ 2 to remove sufficient heat to ensure a safe reactor shutdown coincident with a loss of offsite power,

(continued)

BASES

2
The EW System

APPLICABLE SAFETY ANALYSES (continued)

~~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 safety injection pumps. 2
the containment sump

EW 2 The CCW System is designed to perform its function with a single failure of any active component, assuming a loss of offsite power.

EW 210 2 The CCW System also functions to cool the unit from SDC 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 SDC trains operating. One CCW train is sufficient to remove decay heat during subsequent operations with T_{cold} < [200] °F. This assumes that ~~a maximum seawater temperature of 76°F~~ occurs simultaneously with the maximum heat loads on the system. EW 210 2 EW 210 2

2 the worst case meteorological conditions

EW 2 The CCW System satisfies Criterion 3 of ~~the NRC Policy Statement~~.
10CFR50.36(c)(2)(ii)

LCO

EW 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, two CCW trains must be OPERABLE. At least one CCW train will operate assuming the worst single active failure occurs coincident with the loss of offsite power. EW 2 EW EW 2

EW A CCW train is considered OPERABLE when the following:

a. The associated pump and surge tank are OPERABLE; and

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

2 EW 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. EW 2

(continued)

BASES (continued)

2 EW

APPLICABILITY

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

In MODES 5 and 6, the OPERABILITY requirements of the CCW EW System are determined by the systems it supports. (Reference LCO 3.0.6 and the SFDP (specification 5.5.14).)

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating the requirement of entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4," for SDC made inoperable by CCW. This Note is only applicable in MODE 4. 1 This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. 2 EW

EW

With one CCW train 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 based on the redundant capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this period. EW 2

B.1 and B.2

EW 2

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.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

EW 2

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 potentially being mispositioned are in their correct position.

EW 2

EW 2

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

EW 2

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

SR 3.7.7.2

EW 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.~~ 3 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.~~ 4 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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.7.3

EW 2

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

REFERENCES 2

1. UFSAR, Section [9.2.2]

2. UFSAR, Section 9.2.1

PVNGS IMPROVED TECHNICAL SPECIFICATION
SPECIFICATION 3.7.7
NUREG EXCEPTIONS

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.7

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. NUREG Bases 3.7.7, SR 3.7.7.2 states that the CCW (i.e., EW System) is a normally operating system. PVNGS current operating practice does not consider the EW as a normally operating system. Therefore, the Bases is revised to depict PVNGS operating practices.

4. NUREG Bases 3.7.7, SR 3.7.7.2 and 3.7.7.3 specify an 18 month Frequency to perform the SR. PVNGS will continue to use the 18 month Frequency, however, PVNGS design will allow this testing to be performed at anytime.

PVNGS CTS
SPECIFICATION 3.7.7
MARK UP

Specification 3.7.7

(A.1)

3.7 PLANT SYSTEMS (EW)

3.7.7 ~~3/4.7.3~~ ESSENTIAL COOLING WATER SYSTEM

~~LIMITING CONDITION FOR OPERATION~~

EW trains

LCO 3.7.7 ~~3.7.3 At least~~ two ~~independent essential cooling water loops~~ shall be OPERABLE.

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

----NOTE----
Enter applicable Conditions and Required Actions of LCO 3.4.6 "RCS LOOPS-MODE 4" for shutdown cooling made inoperable by EW. (A.4)

ACTION:

One EW train inoperable — EW train

ACT A ~~With only one essential cooling water loop OPERABLE~~, restore ~~at least two loops~~ to OPERABLE status within 72 hours

ACT B or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

~~4.7.3 At least two essential cooling water loops shall be demonstrated OPERABLE:~~

(M.1) in the flowpath

SR 3.7.7.1 ~~a.~~ 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.

SR 3.7.7.2 ~~b.~~ At least once per 18 months ~~during shutdown~~, (A.2) by verifying that each automatic valve ~~servicing safety-related equipment~~ actuates to its correct position on an SIAS test signal. or (A.3)

SR 3.7.7.3 ~~c.~~ At least once per 18 months ~~during shutdown~~, (A.2) by verifying that the essential cooling water pumps start on an SIAS test signal. or (A.3)

~~d. At least once per 18 months during shutdown, by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position.~~ (LA.1)

Note
Isolation of EW flow to individual components does not render the EW system inoperable (A.5)

that is not locked, sealed, or otherwise secured in position (L.1)

DISCUSSION OF CHANGES
SPECIFICATION 3.7.7

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.7.3.b and CTS 4.7.3.c specify a frequency of, "At least once per 18 months during shutdown..." ITS SR 3.7.7.2 and ITS SR 3.7.7.3 which require the same Surveillances specify a frequency of 18 months but do not stipulate that the Surveillance must be performed during shutdown. The 18 month frequency is based on the need to perform these Surveillances under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Eliminating the words "during shutdown" from the ITS frequency does not reduce the operational considerations necessary to perform the Surveillance safely. This change does not impact safety. This change is consistent with NUREG-1432.

A.3 CTS 4.7.3.b and CTS 4.7.3.c require the EW System pumps and automatic valves to be surveilled to assure their automatic performance is acceptable when subjected to a SIAS test signal. ITS allows the use of an actual or simulated actuation signal. This change allows actuation of the EW System for reasons other than Surveillances to be used to fulfill the SRs. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change has no impact on safety. This change is consistent with NUREG-1432.

A.4 CTS 3.7.3 does not contain direction for additional actions to take for supported systems made inoperable by an inoperable EW System. Notes will be added to ITS LCO 3.7.7 Required Action A.1 directing users to the shutdown cooling TS for Actions to take when that system is made inoperable by an inoperable EW System.

Cascading of TSs is required in the CTS by LCO 3.0.1 which states in part, "...upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met." The CTS does not distinguish between supported systems which are inoperable due solely to an inoperable support system or otherwise. Cascading of TSs is addressed in the ITS by LCO 3.0.6 which states in part, "...When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2." Addition of these notes has the effect, in conjunction with the quoted portion of ITS LCO 3.0.6, of making implementation of the ITS and CTS identical. This change has no impact on safety. This change is consistent with NUREG-1432.

A.5 CTS 4.7.7.1 does not describe the effect of isolating flow to supported systems on EW System OPERABILITY. A note will be added to ITS SR 3.7.7.1 to clarify that isolation of EW System flow to individual components does not render EW inoperable. Isolating flow to supported components does not affect the ability of the EW System to support other unisolated components. Only those supported components which are isolated are inoperable. Addition of this clarifying note does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.7.3.b requires testing, at least once per 18 months, of each automatic valve that services safety-related equipment. ITS SR 3.7.7.2 requires the same Surveillances but extends the scope to all automatic valves in the flow path. This change does not reduce any requirement of the CTS and does not impact safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 4.7.3.d states, "At least once per 18 months during shutdown, by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position." Valves which are locked, sealed, or otherwise secured in position are not required to be surveilled since administrative controls require that they be verified to be in the correct position prior to locking, sealing, or securing. This requirement is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the Technical Requirement Manual (TRM).

Any change to the requirements in the TRM will be governed by the provisions of the 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to a Licensee Controlled Document is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 4.7.3.b requires verification, at least once per 18 months, that each automatic valve servicing safety related equipment actuates to its correct position on a SIAS test signal. ITS SR 3.7.7.2 requires the same surveillance, but limits the requirement to automatic valves in the flow path that are not locked, sealed, or otherwise secured in position. This is a less restrictive change since the CTS does not exempt from verifying actuation of valves that are locked, sealed, or otherwise secured in position. This change is acceptable because the valves that are locked, sealed, or otherwise secured in position are in the correct position to serve their safety related functions, and do not have to actuate to perform a safety related function. No safety related purpose would be served by verifying the actuation of valves that are not required to actuate because they are locked, sealed, or otherwise secured in position. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.7

ADMINISTRATIVE CHANGES
(ITS 3.7.7 Discussion of Changes Labeled A.1, A.2, A.3, A.4 and A.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.7 Discussion of Changes Labeled (A.1, A.2, A.3, A.4 and A.5) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.7 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.7 Discussion of Changes Labeled M.1) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.7 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.7 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.7 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 4.7.3.b requires verification, at least once per 18 months, that each automatic valve servicing safety related equipment actuates to its correct position on a SIAS test signal. ITS SR 3.7.7.2 requires the same surveillance, but limits the requirement to automatic valves in the flow path that are not locked, sealed, or otherwise secured in position. This is a less restrictive change since the CTS does not exempt from verifying actuation of valves that are locked, sealed, or otherwise secured in position. This change is acceptable because the valves that are locked, sealed, or otherwise secured in position are in the correct position to serve their safety related functions, and do not have to actuate to perform a safety related function. No safety related purpose would be served by verifying the actuation of valves that are not required to actuate because they are locked, sealed, or otherwise secured in position. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.7 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement to verify proper actuation of automatic valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively to assure that they are in the required position prior to securing. These components also undergo periodic inspections to assure that they remain in the required position. Any intent changes to the requirements or content of the procedures which govern the locked valve, breaker and component program must be evaluated in accordance with 10CFR50.59 prior to implementation. Since these valves have been verified to be in the required position, and are secured in that position, it is not necessary to verify proper actuation to assure they are capable of performing their safety function.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.7 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement to verify proper actuation of automatic valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively to assure that they are in the required position prior to securing. These components also undergo periodic inspections to assure that they remain in the required position. Any intent changes to the requirements or content of the procedures which govern the locked valve, breaker and component program must be evaluated in accordance with 10CFR50.59 prior to implementation. Since these valves have been verified to be in the required position, and are secured in that position, it is not necessary to verify proper actuation to assure they are capable of performing their safety function.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE

(ITS 3.7.7 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement to verify proper actuation of automatic valves which are locked, sealed, or otherwise secured in position. Valves which are locked, sealed, or otherwise secured in position are controlled administratively to assure that they are in the required position prior to securing. These components also undergo periodic inspections to assure that they remain in the required position. Any intent changes to the requirements or content of the procedures which govern the locked valve, breaker and component program must be evaluated in accordance with 10CFR50.59 prior to implementation. Since these valves have been verified to be in the required position, and are secured in that position, it is not necessary to verify proper actuation to assure they are capable of performing their safety function.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.8
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.8 ~~Service Water System (SWS)~~ Essential Spray Pond System (ESPS) 2

<3.7.4> LCO 3.7.8 Two ~~SWS~~ ESPS 2 trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.4 ACT> <DOC A.3> A. One ~~SWS~~ ESPS train inoperable.	A.1 ---------NOTES-------- <DOC A.3> 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources—Operating," for emergency diesel generator made inoperable by ~~SWS.~~ ESPS 2. Enter applicable Conditions and Required Actions of ~~LCO 3.4.6,~~ LCO 3.4.6 2 "RCS Loops—MODE 4," for shutdown cooling made inoperable by ~~SWS.~~ ESPS --------------------------- Restore ~~SWS~~ ESPS train to OPERABLE status.	72 hours
<3.7.4 ACT> 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

<DOC>
<CTS>

ESPS
~~SWS~~
3.7.8

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
<4.7.4.1> <DOC A.2> SR 3.7.8.1	ESPS 2 ---NOTE--- Isolation of ~~SWS~~ flow to individual components does not render ~~SWS~~ ESPS inoperable. ------ Verify each ~~SWS~~ ESPS manual, and power operated~~, and~~ 1 ~~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
<DOC M.2> SR 3.7.8.~~3~~ 2 3	Verify each ~~SWS~~ ESPS pump starts automatically on an actual or simulated actuation signal.	~~[~~18~~]~~ months

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.7.8

BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.8 ~~Service Water~~ Essential Spray Pond System (~~SWS~~ ESPS) (2)

BASES

BACKGROUND

The ~~SWS~~ ESPS 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 or~~ a normal shutdown, the ~~SWS~~ ESPS also provides this function for various safety related ~~and nonsafety related~~ components. ~~The safety related function is covered by this LCO.~~ (2)

The ~~SWS~~ ESPS (2) consists of two separate, 100% capacity safety related cooling water trains. Each train consists of ~~two~~ one (2) 100% capacity pump~~s~~, one ~~component cooling water (CCW)~~ Essential Cooling Water (EW) heat exchanger, piping, valves, instrumentation, and ~~two cyclone separators~~ a cleanup and chemistry control system (2). The ~~pumps and~~ valves are ~~remote~~ manually aligned ~~, except in the unlikely event of a loss of coolant accident (LOCA)~~ and secured in position (2). The pumps ~~aligned to the critical loops~~ are automatically started upon receipt of ~~a safety injection actuation~~ an ESFAS (2) 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)

Additional information about the design and operation of the ~~SWS~~ ESPS, 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~~ ESPS (2) is the removal of decay heat from the reactor via the ~~[CCW System]~~ EW. (2) (2)

APPLICABLE SAFETY ANALYSES

The design basis of the ~~SWS~~ ESPS is for one ~~SWS~~ ESPS train, in conjunction with the ~~CCW~~ EW System and a 100% capacity containment ~~cooling~~ Spray (2) system ~~(containment spray, containment coolers, or a combination), removing core decay heat 20 minutes 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 safety injection pumps.~~ to remove sufficient heat to ensure a safe reactor shutdown coincident with a loss of offsite power. (2) The ~~SWS~~ ESPS (2) is designed to perform its

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued) (2)

function with a single failure of any active component, assuming the loss of offsite power.

The ~~SWS~~ ESPS, in conjunction with the ~~CCW~~ EW (2) System, also cools the unit from shutdown cooling (SDC), as discussed in the ~~FSAR~~ UFSAR, 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~~ EW (2) and SDC System trains that are operating. One ~~SWS~~ ESPS train is sufficient to remove decay heat during subsequent operations in MODES 5 and 6. This assumes that ~~a maximum SWS temperature of 95°F occurring~~ (2) worst case meteorological conditions occur simultaneously with maximum heat loads on the system.

The SWS satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii).

LCO (2)

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

ESPS (2)

An ~~SWS~~ train is considered OPERABLE when:

a. The associated pump is OPERABLE; and

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

(2)

APPLICABILITY

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

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

Reference LCO 3.0.6 and the SFDP (Specification 5.5.15).

(3)

(continued)

BASES (continued)

ACTIONS

A.1

ESPS 2

With one SSW train 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 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 of LCO 3.8.1, "AC Sources—Operating," ~~should be entered if~~ the 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 SDC system. The 72 hour Completion Time is based on the redundant capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this time period.

ESPS 2 ESPS ESPS 2 ESPS 2 2

must be entered when

This Note is only applicable in MODE 4.

B.1 and B.2

ESPS 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, ~~in MODE 4 within [12] 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 3.7.8.1

ESPS 2 and

Verifying the correct alignment for manual, power operated, ~~and automatic~~ valves in the SWS flow path ensures 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 locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This

(continued)

ESPS
SWS

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1 (continued)

Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. 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 necessarily affect the OPERABILITY of the SWS ESPS (2)

Although the ESPS remains Operable, the effect of isolating components on the mechanical performance must be evaluated. (2)

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 3.7.8.2~~

~~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 the normal testing. 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 3.7.8.~~3~~ 2

The SR verifies proper automatic operation of the SWS ESPS pumps on an actual or simulated actuation signal. ~~The SWS is a normally operating system that cannot be fully actuated as part of the 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.~~ (4) Operating experience has shown that these components usually pass the Surveillance when performed at the ~~[~~18~~]~~ month

(continued)

ESPS

SWS

3

BASES

SURVEILLANCE REQUIREMENTS	SR 3.7.8.~~3~~ 2 (continued) Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.
REFERENCES	UFSAR 1. ~~FSAR~~, Section [9.2.1]. ~~2. FSAR, Section [6.2].~~ 2 UFSAR ~~3.~~ 2 ~~FSAR~~ Section [5.4.7].

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.8

1. NUREG-1432 SR 3.7.8.2 requires that each SWS (PVNGS's ESPS) 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 test signal. The design of the PVNGS ESPS does not incorporate automatic valves. The original design included 4 motor operated valves; however, the operators on these valves have been abandoned in place and the valves are now locked in position. CTS 4.7.4.2 required verification once per 18 months that valves which are locked, sealed, or otherwise secured in position are in the correct position. This requirement is not contained in NUREG-1432 since administrative controls contained in the locked valve, breaker and component program assure they are in the correct position prior to securing. This change to NUREG-1432 has no impact on safety and is consistent with current licensing bases and plant design.

2. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

3. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

4. NUREG Bases 3.7.8, SR 3.7.8.3 discusses testing at a Frequency of 18 months. PVNGS will perform the subject SR on a 18 month interval, however, PVNGS design allows this testing to be done at anytime.

PVNGS CTS
SPECIFICATION 3.7.8
MARK UP

Specification 3.7.8

3.7 PLANT SYSTEMS (A.1)

3.7.8 ~~3/4.7.4~~ ESSENTIAL SPRAY POND SYSTEM (ESPS)

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.8 ~~3.7.4~~ At least two independent essential spray pond loops shall be OPERABLE.

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

ACTION:

ACT A With ~~only~~ one essential spray pond train inoperable ~~loop OPERABLE~~, restore ESPS train ~~at least two loops~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the

ACT B next 6 hours and in COLD SHUTDOWN within the following 30 hours.

NOTE
Isolation of ESPS flow to individual components does not render ESPS inoperable. (A.2)

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1 ~~4.7.4.1 At least two essential spray pond loops shall be demonstrated OPERABLE 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.

~~4.7.4.2 Once per 18 months during shutdown, verify that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position.~~ (LA.1)

SR 3.7.8.2 Verify each ESPS pump starts automatically on an actual or simulated actuation signal every 18 months. (M.1)

NOTES
1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for emergency diesel generator made inoperable by ESPS. (A.3)

2. Enter applicable Conditions and Required Actions of LCO 3.4.5, "RCS Loops - MODE 4," for shutdown cooling made inoperable by ESPS. (A.3)

DISCUSSION OF CHANGES
SPECIFICATION 3.7.8

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.7.4.1 requires verification every 31 days that each valve servicing safety related equipment and is not locked, sealed, or otherwise secured in position, is in its correct position. However, CTS 4.7.4.1 does not describe the effect of isolating ESPS flow to supported components. A Note has been added to ITS SR 3.7.8.1 to clarify that, "Isolation of ESPS flow to individual components does not render ESPS inoperable." Isolating flow to supported components does not affect the ability of the ESPS to support other unisolated components. Only those supported components which are isolated are inoperable. Addition of this clarifying Note does not impact safety and is consistent with NUREG-1432.

A.3 CTS 3.7.4 does not contain specific direction for additional actions to take for supported systems made inoperable by an inoperable ESPS. Notes have been added to ITS LCO 3.7.8, Required Action A.1 directing users to the emergency diesel generator TS and shutdown cooling TS for Actions to take when those Systems are made inoperable by an inoperable ESPS.

Cascading of TSs is required in CTS LCO 3.0.1 which states in part, "...upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met." The CTS does not distinguish between supported systems which are inoperable due solely to an inoperable support system or which are inoperable for other reasons. Cascading of TSs is addressed in the ITS by LCO 3.0.6 which states in part, "...When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2." Addition of these Notes has the effect, in conjunction with the quoted portion of ITS LCO 3.0.6, of making implementation of the ITS and CTS identical. This change is consistent with PVNGS current operating practice. This change has no impact on safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.7.4 does not require testing of the automatic actuation of ESPS pumps. ITS SR 3.7.8.2 requires that each ESPS pump starts automatically upon receipt of an actual or simulated actuation signal at least once per 18 months. Verification of the automatic actuation of the ESPS pumps assures that the system will function properly upon receipt of an appropriate actuation signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. This Frequency is consistent with the Frequency of other SRs verifying the actuation of automatic devices. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 4.7.4.2 states, "Once per 18 months during shutdown, verify that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position." Valves which are locked, sealed, or otherwise secured in position are not required to be surveilled since administrative controls require that they be verified to be in the correct position prior to locking, sealing, or securing. This requirement is being relocated to the Technical Requirements Manual (TRM).

Any change to the requirements in the TRM will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the TRM is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

None.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.8

ADMINISTRATIVE CHANGES
(ITS 3.7.8 Discussion of Changes Labeled A.1, A.2 and A.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.8 Discussion of Changes Labeled (A.1, A.2 and A.3) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed; in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.8 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.8 Discussion of Changes Labeled M.1) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.8 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.8 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.7.9

MARK UP

<DOC>
<CTS> 3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

<3.7.5> 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 B. Required Action and associated Completion Time of Condition A not met. OR <3.7.5ACT> A. UHS inoperable [for reasons other than Condition A]. 1	~~B.1~~ A.1 Be in MODE 3. 3 AND ~~B.2~~ A.2 Be in MODE 5.	6 hours 36 hours

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
<4.7.5> SR 3.7.9.1	Verify ~~water level of UHS is ≥ [562] ft [mean sea level].~~ the usable water depth of each essential spray pond is ≥ 12 ft.	24 hours

2

(continued)

SURVEILLANCE REQUIREMENTS (continued)

<4.7.5>
<DOC A.3>

SURVEILLANCE		FREQUENCY
[SR 3.7.9.2	Verify average 4 water temperature of ~~UHS~~ each essential spray pond is ≤ ~~[90]~~ 89° 2 °F.	24 hours]
~~[SR 3.7.9.3~~	~~Operate each cooling tower fan for ≥ [15] minutes.~~	~~31 days]~~ 1

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.9
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

BASES

BACKGROUND

2

Essential Spray Pond System (ESPS).

The UHS provides a heat sink for process and operating heat from safety related components during a Design Basis Accident (DBA) or transient ~~as well as during normal operation~~. This is done utilizing the ~~Service Water System~~

is the essential spray ponds as

2

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~~ UFSAR 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.

2

2

~~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.~~

26

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 another source(s) and a 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).~~

2

2

~~It follows that the many variations in the UHS configurations will result in many unit to unit variations in OPERABILITY determinations and SRs. The ACTIONS and SRs~~

(continued)

BASES

BACKGROUND (continued)

~~are illustrative of a cooling tower UHS without a makeup requirement.~~

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

APPLICABLE SAFETY ANALYSES

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 shutdown cooling. ~~For those units using it as the normal heat sink for condenser cooling via the Circulating Water System, unit operation at full power is its maximum heat load.~~ (2) 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~~ spray system~~s are~~ is 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. The assumptions include: worst expected meteorological conditions, conservative uncertainties when calculating decay heat, and the worst case failure ~~(e.g., single failure of a manmade structure)~~. (2) 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. 10CFR50.36(c)(2)(ii)

(2) The 26 day supply contained in the two essential spray ponds meets the intent of this requirement.

The UHS satisfies Criterion 3 of ~~the NRC Policy Statement~~.

LCO

The UHS is required to be OPERABLE. The UHS is considered OPERABLE if it contains a sufficient volume of water at or below the maximum temperature that would allow the ~~SWS~~ ESPS to operate for at least ~~30~~ 26 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~~ ESPS. (2) To meet this condition, the UHS temperature should not exceed ~~90~~ 89°F and the level of each ESP should not fall below ~~562 ft mean sea level~~ 12 ft usable water level during normal unit operation.

(2) Since the bottom 1.5 ft of water in each ESP is not usable, an actual ESP level of 13.5 ft provides a usable depth of 12 ft to meet the heat loads minimum requirement.

(continued)

BASES (continued)

APPLICABILITY

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

In MODES 5 and 6, the OPERABILITY requirements of the UHS are determined by the systems it supports. Reference LCO 3.0.6 and the SFDP (Specification 5.5.14). (3)

ACTIONS

(2)

~~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 restored the inoperable cooling tower fan(s) to OPERABLE status within 7 days.~~

~~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, the number of available systems, and the time required to complete the action.~~

A.1 and A.2 ~~B.1 and B.2~~ (2)

If ~~[the cooling tower fan cannot be restored to OPERABLE status within the associated Completion Time, or if]~~ 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1

This SR verifies adequate long term (~~30~~ 26 days) cooling can be maintained. The level specified also ensures sufficient NPSH is available for operating the ~~SWS~~ ESPS pumps. The 24 hour Frequency is based on operating experience related to the (2)

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1 (continued)

usable

of each ESP

(2) trending of the parameter variations during the applicable MODES. This SR verifies that the ~~UHS~~ water level is ≥ [562 ~~ft~~] [mean sea level]. 12 ft. This is measured as 13.5 ft manually or 14 ft in the Control Room.

SR 3.7.9.2

ESPS EW

(2) This SR verifies that the ~~SWS~~ is available to cool the ~~CCW~~ System to at least its maximum design temperature within the maximum accident or normal design heat loads for ~~30~~ 26 days following a DBA. The 24 hour Frequency is based on operating experience related to the trending of the parameter variations during the applicable MODES. This SR verifies that the UHS water temperature is ≤ [~~92~~] 89 °F, as indicated in the control room. This value includes allowance for uncertainties. (2) (2)

SR 3.7.9.3

(1) ~~Operating each cooling tower fan for ≥ [15] minutes verifies 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.~~

REFERENCES
1. ~~FSAR~~ UFSAR, Section [9.2.5].
2. Regulatory Guide 1.27. (2)

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.9

1. NUREG-1432 LCO 3.7.9 Action A and LCO 3.7.9 Action B contain references to cooling towers and cooling tower fans. The UHS at PVNGS is the essential spray ponds. The evaporative cooling for these heat sinks is provided by spray nozzles. The requirements of OPERABILITY contained in the current licensing bases are being retained. The level and temperature requirements which were contained in the LCO for CTS 3.7.5 are located in ITS SR 3.7.9.1 and ITS SR 3.7.9.2. This change is consistent with plant design and current licensing bases.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

4. NUREG-1432 SR 3.7.9.2 requires verification that the average water temperature is less than or equal to 89°F. ITS SR 3.7.9.2 requires verification that the water temperature is less than or equal to 89°F. The use of the word "average" in this Surveillance is not consistent with the NUREG Bases. The Bases indicates that a single measurement for each spray pond is used to determine the water temperature. Removal of the word "average" from the temperature equipment does not alter the practical implementation of the specification. The use of the word average is interpreted to mean "representative" since there is only one location to measure spray pond water temperature on each spray pond. Circulation of the spray pond water through filtering, chemical control and performance of testing and Surveillances helps to assure the measured value is representative of the bulk temperature.

PVNGS CTS
SPECIFICATION 3.7.9
MARK UP

Specification 3.7.9

A.1

PLANT SYSTEMS

3.7.9 ~~3/4.7.5~~ ULTIMATE HEAT SINK (UHS)

LIMITING CONDITION FOR OPERATION

LCO3.7.9 ~~3.7.5~~ The ultimate heat sink shall be OPERABLE ~~with two essential spray ponds each with:~~ A2

SR3.7.9.2 ~~a.~~ A minimum usable water depth of 12 feet, and A.2

SR3.7.9.1 ~~b.~~ ~~An average~~ water temperature of less than or equal to 89°F. A.2 A.3

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

ACTION:

ACT A. 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.

SURVEILLANCE REQUIREMENTS

SR3.7.9.2 SR3.7.9.1 4.7.5 The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the average water temperature and water depth to be within their limits for each essential spray pond.

DISCUSSION OF CHANGES
SPECIFICATION 3.7.9

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.7.5 states in part, "The ultimate heat sink shall be OPERABLE with two essential spray ponds each with:

a. A minimum usable water depth of 12 feet, and

b. An average water temperature of less than or equal to 89°F."

CTS 4.7.5 states, "The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the average water temperature and water depth to be within their limits for each essential spray pond." The details of OPERABILITY which are included in CTS 3.7.5 and referenced in CTS 4.7.5 are stated directly in ITS SR 3.7.9.1 and SR 3.7.9.2.

OPERABILITY is demonstrated in part by performance of the SRs; therefore, locating the details required for demonstration of adequate system performance in ITS SR 3.7.9.1 and ITS SR 3.7.9.2 is acceptable and does not immpact safety. This change is consistent with NUREG-1432.

A.3 CTS 3.7.5.b requires an average spray pond water temperature of less than or equal to 89°F. ITS SR 3.7.9.2 requires verification that the water temperature is less than or equal to 89°F. Removal of the word "average" from the temperature requirement does not alter the practical implementation of the specification. The use of the word average is interpreted to mean "representative" since there is only one location to measure spray pond water temperature on each spray pond. Circulation of the spray pond water through filtering, chemical control and performance of testing and Surveillances helps to assure the measured value is representative of the bulk temperature. Water temperature is less than or equal to 89°F. This change is also discussed as NUREG Exception 4.

TECHNICAL CHANGES - MORE RESTRICTIVE

None.

TECHNICAL CHANGES - RELOCATIONS

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.9

ADMINISTRATIVE CHANGES
(ITS 3.7.9 Discussion of Changes Labeled A.1, A.2 and A.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.9 Discussion of Changes Labeled (A.1, A.2 and A.3) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

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<DOC>
<CTS>

3.7 PLANT SYSTEMS

(EC)

3.7.10 Essential Chilled Water (ECW) System ②

<3.7.6> LCO 3.7.10 [Two] ECW trains shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
<3.7.6ACTa.>	A. One ECW train inoperable.	A.1	Restore ECW train to OPERABLE status.	~~7 days~~ 72 hours ①
<3.7.6ACTa.>	B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
		AND		
		B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
<4.7.6.1>	SR 3.7.10.1	Verify each ECW System ② 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.	31 days
<DOC M.2>	SR 3.7.10.2	Verify the proper actuation of each ECW System ② System component on an actual or simulated actuation signal.	[18] months

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.10
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.10 Essential Chilled Water (ECW) System

heat transfer system to the ultimate 2

BASES

BACKGROUND

The ECW System provides a heat sink for the removal of process and operating heat from selected safety related air handling systems during a Design Basis Accident (DBA) or transient.

The ECW System is a closed loop system consisting of two independent trains. Each 100% capacity train includes a heat exchanger, surge tank, pump, chemical addition tank, piping, valves, controls, and instrumentation. An independent 100% capacity chilled water refrigeration unit cools each train. The ECW System is actuated on ~~a safety injection actuation~~ signal (~~SIAS~~) and supplies chilled water to the heating, ventilation, and air conditioning (HVAC) units in Engineered Safety Feature (ESF) equipment areas (e.g., the main control room, ~~electrical~~ equipment room, and safety injection pump ~~area~~).

receipt of an ESFAS 2

DC

rooms

AFW pump rooms, EW pump rooms, 2

The flow path for the ECW System includes the closed loop of piping to all serviced equipment~~, and branch lines up to the first normally closed isolation valve~~.

2 2

During normal operation, the normal HVAC System ~~performs the cooling function of~~ the ECW System. The normal HVAC System ~~is a~~ nonsafety grade system that automatically shuts down when the ECW System receives a start signal. Additional information about the design and operation of the system, along with a list of components served, can be found in the FSAR, Section [9.2.9] (Ref. 1).

the Normal Chilled Water System (WC) and

cools the areas served by

WC System and the

are

Systems. Following ESFAS actuations, the EC System with essential HVAC units provide this cooling function to the control room and safety grade equipment. 2

U

APPLICABLE SAFETY ANALYSES

The design basis of the ECW System is to remove the post accident heat load from ESF spaces following a DBA coincident with a loss of offsite power. Each train provides chilled water to the HVAC units at the design temperature of ~~42~~ 44 °F ~~and flow rate of 400 gpm~~. The design flowrate is 319gpm for Train A and 314gpm for Train B not including flow required for oil cooler 2 2

The maximum heat load in the ESF pump room area occurs during the recirculation phase following a loss of coolant accident. During recirculation, hot fluid from the containment sump is supplied to the high pressure safety

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

injection and containment spray pumps. This heat load to the area atmosphere must be removed by the ECW System to ensure that these pumps remain OPERABLE.

The ECW satisfies Criterion 3 of ~~the NRC Policy Statement~~. 10CFR50.36(c)(2)(ii)

LCO

~~[Two]~~ ECW trains are required to be OPERABLE to provide the required redundancy to ensure that the system functions to remove post accident heat loads, assuming the worst single failure.

An ECW train is considered OPERABLE when:

a. The associated pump and surge tank are OPERABLE; and

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

The isolation of the ECW from other components or systems may render those components or systems inoperable, but does not affect the OPERABILITY of the ECW System.

2 The OPERABILITY of supported systems is determined in accordance with LCO 3.0.6 and the SFDP.

APPLICABILITY

In MODES 1, 2, 3, and 4, the ECW System is required to be OPERABLE when a LOCA or other accident would require ESF operation.

~~In MODES 5 and 6, potential heat loads are smaller and the probability of accidents requiring the ECW System is low.~~

2 the OPERABILITY requirements of the EC System are determined by the systems it supports. Reference LCO 3.0.6 and the SFDP (Specification 5.5.15).

ACTIONS

A.1

If one ECW train is inoperable, 72 hour action must be taken to restore OPERABLE status within ~~7 days~~ 72 hours. In this condition, one OPERABLE ECW train is adequate to perform the cooling function. The ~~7 day~~ Completion Time is reasonable, based on the low probability of an event occurring during this time, and the 100% capacity OPERABLE ECW train~~, and the redundant availability of the normal HVAC System~~. 1

(continued)

BASES

ACTIONS (continued)

B.1 and B.2

If the ECW train cannot be restored to OPERABLE status within the associated Completion Time, or two ECW trains are inoperable, 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 3.7.10.1

Verifying the correct alignment for manual, power operated, and automatic valves in the ECW flow path provides assurance that the proper flow paths exist for ECW 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 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 potentially being mispositioned are in the correct position.

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

SR 3.7.10.2 and 2

This SR verifies proper automatic operation of the ECW System components that the ECW pumps will start in the event of any accident or transient that generates ~~an SIAS~~ an applicable ESFAS signal. 2 This SR also ensures that each automatic valve in the flow paths actuates to its correct position on an actual or simulated ~~SIAS~~ ESFAS signal 2. The ECW System cannot be fully actuated as part of the SIAS CHANNEL FUNCTIONAL TEST during normal operation. The actuation logic is tested as part of the SIAS functional test every 92 days, except for the subgroup relays that actuate the system that cannot be tested during normal unit

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.10.2 (continued)

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. The [18] month Frequency is based on operating experience and design reliability of the equipment.

REFERENCES UFSAR 1. FSAR, Section [9.2.9].

2

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.10

1. NUREG-1432 LCO 3.7.10 Action A allows a Completion Time of 7 days to restore OPERABILITY with one EC train inoperable. ITS 3.7.10 Action A only allows a Completion Time of 72 hours for this Action. Review of the Bases for NUREG 3.7.10 reveals that the 7 day Completion Time is partially based on the redundancy provided by the Normal Chilled Water (WC) System. PVNGS design of the WC System does not provide 100% redundancy for the EC System and as such extending the Completion Time to 7 days is not justified. This change has no impact on safety and is consistent with current licensing bases.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

PVNGS CTS
SPECIFICATION 3.7.10
MARK UP

Specification 3.7.10

ITS

3.7 PLANT SYSTEMS

(EC)

A.1

3.7.10 3/4.7.6 ESSENTIAL CHILLED WATER SYSTEM

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.10 ~~3.7.6 At least~~ two ~~independent~~ essential chilled water ~~loops~~ trains shall be OPERABLE.

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

ACTION:

ACT A a. With ~~only~~ one essential chilled water ~~loop OPERABLE~~ train inoperable, restore ~~at least two loops~~ EC train to OPERABLE status within 72 hours or be in at least HOT

ACT B STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With only one essential chilled water system OPERABLE: LA.1

1. Within 1 hour verify that the normal HVAC system is providing space cooling to the vital power distribution rooms that depend on the inoperable essential chilled water system for space cooling, and

2. Within 8 hours establish OPERABILITY of the safe shutdown systems which do not depend on the inoperable essential chilled water system (one train each of boration, pressurizer heaters and auxiliary feedwater), and

3. Within 24 hours establish OPERABILITY of all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE essential chilled water system for space cooling.

If these conditions are not satisfied within the specified time, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR3.7.10.1 4.7.6.1 At least two essential chilled water loops shall be demonstrated OPERABLE 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. A.2

~~4.7.6.2 Once per 18 months during shutdown, verify that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position.~~ LA.2

SR3.7.10.2 Once per 18 months, verify the proper actuation of each EC System componenton an actual or simulated actuation signal. M.2

DISCUSSION OF CHANGES
SPECIFICATION 3.7.10

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.7.6.1 requires that each valve servicing safety-related equipment which is not locked, sealed or otherwise secured in position be verified to be in the correct position once per 31 days. ITS SR 3.7.10.1 requires that this same verification be performed for all valves in the flow path, not just valves which service safety related equipment. Since the EC System does not service any non-safety related equipment, this is an administrative change. Valves such as instrumentation root valves are not in the flowpath, nor do they service safety related equipment and hence are un-affected by this change. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 Not used

M.2 CTS 4.7.6 does not require testing of the automatic actuation of EC System components. ITS SR 3.7.10.2 requires that the proper actuation of each EC System component be verified upon receipt of an actual or simulated test signal at least once per 18 months. Verification of the automatic actuation of EC System components assures that the system will function properly in the event of an ESFAS. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. This Frequency is consistent with the Frequency of other SRs verifying the actuation of automatic devices. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.7.6 Action b details actions necessary to determine if the safety function of various supported systems are maintained with one train of EC inoperable. This check is performed by:

- verifying that normal HVAC is available for vital power distribution rooms that depend on the inoperable EC System within 1 hour;
- establishing OPERABILITY of safe shutdown systems which do not depend on the inoperable EC System within 8 hours; and,
- establishing the OPERABILITY of all other SSCs that do not depend on the inoperable EC System within 24 hours.

If the safety functions are not supported within the specified Completion Times, CTS 3.7.6 Action b requires a shutdown of the plant.

These requirements are not contained within ITS 3.7.10; however, the Safety Function Determination Program (SFDP) and ITS LCO 3.0.6 require this same type of evaluation to be performed to assure that the safety function of supported systems is retained if a support system is determined to be inoperable. Therefore, these requirements are being relocated to the SFDP.

Any change to the requirements to the SFDP will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the SFDP is acceptable and is consistent with NUREG-1432.

LA.2 CTS 4.7.6.2 states, "Once per 18 months during shutdown, verify that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is locked, sealed, or otherwise secured in position, is in its correct position." Valves which are locked, sealed, or otherwise secured in position are not required to be surveilled since administrative controls require that they be verified to be in the correct position prior to locking, sealing, or securing. This requirement is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the TRM.

LA.2 (continued)
Any change to the requirements in the TRM will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the TRM is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

None.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.10

ADMINISTRATIVE CHANGES
(ITS 3.7.10 Discussion of Changes Labeled A.1 and A.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.10 Discussion of Changes Labeled (A.1 and A.2) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.10 Discussion of Changes Labeled M.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.10 Discussion of Changes Labeled M.2) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.10 Discussion of Changes Labeled LA.1 and LA.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.10 Discussion of Changes Labeled LA.1 and LA.2) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.11
MARK UP

CREFS

CREACS

<DOC>

<CTS> 3.7 PLANT SYSTEMS Essential Filtration ② (CREFS)

3.7.11 Control Room ~~Emergency Air Cleanup~~ System ~~(CREACS)~~

<3.7.7> LCO 3.7.11 Two CREFS ~~CREACS~~ trains shall be OPERABLE.

<DocM.1> APPLICABILITY: MODES 1, 2, 3, 4, ~~*~~5, and 6,~~*~~
During movement of irradiated fuel assemblies, ~~[During CORE ALTERATIONS]~~.

②

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.7 MODES 1,2,3 and 4 ACT MODES 5 and 6 ACT a.> A. One CREFS ~~CREACS~~ train inoperable.	A.1 Restore CREFS ~~CREACS~~ train to OPERABLE status.	7 days
<3.7.7 MODES 1,2,3 and 4 ACT> 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. AND B.2 Be in MODE 5.	6 hours 36 hours
<3.7.7 MODES 5 and 6 ACT a.> C. Required Action and associated Completion Time of Condition A not met ~~*~~in MODES 5 and 6, ~~or* during movement of irradiated fuel assemblies[, or during CORE ALTERATIONS]~~. ②	C.1 ① ~~-----NOTE----- Place in toxic gas protection mode if automatic transfer to toxic gas mode inoperable. ----------~~ Place OPERABLE CREFS ~~CREACS~~ train in ~~emergency radiation protection mode~~ ① operation. OR	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<DOC M.2> C. (continued) 4 D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	~~C.2.1 Suspend CORE ALTERATIONS.~~ ~~AND~~ C.2.2 D.1 Suspend movement of irradiated fuel assemblies.	~~Immediately~~ Immediately
<3.7.7 MODES 5 and 6 Act b> D. E. Two CREFS CREACS trains inoperable [in MODES 5 and 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS]. <DOC M.3>	D.1 E.1 Suspend CORE ALTERATIONS. AND D.2 E.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
<DOC A.2> F. E. Two CREFS CREACS trains inoperable in MODE 1, 2, 3, or 4.	E.1 F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
<4.7.7.a> SR 3.7.11.1	Operate each CREFS CREACS train for [~~≥ 10 continuous hours with heaters operating or (for systems without heaters)~~ ≥ 15 minutes]. 2	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
<4.7.7.b>	SR 3.7.11.2	CREFS Perform required CREACS filter testing in accordance with [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
<4.7.7.d.2>	SR 3.7.11.3	CREFS Verify each CREACS train actuates on an actual or simulated actuation signal.	[18] months
<4.7.11.d.3> <DOC L.5>	SR 3.7.11.4	CREFS Verify one CREACS train can maintain a positive pressure of ≥ [0.125] inches water gauge, relative to the adjacent [area] during ~~the~~ emergency radiation state of the emergency mode of operation at a emergency ventilation flow rate of ≤ [3000] 1000 cfm. 2	[18] months on a STAGGERED TEST BASIS

2

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.11
BASES MARK UP

B 3.7 PLANT SYSTEMS Essential Filtration (CREFS) 2

B 3.7.11 Control Room ~~Emergency Air Cleanup~~ System ~~(CREACS)~~

BASES

BACKGROUND

CREFS

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

CREFS 2

The ~~CREACS~~ consists of two independent, redundant trains that recirculate and filter the control room air. Each train consists of a prefilter ~~and demister~~, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodine), and a fan. Ductwork, ~~valves or~~ dampers, and instrumentation also form part of the system~~, as do demisters that remove water droplets from the air stream~~. A second bank of HEPA filters follows the adsorber section to collect carbon fines~~, and to back up the main HEPA filter bank if it fails~~. 2 2

CREFS 2

The ~~CREACS~~ is an emergency system, ~~part 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~~ HVAC to the control room is isolated, and the stream of ventilation air is mixed with outside air and recirculated through the filter trains of the system. The prefilters ~~and 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.~~ 2 2

~~Actuation of the CREACS places the system into either of two separate states 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~~ Actuation of CREFS recirculation of control room air mixed with outside air through the redundant trains of HEPA and charcoal filters. The ~~emergency radiation state~~ CREFS initiates pressurization and filtered ventilation of the air supply to the control room. 2

(continued)

BASES

BACKGROUND (continued)

Outside air is filtered, [diluted with building air from the electrical equipment and cable spreading rooms,] and then 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 building. The actions taken in the toxic gas isolation state are the same, except that the signal switches control room ventilation to an isolation mode, preventing outside air from entering the control room. (2)

(5) 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. CREFS

is designed to (2)

(2) ≥0.125 A single train ~~[will]~~ pressurize the control room to ~~[about 0.125]~~ inches water gauge, ~~and provides an air exchange rate in excess of 25% per hour~~. The ~~CREACS~~ CREFS operation in maintaining the control room habitable is discussed in the FSAR, Section ~~[9.4]~~ 6.4 (Ref. 1). (2) (2)

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 ~~CREACS~~ CREFS is designed in accordance with Seismic Category I requirements. (2)

The ~~CREACS~~ 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

The ~~CREACS~~ 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. (2)

The ~~CREACS~~ CREFS provides airborne radiological protection for the control room operators, as demonstrated by the control room

(continued)

BASES 2

APPLICABLE SAFETY ANALYSES (continued)

UFSAR 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.~~

Toxic gases are not stored or used onsite in quantities sufficient to necessitate control room protection, as required by Regulatory Guide 1.78. 2

In addition, nearby industrial, military, and transportation facilities present no hazard to the operation of PVNGS, and there are no site-related design basis events due to accidents at those facilities (Ref 6).

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

The ~~CREACS~~ CREFS 2 satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii).

LCO 2

Two independent and redundant trains of the ~~CREACS~~ CREFS 2 are required to be OPERABLE to ensure that at least one is available, assuming that a single failure disables the other train. Total system failure could result in a control room operator receiving a dose in excess of 5 rem whole body or its equivalent in the event of a large radioactive release.

2 CREFS The ~~CREACS~~ is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both trains. A ~~CREACS~~ CREFS 2 train is considered OPERABLE when the associated:

a. Fan is OPERABLE;

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

2 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.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, 3, and 4, the CREACS CREFS must be OPERABLE to limit operator exposure during and following a DBA. 2

In MODES [5 and 6], the CREACS CREFS is required to cope with the release from a rupture of ~~an outside~~ a waste gas tank. 4

During movement of irradiated fuel assemblies ~~[and CORE ALTERATIONS]~~, the CREACS CREFS must be OPERABLE to cope with the release from a fuel handling accident. 3 2

Refer to LCO 3.0.6 and the SFDP (Specification 5.5.15) to determine OPERABILITY requirements of supporting systems.

ACTIONS

A.1 2

With one CREACS CREFS train inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREACS CREFS subsystem is adequate to perform control room radiation protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CREACS CREFS train could result in loss of CREACS CREFS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining train to provide the required capability. 2 2

B.1 and B.2 2

If the inoperable CREACS CREFS cannot be restored to OPERABLE status within the required Completion Time in MODE 1, 2, 3, or 4, the unit must be placed in a MODE that minimizes the 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.

C.1 ~~, C.2.1, and C.2.2~~ 2

~~Required Action C.1 is modified by a Note indicating to place the system in the emergency radiation protection mode if the automatic transfer to emergency mode is inoperable.~~

(continued)

ACTIONS

C.1, ~~C.2.1, and C.2.2~~ (continued)

In MODE 5 or 6, ~~or during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS]~~, if Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE ~~CREACS~~ CREFS train must be immediately placed in ~~the emergency mode of~~ operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected. (2)

D.1

During movement of irradiated fuel assemblies, if Required Action A.1 cannot be completed within the required completion time, immediate action must be taken to (4)

~~An alternative to Required Action A.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 the accident risk. This does not preclude the movement of fuel assemblies to a safe position.

E.1 and E.2

~~D.1 and D.2~~ (2)

When ~~[in~~ MODES 5 and 6, or~~]~~ during movement of irradiated fuel assemblies ~~[, or during CORE ALTERATIONS]~~, with two ~~CREACS~~ 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 the accident risk. This does not preclude the movement of fuel to a safe position. (2)

F.1

~~E.1~~

If both ~~CREACS~~ CREFS trains are inoperable in MODE 1, 2, 3, or 4, the ~~CREACS~~ 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. (2)

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe,

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1 (continued)

testing each train once every month provides an adequate check on 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.]~~ is required ② The 31 day Frequency is based on the known reliability of the equipment, and the two train redundancy available.

SR 3.7.11.2

This SR verifies that the required CREFS ② ~~CREACS~~ CREFS testing is performed in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)~~]~~. The ~~CREACS~~ filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3). The ~~[~~VFTP~~]~~ includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the ~~[~~VFTP~~]~~.

SR 3.7.11.3

This SR verifies each CREFS ② ~~CREACS~~ train starts and operates on an actual or simulated actuation signal. The Frequency of ~~[~~18~~]~~ months is consistent with that specified in Reference 3.

SR 3.7.11.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the ~~CREACS~~ CREFS ②. During the ~~emergency radiation state of the emergency mode of~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.11.4 (continued)

2

CREFS

operation, the CREACS 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 CREACS is designed to maintain this positive pressure with one train at an ~~emergency~~ ventilation flow rate of [3000] cfm. The Frequency of [18] months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800, Section 6.4 (Ref. 4). The ventilation flowrate is the outside makeup air flowrate.

2 CREFS

≤ 1000

REFERENCES

1. ~~FSAR~~ UFSAR, Section [9.4]. 6.4
2. ~~FSAR~~ UFSAR, Chapter [15].
3. Regulatory Guide 1.52 (Rev. 2).
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.
5. UFSAR, Section 9.4
6. UFSAR, Section 2.2

2

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.11

1. NUREG-1432 LCO 3.7.11 Required Action C.1 is modified by a Note which requires placing the CREFS in toxic gas protection mode if automatic transfer to the toxic gas mode is inoperable. ITS LCO 3.7.11 does not contain this Note. PVNGS does not require protection from toxic gas since the quantities of these materials are such that control room habitability will not be compromised by a release. The Control Room Essential Ventilation Isolation System is manually actuated from the control room. There are no requirements in the CTS to activate CREVIAS. Since the radiation protection mode of CREFS is the only mode of operation required by Technical Specifications, unnecessary verbiage has been removed from ITS SR 3.7.11.4 to enhance clarity. This change is consistent with current plant design and operation.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

4. NUREG-1432 LCO 3.7.11 Action C contains alternative Required Actions for multiple Conditions. This format allows selection of required Actions which do not necessarily place the plant in a safer condition or exit the Applicability. ITS 3.7.11 separates the Conditions into Actions C and D such that the Required Actions either place the unit is a safer condition by eliminating failure of equipment to start as a failure mode or exiting the Applicability by suspending movement of irradiated fuel assemblies.

PVNGS CTS
SPECIFICATION 3.7.11
MARK UP

Specification 3.7.11
(3.7.11 / 3.7.12)

A.1

3.7 PLANT SYSTEMS

3.7.11 ~~3/4.7.7~~ CONTROL ROOM ESSENTIAL FILTRATION SYSTEM

~~LIMITING CONDITION FOR OPERATION~~

LCO 3.7.11 ~~3.7.7~~ Two ~~independent~~ control room essential filtration ~~systems~~ trains shall be OPERABLE.

APPLICABILITY: ~~All~~ MODES 1, 2, 3, 4, 5, and 6, During movement of irradiated fuel assemblies, M.1

ACTION:

MODES 1, 2, 3, and 4:

ACT A — With one control room essential filtration ~~system~~ train inoperable, restore the inoperable ~~system~~ train to OPERABLE status within 7 days

ACT B — or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACT F — With two CREFS trains inoperable in MODES 1, 2, 3, and 4, immediately enter LCO 3.0.3. A.2

MODES 5 and 6, or during movement of irradiated fuel assemblies M.1:

ACT A — a. With one control room essential filtration ~~system~~ train inoperable, restore the inoperable ~~system~~ train to OPERABLE status within 7 days

ACT C — or initiate and maintain operation of the remaining OPERABLE control room essential filtration ~~system~~ train. M.2

ACT D — suspend movement of irradiated fuel immediately.

ACT E — b. With both control room essential filtration ~~systems~~ trains inoperable, ~~or with the OPERABLE control room essential filtration system, required to be OPERABLE by ACTION a., not capable of being powered by an OPERABLE emergency power source,~~ L.1 suspend all operations involving CORE ALTERATIONS ~~or positive reactivity changes~~ L.4 AND suspend movement of irradiated fuel assemblies immediately M.3

SURVEILLANCE REQUIREMENTS

~~4.7.7 Each control room essential filtration system shall be demonstrated OPERABLE:~~

SR 3.7.11.1 — a. At least once per 31 days ~~on a STAGGERED TEST BASIS by~~ L.2 ~~initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verify~~ing that the system operates for at least 15 minutes. A.4

SR 3.7.11.2 — ~~b.~~ ~~At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:~~

Perform required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP). A.3

Specification 3.7.11
(3.7.11 / 5.0 / 3.7.12)

SURVEILLANCE REQUIREMENTS (Continued)

ITS 5.0

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 28,600 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*.

3. Verifying a system flow rate of 28,600 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 28,600 cfm ± 10%.

ITS 5.0

ITS 3.7.11

Each 18 months

SR 3.7.11.3 — 2. Verifying that on a ~~Control Room Essential Filtration~~ Actuation Signal ~~and on a SIAS~~, the system ~~is automatically placed into a filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks~~. actuates an actual or simulated L.5 LA.1 L.3

Each 18 months on a STAGGERED TEST BASIS

SR 3.7.11.4 — 3. Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8-inch Water Gauge relative to adjacent areas during system operation at a makeup flow rate to the control room of less than or equal to 1000 cfm.

ITS 3.7.11

ITS 3.7.12

4. Verifying that the emergency chilled water system will maintain the control room environment at a temperature less than or equal to 80°F for a period of 30 minutes.

*ANSI N509-1980 is applicable for this specification.

DISCUSSION OF CHANGES
SPECIFICATION 3.7.11

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.7.7 does not contain an Action for two CREFS trains inoperable in Modes 1, 2, 3, and 4. ITS LCO 3.7.11 Action F requires that with two CREFS trains inoperable in Modes 1, 2, 3, and 4, LCO 3.0.3 must be entered immediately. The Bases for CTS 3.0.3 states in part, "Specification 3.0.3 establishes the shutdown ACTION requirements that must be implemented when a Limiting Condition for Operation is not met and the condition is not specifically addressed by the associated ACTION requirements. ...Since there is no Action specified for two inoperable CREFS trains in Modes 1, 2, 3, and 4 specified in CTS 3.7.7, Specification 3.0.3 must be entered in this condition. Practical application of both the CTS and ITS result in the same Actions being taken. This change does not impact safety and is consistent with NUREG-1432.

A.3 CTS 4.7.7.b states in part, "At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by..." ITS SR 3.7.11.2 states, "Perform required CREFS filter testing in accordance with Ventilation Filter Testing Program (VFTP). The requirements for testing of all TS related ventilation filters is being consolidated in the VFTP. See DOCs for ITS 5.0 for discussion of changes to testing requirements. This change does not impact safety and is consistent with NUREG-1432.

A.4 CTS 4.7.7.a requires that the CREFSs be started from the control room for monthly test of operation. ITS SR 3.7.11.1 does not specify how operation of the CREFSs is to be initiated. The control room handswitch is the only means of starting the CREFSs other than use of a simulated actuation signal. It is undesirable to cause a system actuation for monthly testing and since system performance does not depend on the means of initiating system operation, removal of this requirement does not result in a technical change. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3/4.7.7 Applicability is all Modes. ITS 3.7.11 is Applicable in Modes 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies. All Modes is considered to be Modes 1, 2, 3, 4, 5, and 6, so ITS 3.7.11 is more restrictive than CTS 3/4.7.7 in that the CREFS is required to be Operable during movement of irradiated fuel assemblies in addition to all Modes. The additional OPERABILITY requirements are necessary to protect control room personnel from the consequences of a fuel handling accident when there is no fuel in the reactor vessel. The applicability of the Modes 5 and 6 Actions contained in CTS 3.7.7 Modes 5 and 6 Action a and Action b, and ITS LCO 3.7.11 Action C have been changed to include the other conditions stated in the Applicability. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.2 CTS 3.7.7 does not include appropriate Actions for the Condition, "...during movement of irradiated fuel assemblies." ITS LCO 3.7.11 Action D requires that the movement of irradiated fuel assemblies be suspended. Addition of the Actions for suspension of movement of irradiated fuel assemblies assures control room habitability in the case of a fuel handling accident. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.3 CTS 3.7.7 Modes 5 and 6 Action b states in part, "...suspend all operations involving CORE ALTERATIONS or positive reactivity changes." ITS LCO 3.7.11 Action E requires suspending CORE ALTERATIONS and movement of irradiated fuel assemblies. Adding the requirement to suspend movement of irradiated fuel assemblies assures control room habitability by eliminating the possibility of a fuel handling accident outside the reactor vessel. This change is necessary due to the change in Applicability. See DOC M.1 for additional discussion. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 4.7.1.1.d.2 states in part, "...is automatically placed into a filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks." These details are relocated to the Bases. ITS SR 3.7.11.3 states, "Verify each CREFS train actuates on an actual or simulated actuation signal." Actuation of the CREFS directs flow through the HEPA filters and charcoal adsorber banks by design. It is not necessary to state these elements of the basic system design in the SRs. This requirement is not required to determine the OPERABILITY of the CREFS and therefore is being relocated to the Bases section.

Any change to the requirements in the Bases will be governed by the provisions of the Technical Specification Bases Control Program. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the Bases is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.7.7 Mode 5 and 6 Action b states in part, "With both control room essential filtration systems inoperable, or with the OPERABLE control room essential filtration system required to be OPERABLE by Action a., not capable of being powered by an OPERABLE emergency power source..." ITS LCO 3.7.11 Action C does not require that the CREFS train placed in operation to comply with Required Action C.1 be capable of being powered from an Operable emergency power source. The definition of Operability contained in ITS 1.1 states in part, "A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency power ...that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). Since normal or emergency power may be used to establish OPERABILITY, the operating CREFS train need not be powered from an Operable emergency power source in order for it to fulfill its safety function. This change is consistent with NUREG-1432.

L.2 CTS 4.7.7.a requires testing of the CREFSs every 31 days on a STAGGERED TEST BASIS. ITS SR 3.7.11.1 does not require testing to be performed on a STAGGERED TEST BASIS. Testing on a STAGGERED TEST BASIS per the CTS is generally employed to identify generic degradation by essentially testing more frequently. The CREFS units are not subjected to severe environmental or operating conditions; therefore, there is no reason to believe that they would be subject to accelerated degradation of a generic nature. The 31 day frequency is adequate and is based on the known reliability of the equipment and the two train redundancy available. This change is consistent with NUREG-1432.

L.3 CTS 4.7.7.d.2 requires the CREFSs to be surveilled to assure automatic performance is acceptable when subjected to test actuation signals. ITS SR 3.7.11.3 allows the use of an actual or simulated actuation signal. This change allows actuation of these components for reasons other than Surveillances to be used to fulfill the Surveillance Requirements. In the case of an actual system actuation, PVNGS would have the option of restarting the Surveillance interval based on satisfactory response of the CREFS to the actuation signal, or to continue to perform the SRs according to the schedule dictated by the Frequency and the date of the previous performance. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change not impact on safety and is consistent with NUREG-1432.

L.4 CTS 3.7.7 Modes 5 and 6 Action b states in part, "...suspend all operations involving CORE ALTERATIONS or positive reactivity changes." ITS LCO 3.7.11 Action E does not require suspending positive reactivity changes. Positive reactivity changes due to movement of CEAs or fuel are required to be suspended by the requirement to suspend CORE ALTERATIONS and movement of irradiated fuel. Positive reactivity changes due to changes in boron concentration are allowed within the limits specified in the COLR. In Mode 6, boron concentration is controlled by ITS 3.9.1 which requires suspending positive reactivity additions with boron concentration not within limits. This change is consistent with NUREG-1432.

L.5 CTS 4.7.7.d.3 requires verification at least once per 18 months that the CREFS is capable of maintaining the control room at a positive pressure of greater than or equal to 1/8-inch water gauge relative to adjacent areas at a makeup flow rate of less than or equal to 1000 cfm. ITS SR 3.7.11.4 requires that this Surveillance be performed once per 18 months on a STAGGERED TEST BASIS. Changing the Frequency from once per 18 months to once per 18 months on a STAGGERED TEST BASIS results in testing only one train each refueling instead of both trains. This decrease in frequency is acceptable based on the separate SRs which are performed to verify proper function and actuation of individual components. The leaktight characteristics of the dampers are not expected to change significantly during the interval and the remaining seals are not train dependent. This frequency is consistent with the guidance of NUREG-0800. This change is consistent with NUREG-1432.

<u>TECHNICAL CHANGES - CTS CHANGES</u>

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.11

ADMINISTRATIVE CHANGES
(ITS 3.7.11 Discussion of Changes Labeled A.1, A.2, A.3 and A.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.11 Discussion of Changes Labeled (A.1, A.2, A.3 and A.4) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled M.1, M.2 and M.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled M.1, M.2 and M.3) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.11 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.11 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.7.7 Mode 5 and 6 Action b states in part, "With both control room essential filtration systems inoperable, or with the OPERABLE control room essential filtration system required to be OPERABLE by Action a., not capable of being powered by an OPERABLE emergency power source..." ITS LCO 3.7.11 Action C does not require that the CREFS train placed in operation to comply with Required Action C.1 be powered from an Operable emergency power source. The definition of Operability contained in ITS 1.1 states in part, "A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency power... that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). Since normal or emergency power may be used to establish OPERABILITY, the operating CREFS train need not be powered from an Operable emergency power source in order for it to fulfill its safety function. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement for the CREFS to be capable of being powered from an Operable emergency power bus. The ITS definition of OPERABLE - OPERABILITY allows the use of normal or emergency power to support OPERABILITY. This change is acceptable because the AC Sources TS contains adequate measures in conjunction with LCO 3.0.6 and the SFDP (reference Specification 5.5.15) to assure that no loss of safety function exists. The ability of the CREFS to meet the requirements of the safety analysis will be maintained even with a loss of power.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change removes the requirement for the CREFS to be capable of being powered from an Operable emergency power bus. The ITS definition of OPERABLE - OPERABILITY allows the use of normal or emergency power to support OPERABILITY. This change is acceptable because the AC Sources TS contains adequate measures in conjunction with LCO 3.0.6 and the SFDP (reference Specification 5.5.15) to assure that no loss of safety function exists. The ability of the CREFS to meet the requirements of the safety analysis will be maintained even with a loss of power.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement for the CREFS to be capable of being powered from an Operable emergency power bus. The ITS definition of OPERABLE - OPERABILITY allows the use of normal or emergency power to support OPERABILITY. This change is acceptable because the AC Sources TS contains adequate measures in conjunction with LCO 3.0.6 and the SFDP (reference Specification 5.5.15) to assure that no loss of safety function exists. The ability of the CREFS to meet the requirements of the safety analysis will be maintained even with a loss of power.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 4.7.7.a requires testing of the CREFSs every 31 days on a STAGGERED TEST BASIS. ITS SR 3.7.1.1 does not require testing to be performed on a STAGGERED TEST BASIS. Testing on a STAGGERED TEST BASIS is generally employed to identify generic degradation by essentially testing more frequently. The CREFS units are not subjected to severe environmental or operating conditions; therefore, there is no reason to believe that they would be subject to accelerated degradation of a generic nature. The 31 day frequency is adequate and is based on the known reliability of the equipment and the two train redundancy available. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.2) (continued)

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

The proposed change removes the requirement to perform the monthly functional test of the CREFS on a Staggered Test Basis. Testing on a Staggered Test Basis is specified to identify Operability concerns which may be generic in nature such as aging or degradation due to environment or operating practices. The CREFS components are not located in a harsh environment. Testing of the six CREFS trains at PVNGS (2 trains per unit) provides ample opportunity to identify generic type problems through the PVNGS corrective action process. The equipment root cause of failure analysis, performed as part of the process for significant problems, examines the applicability of the failure to other similar components.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.2) (continued)

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

The proposed change removes the requirement to perform the monthly functional test of the CREFS on a Staggered Test Basis. Testing on a Staggered Test Basis is specified to identify Operability concerns which may be generic in nature such as aging or degradation due to environment or operating practices. The CREFS components are not located in a harsh environment. Testing of the six CREFS trains at PVNGS (2 trains per unit) provides ample opportunity to identify generic type problems through the PVNGS corrective action process. The equipment root cause of failure analysis, performed as part of the process for significant problems, examines the applicability of the failure to other similar components.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change removes the requirement to perform the monthly functional test of the CREFS on a Staggered Test Basis. Testing on a Staggered Test Basis is specified to identify Operability concerns which may be generic in nature such as aging or degradation due to environment or operating practices. The CREFS components are not located in a harsh environment. Testing of the six CREFS trains at PVNGS (2 trains per unit) provides ample opportunity to identify generic type problems through the PVNGS corrective action process. The equipment root cause of failure analysis, performed as part of the process for significant problems, examines the applicability of the failure to other similar components.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.3 CTS 4.7.1.1.d.2 requires the CREFSs to be surveilled to assure automatic performance is acceptable when subjected to test actuation signals. ITS SR 3.7.11.3 allows the use of an actual or simulated actuation signal. This change allows actuation of these components for reasons other than Surveillances to be used to fulfill the Surveillance Requirements. In the case of an actual system actuation, PVNGS would have the option of restarting the Surveillance interval based on satisfactory response of the CREFS to the actuation signal, or to continue to perform the SRs according to the schedule dictated by the Frequency and the date of the previous performance. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change not impact on safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.3) (continued)

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

The proposed change allows verification of automatic system actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for CREFS SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the CREFS properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CREFS components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change allows verification of automatic system actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for CREFS SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the CREFS properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CREFS components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.3) (continued)

installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows verification of automatic system actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for CREFS SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the CREFS properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the CREFS components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.4 CTS 3.7.7 Modes 5 and 6 Action b states in part, "... suspend all operations involving CORE ALTERATIONS or positive reactivity changes." ITS LCO 3.7.11 Action E does not require suspending positive reactivity changes. Positive reactivity changes due to movement of CEAs or fuel are required to be suspended by the requirement to suspend CORE ALTERATIONS and movement of irradiated fuel. Positive reactivity changes due to changes in boron concentration are allowed within the limits specified in the COLR. In Mode 6, boron concentration is controlled by ITS 3.9.1 which requires suspending positive reactivity additions with boron concentration not within limits. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.4) (continued)

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

The proposed change modifies the Required Action for no CREFS Operable by removing the requirement to suspend all operations involving positive reactivity changes. The Actions require suspending Core Alterations and movement of irradiated fuel assemblies but changes in boron concentration are not addressed. Control of boron concentration is addressed separately by other Specifications. Since all means of positive reactivity changes are adequately addressed, removal of this requirement from the CREFS specification does not significantly impact safety.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the Required Action for no CREFS Operable by removing the requirement to suspend all operations involving positive reactivity changes. The Actions require suspending Core Alterations and movement of irradiated fuel assemblies but changes in boron concentration are not addressed. Control of boron concentration is addressed separately by other Specifications. Since all means of positive reactivity changes are adequately addressed, removal of this requirement from the CREFS specification does not significantly impact safety.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.4) (continued)

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

The proposed change modifies the Required Action for no CREFS Operable by removing the requirement to suspend all operations involving positive reactivity changes. The Actions require suspending Core Alterations and movement of irradiated fuel assemblies but changes in boron concentration are not addressed. Control of boron concentration is addressed separately by other Specifications. Since all means of positive reactivity changes are adequately addressed, removal of this requirement from the CREFS specification does not significantly impact safety.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.5)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.5 CTS 4.7.7.d.3 requires verification at least once per 18 months that the CREFS is capable of maintaining the control room at a positive pressure of greater than or equal to 1/8-inch water gauge relative to adjacent areas at a makeup flow rate of less than or equal to 1000 cfm. ITS SR 3.7.11.4 requires that this Surveillance be performed once per 18 months on a STAGGERED TEST BASIS. Changing the Frequency from once per 18 months to once per 18 months on a STAGGERED TEST BASIS results in testing only one train each refueling instead of both trains. This decrease in frequency is acceptable based on the separate SRs which are performed to verify proper function and actuation of individual components. The leaktight characteristics of the dampers are not expected to change significantly during the interval and the remaining seals are not train dependent. This frequency is consistent with the guidance of NUREG-0800. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.5) (continued)

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

The proposed change modifies the requirement to test the control room envelop by adding the requirement to test on a Staggered Test Basis. This change effectively doubles the interval for testing of each CREFS train. The decrease in frequency is acceptable since the function of each component which must actuate to seal the envelop is tested separately. The sealing capability of doors and other seals which are not train related will be tested every 18 months. The sealing capability of the train related dampers is not expected to degrade significantly as the CREFS is not located in a harsh environment nor is it subject to frequent actuation.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the requirement to test the control room envelop by adding the requirement to test on a Staggered Test Basis. This change effectively doubles the interval for testing of each CREFS train. The decrease in frequency is acceptable since the function of each component which must actuate to seal the envelop is tested separately. The sealing capability of doors and other seals which are not train related will be tested every 18 months. The sealing capability of the train related dampers is not expected to degrade significantly as the CREFS is not located in a harsh environment nor is it subject to frequent actuation.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.11 Discussion of Changes Labeled L.5) (continued)

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

The proposed change modifies the requirement to test the control room envelop by adding the requirement to test on a Staggered Test Basis. This change effectively doubles the interval for testing of each CREFS train. The decrease in frequency is acceptable since the function of each component which must actuate to seal the envelop is tested separately. The sealing capability of doors and other seals which are not train related will be tested every 18 months. The sealing capability of the train related dampers is not expected to degrade significantly as the CREFS is not located in a harsh environment nor is it subject to frequent actuation.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.12
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.12 Control Room Emergency Air Temperature Control System (CREATCS)

<3.7.7> LCO 3.7.12 Two CREATCS trains shall be OPERABLE.

<DOC M.1> APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6,]
During movement of irradiated fuel assemblies,
[During CORE ALTERATIONS].

2

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.7 MODES 1,2,3,4 ACT MODES 5,6 ACT a.>	A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days
<3.7.7 MODES 1,2,3,4 ACT>	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. AND B.2 Be in MODE 5.	6 hours 36 hours
<3.7.7 MODES 5 and 6 ACT a>	C. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS]. 2	C.1 Place OPERABLE CREATCS train in operation. OR C.2.1 Suspend CORE ALTERATIONS. AND	Immediately Immediately
<DOC M.3>	D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies. 3	C.2.2 D.1 Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.7 MODES 5and6 ACTb> E. ~~D.~~ Two CREATCS trains inoperable ~~in MODE 5 or 6, or~~ during movement of irradiated fuel assemblies ~~, or during CORE ALTERATIONS~~. (2) <DOC M.3>	E.1 ~~D.1~~ Suspend CORE ALTERATIONS. AND ~~D.2~~ E.1 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
<DOC A.2> ~~E.~~ F. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	~~E.1~~ F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<4.7.7.d.4> <DOC M.2> SR 3.7.12.1 Verify each CREATCS train has the capability to remove the assumed heat load.	[18] months

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.7.12

BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.12 Control Room Emergency Air Temperature Control System (CREATCS)

BASES

BACKGROUND

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

The CREATCS consists of two independent, 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. 2

2

which is part of the Control Room Essential Filtration System (CREFS)

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 to maintain the control room temperature is discussed in the ~~FSAR~~, Section ~~6.4~~ (Ref. 1). 80 2

UFSAR 9.4 2

APPLICABLE SAFETY ANALYSES

The design basis of the CREATCS is to maintain temperature of the control room environment throughout 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, assuming 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, considering equipment heat loads and personnel occupancy requirements, to ensure equipment OPERABILITY. 2 80

The CREATCS satisfies Criterion 3 of ~~the NRC Policy Statement~~.

10CFR 50.36 (c)(2)(ii)

(continued)

BASES (continued)

LCO

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 disables the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

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

APPLICABILITY

In MODES 1, 2, 3, 4, ~~[5~~, and 6,~~]~~ and during movement of irradiated fuel assemblies ~~[and CORE ALTERATIONS]~~, the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment OPERABILITY requirements following isolation of the control room.

2 ~~In MODES 5 and 6, CREATCS may not be required for those facilities which do not require automatic control room isolation.~~

1 Refer to LCO 3.0.6 and the SFDP (Specification 5.5.14) to determine the OPERABILITY requirements of supporting systems.

ACTIONS

A.1

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. The 30 day Completion Time is reasonable, based on the low probability of an event occurring requiring control room isolation, consideration that the remaining train can provide the required capabilities, and the alternate safety or nonsafety related cooling means that are available.

B.1 and B.2

In MODE 1, 2, 3, or 4, when Required Action A.1 cannot be completed within the required Completion Time, the unit must be placed in a MODE that minimizes the accident risk. To

(continued)

ACTIONS

B.1 and B.2 (continued)

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.

~~C.1, C.2.1, and C.2.2~~

In MODE 5 or 6, or during movement of irradiated fuel assemblies ~~[, or during CORE ALTERATIONS]~~, when Required Action A.1 cannot be completed 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 any active failure will be readily detected.

D.1

During movement of irradiated fuel assemblies, if Required Action A.1 cannot be completed within the required Completion Time, immediate action must be taken to

3

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

2

~~D.1 and D.2~~ E.1 and E.2

In ~~[MODE 5 or 6, or]~~ during movement of irradiated fuel assemblies ~~[, or during CORE ALTERATIONS]~~, 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~~ actuation of CREATCS. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

2

~~E.1~~ F.1

If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4, the CREATCS may not be capable of performing the intended

(continued)

BASES

ACTIONS

F.1 E.1 (continued)

function and the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

This SR verifies that the heat removal capability of the system is sufficient to meet design requirements. This SR consists of a combination of testing and calculations. An [18] month Frequency is appropriate, since significant degradation of the CREATCS is slow and is not expected over this time period.

REFERENCES UFSAR 1. [FSAR] Section [6.4]. 9.4

(2)

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.12

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

3. NUREG 1432 LCO 3.7.12 Action C contains alternative Required Actions for Multiple Conditions. This format allows selection of Required Actions which do not necessarily place the plant in a safer condition or exit the applicability. ITS 3.7.12 separates Conditions into Actions C and D such that the proper Required Actions are applied for each Condition.

PVNGS CTS
SPECIFICATION 3.7.12
MARK UP

Specification 3.7.12
(3.7.11 / 3.7.12)

A.1

3.7 **PLANT SYSTEMS** Emergency Air Temperature Control System (CREATCS)

3.7.12 ~~3/4.7.7~~ CONTROL ROOM ~~ESSENTIAL FILTRATION SYSTEM~~

~~LIMITING CONDITION FOR OPERATION~~ air temperature control trains

LCO 3.7.12 ~~3.7.7~~ Two independent control room ~~essential filtration~~ systems shall be OPERABLE.

MODES 1,2,3,4,5, and 6 During movement of irradiated fuel assemblies, M.1

APPLICABILITY: ~~ALL MODES.~~

ACTION:

MODES 1, 2, 3, and 4: CREATCS train 30 L.3

ACT A With one ~~control room essential filtration system~~ train inoperable, restore the inoperable ~~system~~ to OPERABLE status within ~~7~~ days or be in at least HOT

ACT B STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A.2

ACT F With two CREATCS trains inoperable, immediately enter LCO 3.0.3.

MODES 5 and 6: or during movement of irradiated fuel assemblies M.1

ACT A ~~a.~~ With one ~~control room essential filtration system~~ CREATCS train inoperable, restore the inoperable ~~system~~ train to OPERABLE status within ~~7~~ 30 days or initiate L.3

ACT C and maintain operation of the remaining OPERABLE ~~control room essential filtration system~~.

ACT D suspend movement of irradiated fuel assemblies immediately M.4

ACT E ~~b.~~ With both ~~control room essential filtration systems~~ CREATCS trains inoperable, ~~or with the OPERABLE control room essential filtration system, required to be OPERABLE by ACTION a., not capable of being powered by an OPERABLE emergency power source,~~ suspend all operations involving CORE ALTERATIONS ~~or positive reactivity changes~~. L.1

L.2 AND suspend movement of irradiated fuel assemblies immediately. M.3

ITS 3.7.12 SURVEILLANCE REQUIREMENTS

ITS 3.7.11

4.7.7 Each control room essential filtration system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

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

Specification 3.7.12
(3.7.12/3.7.11/5.5.11)

FOR INFORMATION ONLY

SURVEILLANCE REQUIREMENTS (Continued)

ITS 5.5.11

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 28,600 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*.

3. Verifying a system flow rate of 28,600 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978*, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978*.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 28,600 cfm ± 10%.

ITS 5.5.11

ITS 3.7.11

2. Verifying that on a Control Room Essential Filtration Actuation Signal and on a SIAS, the system is automatically placed into a filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks.

3. Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8-inch Water Gauge relative to adjacent areas during system operation at a makeup flow rate to the control room of less than or equal to 1000 cfm.

ITS 3.7.11

ITS 3.7.12

SR 3.7.12.1 — A. ~~Verifying that the emergency chilled water system will maintain the control room environment at a temperature less than or equal to 80°F for a period of 30 minutes.~~

Once per 18 months verify each CREATCS train has the capability to remove the assumed heat load. (M.2)

ITS 3.7.12

ITS 5.5.11 *ANSI N509-1980 is applicable for this specification.

Specification 3.7.12

LA.1

3/4.7.12 CONTROL ROOM AIR TEMPERATURE

LIMITING CONDITION OF OPERATION

3.7.12 The control room air temperature shall be maintained less than or equal to 80°F.

APPLICABILITY: ALL MODES

ACTION:

With the control room air temperature greater than 80°F, reduce the air temperature to less than or equal to 80°F within 30 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours..

SURVEILLANCE REQUIREMENTS

4.7.12 At least once per 12 hours, verify that the control room air temperature is less than or equal to 80°F.

DISCUSSION OF CHANGES
SPECIFICATION 3.7.12

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 3.7.7 does not contain an Action for two CREATCS trains inoperable in Modes 1, 2, 3, and 4. ITS LCO 3.7.12 Action F requires that with two CREATCS trains inoperable in Modes 1, 2, 3, and 4, LCO 3.0.3 must be entered immediately. The Bases for CTS 3.0.3 states in part, "Specification 3.0.3 establishes the shutdown ACTION requirements that must be implemented when a Limiting Condition for Operation is not met and the condition is not specifically addressed by the associated ACTION requirements..." Since there is no Action specified for two inoperable CREATCS trains in Modes 1, 2, 3, and 4 specified in CTS 3.7.7, Specification 3.0.3 must be entered in this condition. Practical application of both the CTS and ITS result in the same Actions being taken. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3/4.7.7 Applicability is all Modes. ITS 3.7.12 is Applicable in Modes 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies. All Modes is considered to be Modes 1, 2, 3, 4, 5, and 6, so ITS 3.7.12 is more restrictive than CTS 3/4.7.7 in that the CREATCS is required to be Operable during movement of irradiated fuel assemblies in addition to all Modes. The additional OPERABILITY requirements are necessary to protect control room personnel from the consequences of a fuel handling accident when there is no fuel in the reactor vessel. The applicability of the Modes 5 and 6 Actions contained in CTS 3.7.7 Modes 5 and 6 Action a and Action b, and ITS LCO 3.7.12 Action D have been changed to include the other conditions stated in the Applicability. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.2 CTS 4.7.7.d.4 requires verification every 18 months, that the emergency chilled water system will maintain the control room environment at a temperature less than or equal to 80°F for a period of 30 minutes. ITS SR 3.7.12.1 requires verification every 18 months that each CREATCS train has the capability to remove the assumed heat load. ITS SR 3.7.12.1 is a design bases test which verifies that the CREATCS will preserve the conditions assumed in the safety analysis. The conditions include maintaining the control room temperature between 70°F and 80°F during the worst case historical meteorological conditions. CTS 4.7.7.d.4 does not specify the conditions during which the Surveillance must be performed. Since this Surveillance has an 18 month frequency, it is typically performed during refueling outages. Refueling outages are scheduled for spring and fall months to avoid impacting generation during months of peak load. For this reason, CTS 4.7.7.d.4 does not verify that the system will function as required at the conditions assumed in the safety analyses. Incorporation of these requirements is a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.3 CTS 3.7.7 Modes 5 and 6 Action b states in part, "...suspend all operations involving CORE ALTERATIONS or positive reactivity changes." ITS LCO 3.7.12 Action D and E requires suspending CORE ALTERATIONS and movement of irradiated fuel assemblies. Adding the requirement to suspend movement of irradiated fuel assemblies assures control room habitability by eliminating the possibility of a fuel handling accident outside the reactor vessel. This change is necessary due to the change in Applicability. See DOC M.1 for additional discussion. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

M.4 CTS 3.7.7 does not contain Actions for Condition, "...During movement of irradiated fuel assemblies." ITS LCO 3.7.12 Action D requires that movement of irradiated fuel assemblies be suspended. Addition of the Actions for suspension of movement of irradiated fuel assemblies assures control room habitability by removing the initiators of a fuel handling accident. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change does not impact safety and is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS LCO 3.7.12 requires the control room air temperature to be maintained less than or equal to 80°F in all modes. The ACTION for this LCO requires the control room air temperature to be reduced to 80°F or less within 30 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. CTS SR 4.7.12 requires the verification of the control room air temperature as 80°F or below at least once per 12 hours. Although ITS 3.7.12 contains requirements for the control room air temperature control system, the ITS do not contain requirements for the control room temperature. Instead, the ITS 3.7.12 BASES specify that the control room temperature will be maintained between 70°F and 80°F. This operational requirement is not necessary in order to determine the OPERABILITY of a system, component or structure and therefore is being relocated to the TRM.

Any change to the requirements in the TRM will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of control and is and administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the TRM is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.7.7 Mode 5 and 6 Action b states in part, "With both control room essential filtration systems inoperable, or with the OPERABLE control room essential filtration system required to be OPERABLE by Action a., not capable of being powered by an OPERABLE emergency power source..." ITS LCO 3.7.12 Action C does not require that the CREATCS train placed in operation to comply with Required Action C.1 be capable of being powered from an Operable emergency power source. The definition of Operability contained in ITS 1.1 states in part, "A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency power ...that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). Since normal or emergency power may be used to establish OPERABILITY, the operating CREATCS train need not be powered from an Operable emergency power source in order for it to fulfill its safety function. This change is consistent with NUREG-1432.

L.2 CTS 3.7.7 Modes 5 and 6 Action b states in part, "...suspend all operations involving CORE ALTERATIONS or positive reactivity changes." ITS LCO 3.7.12 Action E does not require suspending positive reactivity changes. Positive reactivity changes due to movement of CEAs or fuel are required to be suspended by the requirement to suspend CORE ALTERATIONS and movement of irradiated fuel. Positive reactivity changes due to changes in boron concentration are allowed within the limits specified in the COLR. In Mode 6, boron concentration is controlled by ITS 3.9.1 which requires suspending positive reactivity additions with boron concentration not within limits. This change is consistent with NUREG-1432.

L.3 CTS 3.7.7 Actions for one train of CREFS inoperable contains an allowed outage time of seven days to restore OPERABILITY prior to entering into other Actions. ITS 3.7.12 Action A allows 30 days to restore an inoperable CREATCS train to Operable status. The control room filtration function and the control room air temperature control function are both supplied by the same equipment. The OPERABILITY requirements for this equipment are contained in one CTS Specification (CTS 3.7.3), although there is also a separate CTS Specification (CTS 3/4.7.12) for control room air temperature. CTS 3/4.7.12 requires the control room temperature to be maintained ≤80°F and allows 30 days to restore temperature to within limits if it exceeds 80°F. Separating the filtration function and air temperature control functions of the control room HVAC system into two ITS Specifications allows Action times commensurate with the Conditions entered. The 30 days is consistent with the Completion Time allowed by CTS 3.7.12 to restore control room temperature to less than 80°F. The 30 day allowed outage time contained in ITS 3.7.12 is also acceptable based on the availability of the normal control room HVAC. This change does not impact safety and is consistent with NUREG-1432.

L.4 Not used

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.12

ADMINISTRATIVE CHANGES
(ITS 3.7.12 Discussion of Changes Labeled A.1 and A.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.12 Discussion of Changes Labeled (A.1 and A.2) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled M.1, M.2, M.3 and M.4)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

<u>TECHNICAL CHANGES - MORE RESTRICTIVE</u>
(ITS 3.7.12 Discussion of Changes Labeled M.1, M.2, M.3 and M.4) (continued)

<u>Standard 2.</u>-- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

<u>Standard 3.</u>-- Does the proposed change involve a significant reduction in a margin of safety?

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.12 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.12 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.7.7 Mode 5 and 6 Action b states in part, "With both control room essential filtration systems inoperable, or with the OPERABLE control room essential filtration system required to be OPERABLE by Action a., not capable of being powered by an OPERABLE emergency power source ..." ITS LCO 3.7.12 Action C does not require that the CREATCS train placed in operation to comply with Required Action C.1 be powered from an Operable emergency power source. The definition of Operability contained in ITS 1.1 states in part, "A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency power... that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). Since normal or emergency power may be used to establish OPERABILITY, the operating CREATCS train need not be powered from an Operable emergency power source in order for it to fulfill its safety function. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement for the CREATCS to be capable of being powered from an Operable emergency power bus. The ITS definition of OPERABLE - OPERABILITY allows the use of normal or emergency power to support OPERABILITY. This change is acceptable because the AC Sources TS contains adequate measures in conjunction with LCO 3.0.6 and the SFDP (reference Specification 5.5.15) to assure that no loss of safety function exists. The ability of the CREATCS to meet the requirements of the safety analysis will be maintained even with a loss of power.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change removes the requirement for the CREATCS to be capable of being powered from an Operable emergency power bus. The ITS definition of OPERABLE - OPERABILITY allows the use of normal or emergency power to support OPERABILITY. This change is acceptable because the AC Sources TS contains adequate measures in conjunction with LCO 3.0.6 and the SFDP (reference Specification 5.5.15) to assure that no loss of safety function exists. The ability of the CREATCS to meet the requirements of the safety analysis will be maintained even with a loss of power.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement for the CREATCS to be capable of being powered from an Operable emergency power bus. The ITS definition of OPERABLE - OPERABILITY allows the use of normal or emergency power to support OPERABILITY. This change is acceptable because the AC Sources TS contains adequate measures in conjunction with LCO 3.0.6 and the SFDP (reference Specification 5.5.15) to assure that no loss of safety function exists. The ability of the CREATCS to meet the requirements of the safety analysis will be maintained even with a loss of power.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 3.7.7 Modes 5 and 6 Action b states in part, "... suspend all operations involving CORE ALTERATIONS or positive reactivity changes." ITS LCO 3.7.12 Action E does not require suspending positive reactivity changes. Positive reactivity changes due to movement of CEAs or fuel are required to be suspended by the requirement to suspend CORE ALTERATIONS and movement of irradiated fuel. Positive reactivity changes due to changes in boron concentration are allowed within the limits specified in the COLR. In Mode 6, boron concentration is controlled by ITS 3.9.1 which requires suspending positive reactivity additions with boron concentration not within limits. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.2) (continued)

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

The proposed change modifies the Required Action for no CREATCS Operable by removing the requirement to suspend all operations involving positive reactivity changes. The Actions require suspending Core Alterations and movement of irradiated fuel assemblies but changes in boron concentration are not addressed. Control of boron concentration is addressed separately by other Specifications. Since all means of positive reactivity changes are adequately addressed, removal of this requirement from the CREATCS specification does not significantly impact safety.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the Required Action for no CREATCS Operable by removing the requirement to suspend all operations involving positive reactivity changes. The Actions require suspending Core Alterations and movement of irradiated fuel assemblies but changes in boron concentration are not addressed. Control of boron concentration is addressed separately by other Specifications. Since all means of positive reactivity changes are adequately addressed, removal of this requirement from the CREATCS specification does not significantly impact safety.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.2) (continued)

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

The proposed change modifies the Required Action for no CREATCS Operable by removing the requirement to suspend all operations involving positive reactivity changes. The Actions require suspending Core Alterations and movement of irradiated fuel assemblies but changes in boron concentration are not addressed. Control of boron concentration is addressed separately by other Specifications. Since all means of positive reactivity changes are adequately addressed, removal of this requirement from the CREATCS specification does not significantly impact safety.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.3 CTS 3.7.7 Actions for one train of CREFS inoperable contains an allowed outage time of seven days to restore OPERABILITY prior to entering into other Actions. ITS 3.7.12 Action A allows 30 days to restore an inoperable CREATCS train to Operable status. The control room filtration function and the control room air temperature control function are both supplied by the same equipment. The OPERABILITY requirements for this equipment are contained in one CTS Specification, although there is a CTS Specification (CTS 3/4.7.12) for control room air temperature. CTS 3/4.7.12 requires the control room temperature to be maintained ≤ 80°F and allows 30 days to restore temperature to within limits if it exceeds 80°F. Separating the filtration function and air temperature control functions of the control room HVAC system into two ITS Specifications allows Action times commensurate with the Conditions entered. The 30 days is consistent with the Completion Time allowed by CTS 3.7.12 to restore control room temperature to less than 80°F. The 30 day allowed outage time contained in ITS 3.7.12 is also acceptable based on the availability of the normal control room HVAC. This change does not impact safety and is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.3) (continued)

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

The proposed change would increase the allowed outage time for one control room emergency air temperature control system to be inoperable from 7 days to 30 days. This change is acceptable because the 30 days is consistent with the Completion Time allowed by CTS 3.7.12 to restore control room temperature to less than 80°F. The 30 day allowed outage time contained in ITS 3.7.12 is also acceptable based on the availability of the normal control room HVAC.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change would increase the allowed outage time for one control room emergency air temperature control system to be inoperable from 7 days to 30 days. This change is acceptable because the 30 days is consistent with the Completion Time allowed by CTS 3.7.12 to restore control room temperature to less than 80°F. The 30 day allowed outage time contained in ITS 3.7.12 is also acceptable based on the availability of the normal control room HVAC.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.12 Discussion of Changes Labeled L.3) (continued)

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

The proposed change would increase the allowed outage time for one control room emergency air temperature control system to be inoperable from 7 days to 30 days. This change is acceptable because the 30 days is consistent with the Completion Time allowed by CTS 3.7.12 to restore control room temperature to less than 80°F. The 30 day allowed outage time contained in ITS 3.7.12 is also acceptable based on the availability of the normal control room HVAC.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.13
MARK UP

<DOC>
<CTS>

3

3.7 PLANT SYSTEMS

Engineered Safety Feature (ESF)

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

<3.7.8> LCO 3.7.13 Two ESF ~~ECCS~~ PREACS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.7.8 ACT> A. One ESF ~~ECCS~~ PREACS train inoperable.	A.1 Restore ESF ~~ECCS~~ PREACS train to OPERABLE status.	7 days
<3.7.8 ACT> B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<4.7.8.a> SR 3.7.13.1 Operate each ESF ~~ECCS~~ PREACS train for ~~≥ 10 continuous hours with the heater operating or (for systems without heaters)~~ ≥ 15 minutes. (1)	31 days

(continued)

<DOC>
<CTS> SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
<DOC A.2>	SR 3.7.13.2 Perform required ~~ECCS~~ ESF PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
<4.7.8.d.2>	SR 3.7.13.3 Verify each ~~ECCS~~ ESF PREACS train actuates on an actual or simulated actuation signal.	[18] months
<DOC M.2>	SR 3.7.13.4 Verify one ~~ECCS~~ ESF PREACS train can maintain a (2) measurable negative pressure ~~≥ [ ] inches water gauge~~ relative to atmospheric pressure during ~~the~~ (3) ~~[post accident] mode of~~ operation at a flow rate of ~~≤ [20,000]~~ 6000 cfm ± 10%.	[18] months on a STAGGERED TEST BASIS
(3)	~~SR 3.7.13.5 Verify each ECCS PREACS filter bypass damper can be opened.~~	~~[18] months~~

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.7.13

BASES MARK UP

B 3.7 PLANT SYSTEMS

Engineered Safety Feature (ESF) 3

B 3.7.13 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)

BASES 3

BACKGROUND

ESF ESF 2

The ECCS PREACS filters air from the area of the active ECCS components during the recirculation phase of a loss of coolant accident (LOCA). 4 ~~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.~~ 3

ESF 2

The ECCS PREACS consists of two independent and redundant trains. shared with the fuel building 3 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.~~ 3 ~~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.~~ 3 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 (3 rooms) and lower region of the auxiliary building following receipt of a safety injection actuation signal ~~or coolant injection actuation signal~~. 3

3 ESF

The ECCS PREACS is a standby system, ~~parts of which may also operate during normal unit operations~~. The Reactor Auxiliary Building Main Ventilation (3 Normal HVAC) System provides normal cooling. During emergency operations, the ECCS (ESF 3) PREACS dampers are realigned and fans are started to initiate filtration. Upon receipt of the actuating Engineered Safety Feature Actuation System signal(s), normal air discharges from the ECCS pump room, the pump room is (ESF pump rooms are 3) 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,~~ 3 to prevent excessive loading of the HEPA filters and charcoal adsorbers.

(continued)

BASES

ESF 3 UFSAR

BACKGROUND (continued)

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), ~~as it may be used for normal, as well as post accident, atmospheric cleanup functions~~. The primary purpose of the heaters is to maintain the relative humidity at an acceptable level consistent with iodine removal efficiencies, as discussed in the Regulatory Guide 1.52 (Ref. 4).

3 9.4.2 3

3 ESF

APPLICABLE SAFETY ANALYSES

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 safety injection pump seal failure, during the recirculation mode. In such a case, the system limits the radioactive release to within 10 CFR 100 limits (Ref. 5)~~, or the NRC 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 is presented in Reference 3. The ECCS PREACS also actuates following a small break LOCA, requiring the unit to go into the recirculation mode of long term cooling and to clean up releases of smaller leaks, such as from valve stem packing.

ESF 3

The two types of system failures that are considered in the accident analysis are 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.

3 ESF envelope

3 ESF

The ECCS PREACS satisfies Criterion 3 of the NRC Policy Statement.

10 CFR 50.36(c)(2)(ii) 3

ESF

LCO

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

ESF envelope 3

(continued)

BASES

ESF 3

LCO (continued)

ECCS PREACS is considered OPERABLE when the individual components necessary to maintain the ECCS Pump Room filtration are OPERABLE in both trains. ESF 3

3 ESF

An ECCS 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,~~ prefilter 3 ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

3 In addition, the auxiliary building envelope below the 100 foot elevation must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

ESF 3

APPLICABILITY

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

ESF 3

In MODES 5 and 6, the ECCS PREACS is not required to be OPERABLE, since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

ESF 3

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. 3 ESF

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 reasonable, based on the low probability of a DBA occurring during this time period, and the consideration that the remaining train can provide the required capability.

(continued)

BASES

ACTIONS (continued)

B.1 and B.2 ESF 3

If the ECCS PREACS train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be 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 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. Since 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 for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated~~ for ≥ 15 minutes to demonstrates the function of the system.] The 31 day Frequency is based on the known reliability of equipment, and the two train redundancy available.

1 There is not expected to be any moisture buildup on the adsorbers and HEPA filters due to the low humidity at PVNGS (Ref. 7).

SR 3.7.13.2 ESF 3

This SR verifies that the required ECCS PREACS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The ECCS PREACS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4). The [VFTP] includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the [VFTP].

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.13.3

ESF 2

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 Regulatory Guide 1.52 (Ref. 4).

SR 3.7.13.4

3

For the purposes of testing, the term "measurable negative pressure" is defined as 10 times the minimum instrument reading.

This SR verifies the integrity of the ~~ECCS pump room enclosure~~ ESF envelope. 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 function 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 this negative pressure at a flow rate of ≤ [20,000] cfm from the ECCS pump room. The Frequency of [18] months is consistent with the guidance provided in the NUREG-0800, Section 6.5.1 (Ref. 6).

ESF 3 ESF envelope 3 2 ESF ESF envelope 3 6000 cfm 3

This test is conducted with the tests for filter penetration; thus, an [18] month Frequency, on a STAGGERED TEST BASIS is consistent with other filtration SRs.

3

~~SR 3.7.13.5~~

~~Operating the ECCS PREACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the bypass damper is verified if it can be closed. An [18] month Frequency is consistent with that specified in Reference 4.~~

REFERENCES

1. ~~FSAR~~ UFSAR, Section [6.5.1].
2. ~~FSAR~~ UFSAR, Section [9.4.5]. 1.4.2
3. ~~FSAR~~ UFSAR Section [15.6.5].
4. Regulatory Guide 1.52 (Rev. 2).

3

(continued)

BASES

REFERENCES (continued)

5. 10 CFR 100.11.

6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

7. UFSAR, Section 1.8

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.13

SPECIFICATION 3.7.13 - Engineered Safety Feature (ESF) Pump Room Exhaust Air Cleanup System (ESF PREACS)

1. NUREG 1432 SR 3.7.13.1 requires systems with heaters to be operated for ≥10 hours every 31 days with the heaters operating. ITS SR 3.7.13.1 requires the system to be operated for ≥15 min every 31 days. As stated in the PVNGS UFSAR, operation of the system for ≥15 minutes every 31 days is acceptable because no moisture buildup is expected on the adsorbers and HEPA filters due to the low humidity at PVNGS. Running the system for excessive periods of time in a dry and arid climate could lead to premature failure of the absorber media. Maintaining the operation of the system for ≥ 15 minutes is therefore acceptable and consistent with the current licensing basis at PVNGS.

2. SR 3.7.13.4 was changed to verify one ESF PREACS can maintain a measurable negative pressure (as opposed to a specific gauge reading). The measurable negative pressure acceptance criteria is defined in the BASES for this SR. The performance of this SR as revised will ensure proper airflow in the rooms.

3. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

4. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

PVNGS CTS
SPECIFICATION 3.7.13
MARK UP

Specification 3.7.13
(3.7.13 / 5.0)

3.7 PLANT SYSTEMS A.1

3.7.13 ~~3/4.7.8~~ ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

~~LIMITING CONDITION FOR OPERATION~~

LCO3.7.13 ~~3.7.8*~~ Two ~~independent~~ ESF pump room air exhaust cleanup ~~systems~~ trains shall be OPERABLE.

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

ACTION:

ACTA With one ESF pump room air exhaust cleanup ~~system~~ train inoperable, restore the inoperable ~~system~~ train to OPERABLE status within 7 days or be in at least HOT
ACTB STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

~~4.7.8 Each ESF pump room air exhaust cleanup system shall be demonstrated OPERABLE:~~

SR3.7.13.1 ~~a.~~ At least once per 31 days on a STAGGERED TEST BASIS by initiating from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes. L.1

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

SR3.7.13.2 Perform required ESF PREACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP). A.2

SR3.7.13.4 Verify one ESF PREACS train can maintain a measurable negative pressure relative to atmospheric pressure during operation at a flow rate of 6000 cfm ± 10%. M.2

~~*CAUTION - Reference Specification 3.9.12 page 3/4 9-14~~ A.3

3.7.13
5.0

Specification 3.7.13
(3.7.12/5.0)

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

A.2

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 6000 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.*

3. Verifying a system flow rate of 6000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.*

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm ± 10%.

ITS 5.0

ITS 3.7.13 SR 3.7.13.3 ~~2.~~ Verifying that the system starts on an SIAS ~~test~~ signal. or L.2

ITS 5.0

A.2

e. After each complete or partial replacement of an HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.0% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm ± 10%.

*ANSI N509-1980 is applicable for this specification.

DISCUSSION OF CHANGES
SPECIFICATION 3.7.13

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.7.8.b, 4.7.8.c, 4.7.8.d 4.7.8.e and 4.7.8.f contain details on testing of ventilation filters. ITS SR 3.7.13.2 refers to ITS 5.0 which contains the requirements of the Ventilation Filter Test Program (VFTP). Technical changes, if any, are discussed in the DOC for Section 5.0. Moving the SRs to a TS program and then referencing the program is considered an administrative change. This change is consistent with NUREG-1432.

A.3 CTS 3.7.8 references CTS 3.9.12. Cross references are not used in the ITS or NUREG-1432. Removing cross references does not alter the requirements of the referenced Specification. Therefore, this is an administrative change with no impact on safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 Not used

M.2 CTS 4.7.8 does not require that verification be performed to assure that the ESF PREACS is capable of maintaining the lower levels of the auxiliary building at a measurable negative pressure. ITS SR 3.7.13.4 requires that this test is performed every 18 months on a STAGGERED TEST BASIS. This test is required to verify the ability of the ESF PREACS to maintain a negative pressure relative to uncontaminated adjacent areas. The ESF PREACS is required to perform this function to limit release of unfiltered air following an accident. The addition of this requirement constitutes a more restrictive change to PVNGS current plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 The details for performance of system functional testing is relocated to plant procedures. The current Surveillance Tests for the ESF pump room exhaust air cleanup system contain sufficient detail for performance of all CTS and ITS Surveillances. This requirement is not required to determine the OPERABILITY of a system, component or structure and therefore is being relocated the Ventilation Filter Testing Program (VFTP).

Any change to the requirements in the VFTP will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to the VFTP is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 4.7.8.a states in part, "At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers." ITS SR 3.7.13.1 also requires that this test be performed every 31 days but does not require a STAGGERED TEST BASIS nor does it require initiating the test from the control room. Since the purpose of the test is to verify proper function of the equipment, it is not necessary to initiate the test from the control room. If operation is initiated by a SIAS, CSAS or FBEVAS, proper function of the equipment can still be verified. Performing testing on a STAGGERED TEST BASIS helps to identify degradation of a generic type such as aging. The normal operating conditions of this system are not severe; therefore, testing each train on a 31 day frequency is adequate. This change has no significant affect on safety. This change is consistent with NUREG-1432.

L.2 CTS 4.7.8.d.2 requires the ESF PREACS to be surveilled to assure its automatic performance is acceptable when subjected to a high radiation test signal. ITS allows the use of an actual or simulated actuation signal. This change allows actuation of the ESF PREACS for reasons other than Surveillances to be used to fulfill the SRs. OPERABILITY is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change has no impact on safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.13

ADMINISTRATIVE CHANGES
(ITS 3.7.13 Discussion of Changes Labeled A.1, A.2 and A.3)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.13 Discussion of Changes Labeled (A.1, A.2 and A.3) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled M.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled M.2) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.13 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The Licensee Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any changes to a Licensee Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.13 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 4.7.8.a states in part, "At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal absorbers." ITS SR 3.7.13.1 also requires that this test be performed every 31 days but does not require a STAGGERED TEST BASIS nor does it require initiating the test from the control room. Since the purpose of the test is to verify proper function of the equipment, it is not necessary to initiate the test from the control room. If operation is initiated by a SIAS, CSAS or FBEVAS, proper function of the equipment can still be verified. Performing testing on a STAGGERED TEST BASIS helps to identify degradation of a generic type such as aging. The normal operating conditions of this system are not severe; therefore, testing each train on a 31 day frequency is adequate. This change has no significant affect on safety. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled L.1) (continued)

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

The proposed change removes the requirement to perform the monthly functional test of the ESF PREACS on a Staggered Test Basis. Testing on a Staggered Test Basis is specified to identify Operability concerns which may be generic in nature such as aging or degradation due to environment or operating practices. The ESF PREACS components are not located in a harsh environment. Testing of the six ESF PREACS trains at PVNGS (2 trains per unit) provides ample opportunity to identify generic type problems through the corrective action process. The equipment root cause of failure analysis, performed as part of the process for significant problems, examines the applicability of the failure to other similar components.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change removes the requirement to perform the monthly functional test of the ESF PREACS on a Staggered Test Basis. Testing on a Staggered Test Basis is specified to identify Operability concerns which may be generic in nature such as aging or degradation due to environment or operating practices. The ESF PREACS components are not located in a harsh environment. Testing of the six ESF PREACS trains at PVNGS (2 trains per unit) provides ample opportunity to identify generic type problems through the corrective action process. The equipment root cause of failure analysis, performed as part of the process for significant problems, examines the applicability of the failure to other similar components.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled L.1) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change removes the requirement to perform the monthly functional test of the ESF PREACS on a Staggered Test Basis. Testing on a Staggered Test Basis is specified to identify Operability concerns which may be generic in nature such as aging or degradation due to environment or operating practices. The ESF PREACS components are not located in a harsh environment. Testing of the six ESF PREACS trains at PVNGS (2 trains per unit) provides ample opportunity to identify generic type problems through the corrective action process. The equipment root cause of failure analysis, performed as part of the process for significant problems, examines the applicability of the failure to other similar components.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 CTS 4.7.8.d.2 requires the ESF PREACS to be surveilled to assure its automatic performance is acceptable when subjected to a high radiation test signal. ITS allows the use of an actual or simulated actuation signal. This change allows actuation of the ESF PREACS for reasons other than Surveillances to be used to fulfill the SRs. OPERABILITY is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal. This change has no impact on safety. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled L.2) (continued)

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

The proposed change allows verification of automatic system actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for ESF PREACS SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the ESF PREACS properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the ESF PREACS components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change allows verification of automatic system actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for ESF PREACS SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the ESF PREACS properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the ESF PREACS components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.13 Discussion of Changes Labeled L.2) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change allows verification of automatic system actuation using an actual or simulated actuation signal instead of just a test signal. This change allows PVNGS to take credit for ESF PREACS SRs if actuation occurs in the event an actual actuation signal is received. In this case, if an actual signal is received and the ESF PREACS properly actuates per the safety analysis, there would be no need to perform the SRs at the original 18 month interval. PVNGS would have the option to either start the SR frequency from receipt of the actual actuation or to retest the ESF PREACS components as originally scheduled. Operability is adequately demonstrated in either case since the components are not capable of discriminating between an actual or simulated actuation signal.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.14
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.~~16~~ 14 Fuel Storage Pool Water Level

<3.9.11> LCO 3.7.~~16~~ 14 1 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

<DOC L.1> APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.9.11 ACT> 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 fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
<4.9.11> SR 3.7.~~16~~.1 1 14	Verify the fuel storage pool water level is ≥ 23 ft above the top of irradiated fuel assemblies seated in the storage racks.	7 days

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.14
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.16 14 1 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.

2 UFSAR

A general description of the fuel storage pool design is given in the FSAR, Section [9.1.2], Reference 1, and 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 4

APPLICABLE SAFETY ANALYSES

intent of the

less than one-third

2

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 to a person at the exclusion area boundary is a small fraction of the 10 CFR 100 (Ref. 5) limits.

According to Reference 4, there is 23 ft of water between the top of the damaged fuel bundle and the fuel pool surface for a fuel handling accident. With a 23 ft water level, 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 bundle and the surface, 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 rods fail from a hypothetical maximum drop.

2

The decontamination factor for 22 ft-6 in of water is essentially the same as that for 23 ft of water so the intent of Regulatory Guide 1.25 is met.

The fuel storage pool water level satisfies Criterion 3 of ~~the NRC Policy Statement~~.

10 CFR 50.36(c)(2)(ii)

(continued)

BASES (continued)

LCO

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.

APPLICABILITY

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.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply.

When the initial conditions for 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. This effectively precludes a spent fuel handling accident from occurring. This does not preclude moving a fuel assembly to a safe position.

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, in either case, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~16~~.1 14 1

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 unit procedures and are acceptable, based on operating experience.

(continued)

1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.~~16~~14.1 (continued)

During refueling operations, the level in the fuel storage pool is at equilibrium with that of the refueling canal, and the level in the refueling canal is checked daily in accordance with LCO ~~3.7.17, "Fuel Storage Pool Boron Concentration."~~ 3.9.6, "Refueling Water Level - Fuel Assemblies"

1

REFERENCES

UFSAR

2

1. ~~FSAR~~, Section ~~[~~9.1.2~~]~~.
2. ~~FSAR~~, Section ~~[~~9.1.3~~]~~.
3. ~~FSAR~~, Section ~~[~~15.7.4~~]~~.
4. Regulatory Guide 1.25
5. 10 CFR 100.11.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.14

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

PVNGS CTS
SPECIFICATION 3.7.14
MARK UP

Specification 3.7.14

3.7 PLANT SYSTEMS

3.7.14 Fuel Storage Pool Water Level

A.1

~~REFUELING OPERATIONS~~

~~3/4.9.11 WATER LEVEL - STORAGE POOL~~

ITS

~~LIMITED CONDITION FOR OPERATION~~

LCO 3.7.14 ~~3.9.11~~ At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: ~~Whenever~~ During movement of irradiated fuel assemblies ~~are~~ in the storage pool. L.1 LA.1

ACTION:

ACT A. With the requirement of the specification not satisfied, suspend all movement of fuel assemblies ~~and crane operations with loads~~ in the fuel storage areas ~~and restore the water level to within its limit within 4 hours.~~ L.2

NOTE The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1 ~~4.9.11~~ The water level in the storage pool shall be determined to be at least its minimum required depth at least once per 7 days ~~when irradiated fuel assemblies are in the fuel storage pool.~~ A.2

DISCUSSION OF CHANGES
SPECIFICATION 3.7.14

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.9.11 requires that the Surveillance be performed at least once per 7 days when irradiated fuel assemblies are in the fuel storage pool. ITS SR 3.7.14.1 does not restate the Applicability in the Surveillance Frequency. Since the Applicability applies to all parts of the Specification (LCO, Actions and Surveillances), it is not necessary to restate the applicable Modes or conditions as part of the SR. Deleting this statement does not change the intent of the Surveillance and has no impact on safety. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 3.9.11 states in part, "With the requirement of the Specification not satisfied, suspend ...all crane operations with loads in the fuel storage areas..." This requirement is not necessary to prevent crane operations in fuel storage areas and, therefore, is being relocated to the Technical Requirements Manual (TRM).

The purpose of this specification is to assure that there is sufficient water level above the top of the stored fuel to maintain the initial conditions assumed in the design basis fuel handling accident. This accident assumes an irradiated fuel assembly is dropped onto irradiated fuel assemblies seated in the storage racks, resulting in ruptured fuel rods. The movement of other loads over irradiated fuel assemblies is administratively controlled based on available analysis for the individual load. The load analysis methods and crane operation which dictate the controls are described in the UFSAR.

Any change to the requirements in the TRM will be governed by the provisions of 10 CFR 50.59. This provides an equivalent level of regulatory control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to a Licensee Controlled Document is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.9.11 is applicable whenever irradiated fuel assemblies are in the storage pool. ITS LCO 3.7.14 is applicable during movement of irradiated fuel assemblies in the fuel storage pool. The purpose of this Specification is to assure that there is sufficient water level above the top of the stored fuel to maintain the initial conditions assumed in the design basis fuel handling accident. This accident assumes an irradiated fuel assembly is dropped onto irradiated fuel assemblies seated in the storage racks, resulting in ruptured fuel rods. Suspending fuel movement precludes a fuel handling accident from occurring. This change does not reduce the level of safety as described in the applicable Bases. This change is consistent with NUREG-1432.

L.2 The Actions specified in CTS 3.9.11 include restoring the water level to within its limit within 4 hours. ITS LCO 3.7.14 does not require restoration of water level to place the plant in a safe condition. The purpose of this Specification is to assure that there is sufficient water level above the top of the stored fuel to maintain the initial conditions assumed in the design basis fuel handling accident. This accident assumes an irradiated fuel assembly is dropped onto irradiated fuel assemblies seated in the storage racks, resulting in ruptured fuel rods. Suspending fuel movement precludes a fuel handling accident from occurring. With the initiating event for the design basis accident removed, restoration of the initial conditions is not required. This change does not reduce the level of safety as described in the applicable Bases. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.14

ADMINISTRATIVE CHANGES
(ITS 3.7.14 Discussion of Changes Labeled A.1 and A.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.14 Discussion of Changes Labeled (A.1 and A.2) (continued)

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.14 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.14 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.14 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.9.11 is applicable whenever irradiated fuel assemblies are in the storage pool. ITS LCO 3.7.14 is applicable during movement of irradiated fuel assemblies in the fuel storage pool. The purpose of this Specification is to assure that there is sufficient water level above the top of the stored fuel to maintain the initial conditions assumed in the design basis fuel handling accident. This accident assumes an irradiated fuel assembly is dropped onto irradiated fuel assemblies seated in the storage racks, resulting in ruptured fuel rods. Suspending fuel movement precludes a fuel handling accident from occurring. This change does not reduce the level of safety as described in the applicable Bases. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.14 Discussion of Changes Labeled L.1) (continued)

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

The proposed change modifies the Applicability from, "Whenever irradiated fuel assemblies are in the storage pool," to, "During movement of irradiated fuel assemblies in the fuel storage pool." The specified water level of, ...≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks," provides the required decontamination factor in the event of a fuel handling accident. The movement of heavy loads and other crane operations over the fuel storage pool will be administratively controlled to preclude a design bases fuel handling accident. In this case, the only initiator of a fuel handling accident would be dropping of an irradiated fuel assembly onto the fuel assemblies seated in the storage racks during movement. Therefore, this is the only time when the water level must be maintained by TS.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the Applicability from, "Whenever irradiated fuel assemblies are in the storage pool," to, "During movement of irradiated fuel assemblies in the fuel storage pool." The specified water level of, ...≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks," provides the required decontamination factor in the event of a fuel handling accident. The movement of heavy loads and other crane operations over the fuel storage pool will be administratively controlled to preclude a design bases fuel handling accident. In this case, the only initiator of a fuel handling accident would be dropping of an irradiated fuel assembly onto the fuel assemblies seated in the storage racks during movement. Therefore, this is the only time when the water level must be maintained by TS.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.14 Discussion of Changes Labeled L.1) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change modifies the Applicability from, "Whenever irradiated fuel assemblies are in the storage pool," to, "During movement of irradiated fuel assemblies in the fuel storage pool." The specified water level of, ...≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks," provides the required decontamination factor in the event of a fuel handling accident. The movement of heavy loads and other crane operations over the fuel storage pool will be administratively controlled to preclude a design bases fuel handling accident. In this case, the only initiator of a fuel handling accident would be dropping of an irradiated fuel assembly onto the fuel assemblies seated in the storage racks during movement. Therefore, this is the only time when the water level must be maintained by TS.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.14 Discussion of Changes Labeled L.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG-1432.

L.2 The Actions specified in CTS 3.9.11 include restoring the water level to within its limit within 4 hours. ITS LCO 3.7.14 does not require restoration of water level to place the plant in a safe condition. The purpose of this Specification is to assure that there is sufficient water level above the top of the stored fuel to maintain the initial conditions assumed in the design basis fuel handling accident. This accident assumes an irradiated fuel assembly is dropped onto irradiated fuel assemblies seated in the storage racks, resulting in ruptured fuel rods. Suspending fuel movement precludes a fuel handling accident from occurring. With the initiating event for the design basis accident removed, restoration of the initial conditions is not required. This change does not reduce the level of safety as described in the applicable Bases. This change is consistent with NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.14 Discussion of Changes Labeled L.2) (continued)

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

The proposed change removes the requirement to restore water level to within limits within 4 hours with the LCO not met. The requirement to suspend movement of irradiated fuel remains. With the movement of irradiated fuel suspended, the initiator of the fuel handling accident is removed and the Applicability is appropriately exited. Since the Specification would no longer be Applicable, there is no need to meet the LCO.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change removes the requirement to restore water level to within limits within 4 hours with the LCO not met. The requirement to suspend movement of irradiated fuel remains. With the movement of irradiated fuel suspended, the initiator of the fuel handling accident is removed and the Applicability is appropriately exited. Since the Specification would no longer be Applicable, there is no need to meet the LCO.

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.14 Discussion of Changes Labeled L.2) (continued)

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

The proposed change removes the requirement to restore water level to within limits within 4 hours with the LCO not met. The requirement to suspend movement of irradiated fuel remains. With the movement of irradiated fuel suspended, the initiator of the fuel handling accident is removed and the Applicability is appropriately exited. Since the Specification would no longer be Applicable, there is no need to meet the LCO.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.15
MARK UP

<DOC>
<CTS>

3.7 PLANT SYSTEMS

3.7.~~17~~ 15 Fuel Storage Pool Boron Concentration 3

<3.9.13>

LCO 3.7.~~17~~ 15 The fuel storage pool boron concentration shall be ≥ ~~[2000]~~ 2150 ppm. 2

<DOC L.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.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<3.9.13 ACT> 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	
	A.2.1 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately
	OR	
<DOC L.1>	A.2.2 ~~Verify by administrative means [Region 2] fuel storage pool verification has been performed since the last movement of fuel assemblies in the fuel storage pool.~~ Initiate action to perform a fuel storage pool verification 1	Immediately [TSTF-70]

<DOC>
<CTS>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
<4.9.13> <DOC A.2>	SR 3.7.~~17~~.1 15 3 Verify the fuel storage pool boron concentration is within limit.	7 days

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.15
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.~~17~~ 15 Fuel Storage Pool Boron Concentration

BASES 3

3

BACKGROUND	As described in LCO 3.7.~~18~~ 17, "Spent Fuel Assembly Storage," fuel assemblies are stored in the spent fuel racks [in a "checkerboard" pattern] 2 in accordance with criteria based on [initial enrichment and discharge burnup]. Although the water in the spent fuel pool is normally borated to ≥ ~~[1800]~~ 2150 2 ppm, the criteria that limit the storage of a fuel assembly to specific rack locations is conservatively developed without taking credit for boron.
APPLICABLE SAFETY ANALYSES	3 A fuel assembly could be inadvertently loaded into a spent fuel rack location not allowed by LCO 3.7.~~18~~ 17 (e.g., an unirradiated fuel assembly or an insufficiently depleted fuel assembly). 2 ~~This accident is analyzed assuming the extreme case of completely loading the fuel pool racks with unirradiated assemblies of maximum enrichment.~~ Another type of postulated accident is associated with a fuel assembly that is dropped onto the fully loaded fuel pool storage racks. 2 Or between a rack and the pool walls. These ~~Either~~ incidents could have a positive reactivity effect, decreasing the margin to criticality. However, the negative reactivity effect of the soluble boron compensates for the increased reactivity caused by ~~either one of the two~~ these 3 postulated accident scenarios. The concentration of dissolved boron in the fuel pool satisfies Criterion 2 of ~~the NRC Policy Statement~~ 10CFR50.36(c)(2)(ii).
LCO	The specified concentration of dissolved boron in the fuel pool preserves the assumptions used in the analyses of the potential accident scenarios described above. This concentration of dissolved boron is the minimum required concentration for fuel assembly storage and movement within the fuel pool.
APPLICABILITY	This LCO applies whenever fuel assemblies are stored in the spent fuel pool until a complete spent fuel pool

(continued)

BASES

APPLICABILITY (continued)

verification has been performed following the last movement of fuel assemblies in the spent fuel 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.

ACTIONS

A.1, A.2, and A.3

The Required Actions are modified by a Note indicating that LCO 3.0.3 does not apply.

When the concentration of boron in the spent fuel pool is less than required, immediate action must be taken to preclude an accident from happening or to mitigate the consequences of an accident in progress. This is most efficiently achieved by immediately suspending the movement of fuel assemblies. This does not preclude the movement of fuel assemblies to a safe position. In addition, action must be immediately initiated to restore boron concentration to within limit. Alternately, action to perform a (1) ~~an immediate, verification, by administrative means, of the fuel storage pool fuel locations, to ensure proper locations of the fuel since the last movement of fuel assemblies in the fuel storage pool,~~ verification (2) can be ~~performed~~ initiated.

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 operation. Therefore, inability to suspend movement of fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~17~~ 15.1

This SR verifies that the concentration of boron in the spent fuel pool is within the required limit. As long as this SR is met, the analyzed incidents are fully addressed. The 7 day Frequency is appropriate because no major replenishment of pool water is expected to take place over a short period of time.

(continued)

BASES (continued)

REFERENCES	2 ~~None.~~ 1. UFSAR, Section 9.1.2

2. PVNGS Operating License Amendments 82, 69, and 54 for Units 1, 2 and 3 respectively, and associated NRC Safety Evaluation dated September 30, 1994.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.15

PALO VERDE ITS CONVERSION
NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.15 - Fuel Storage Pool Boron Concentration

1. NUREG-1432 LCO 3.7.17 Required Action A.2.2 requires verifying that a fuel storage pool verification has been performed since the last movement of fuel assemblies in the fuel storage pool. This Action is not consistent with the Applicability in that if a fuel storage pool verification had been performed since the last movement of fuel, the LCO would not be applicable. ITS LCO 3.7.15 Required Action A.2.2 has been changed to Perform a fuel storage pool verification. This change is consistent with the Applicability of both NUREG-1432 LCO 3.7.17 and ITS 3.7.15. There is no impact to safety due to this change.

2. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

3. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

PVNGS CTS
SPECIFICATION 3.7.15
MARK UP

Specification 3.7.15

3.7 PLANT SYSTEMS
3.7.15 Fuel Storage Pool Boron Concentration

~~REFUELING OPERATIONS~~

~~3/4.9.13 BORON CONCENTRATION - SPENT FUEL STORAGE POOL~~

~~LIMITING CONDITION FOR OPERATION~~

A.1

LCO 3.7.15 ~~3.9.13~~ The boron concentration in the spent fuel storage pool shall be maintained greater than or equal to 2150 ppm.

APPLICABILITY: Whenever fuel assemblies are in the spent fuel storage pool.

ACTION: and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool. L.1

ACT A.1 With the requirements of this specification not satisfied, suspend all movement of fuel assemblies in the spent fuel storage pool and either
ACT A.2.1 restore the boron concentration to 2150 ppm or greater. The provisions of Specification 3.0.3
NOTE are not applicable.
ACT A.2.2 or initiate action to perform a fuel storage pool verification L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1 ~~4.9.13~~ The boron concentration of the spent fuel storage pool shall be determined ~~by chemical analysis at least~~ to be within limits once per 7 days. ~~when fuel assemblies are in the spent fuel storage pool~~. A.2

DISCUSSION OF CHANGES
SPECIFICATION 3.7.15

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

A.2 CTS 4.9.13 requires that the boron concentration of the spent fuel pool be determined by chemical analysis once per seven days when fuel assemblies are in the spent fuel storage pool. The Surveillance specified in the ITS will require that the fuel storage pool boron concentration be verified to be within limits once per seven days. Although the CTS merely requires that the boron concentration be determined every seven days, the intent of surveillance testing is to verify that parameters are within the limits specified in the LCO. It is not necessary to state that the boron concentration is determined by chemical analysis. Since there is no standard procedure referenced in either the Specification or the Bases, any method of analysis is acceptable as long as results of sufficient accuracy are obtained. It is also not necessary to state that this SR must be performed when fuel assemblies are in the spent fuel storage pool since this is stated in the Applicability. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

None.

TECHNICAL CHANGES - RELOCATIONS

None.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 CTS 3.9.13 is applicable whenever fuel assemblies are in the spent fuel storage pool. ITS 3.7.15 is applicable 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. Although the Applicability of the ITS is less restrictive than the CTS, the intent is the same. CTS Bases 3/4.9.13 states that the restriction on the boron concentration of the spent fuel storage pool ensures that k_{eff} is maintained less than or equal to 0.95 in the event that either a new or spent fuel assembly is either improperly loaded into any available storage location in the spent fuel storage pool, or is dropped in the gap between the pool wall and a Region 3 storage rack. If a fuel storage pool verification has been performed since the last movement of fuel assemblies in the fuel storage pool, then neither of the of the conditions described in the CTS Bases will exist and the Specification is not applicable.

By similar reasoning, the plant can be brought to a safe condition and the Action exited by suspending movement of fuel assemblies within the fuel storage pool and either restoring the boron concentration to within limits or initiating action to perform a fuel storage pool verification. There is no reduction in safety due to this less restrictive change since the intent of the CTS is met as described in the CTS Bases. This change is a NUREG exception which has been submitted as traveller TSTF-70.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.15

ADMINISTRATIVE CHANGES
(ITS 3.7.15 Discussion of Changes Labeled A.1 and A.2)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.15 Discussion of Changes Labeled (A.1 and A.2) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.15 Discussion of Changes Labeled L.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed change involves making the CTS less restrictive. Below is the description of this less restrictive change and the NSHC for the conversion to NUREG 1432.

L.1 CTS 3.9.13 is applicable whenever fuel assemblies are in the spent fuel storage pool. ITS 3.7.15 is applicable 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. Although the Applicability of the ITS is less restrictive than the CTS, the intent is the same. CTS Bases 3/4.9.13 states that the restriction on the boron concentration of the spent fuel storage pool ensures that k_{eff} is maintained less than or equal to 0.95 in the event that either a new or spent fuel assembly is either improperly loaded into any available storage location in the spent fuel storage pool, or is dropped in the gap between the pool wall and a Region 3 storage rack. If a fuel storage pool verification has been performed since the last movement of fuel assemblies in the fuel storage pool, then neither of the of the conditions described in the CTS Bases will exist and the Specification is not applicable.
By similar reasoning, the plant can be brought to a safe condition and the Action exited by suspending movement of fuel assemblies within the fuel storage pool and either restoring the boron concentration to within limits or initiating action to perform a fuel storage pool verification. There is no reduction in safety due to this less restrictive change since the intent of the CTS is met as described in the CTS Bases. This change is a NUREG exception which has been submitted as traveller TSTF-70.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.15 Discussion of Changes Labeled L.1) (continued)

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

The proposed change modifies the Applicability to read, "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." The Applicability is currently, "Whenever fuel assemblies are in the spent fuel storage pool." Since the PVNGS safety analyses does not take credit for the boron in the fuel storage pool water, as long as the stored fuel assemblies are in the correct locations, criticality cannot be achieved. The fuel storage pool verification assures that the stored fuel assemblies are in locations consistent with the safety analyses. Therefore, there is no need to control boron concentration if no fuel assemblies have been moved since the last fuel storage pool verification.

This change is consistent with NUREG-1432. This change does not result in any hardware changes or changes to plant operating practices nor does it affect plant operation. Therefore this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change modifies the Applicability to read, "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." The Applicability is currently, "Whenever fuel assemblies are in the spent fuel storage pool." Since the PVNGS safety analyses does not take credit for the boron in the fuel storage pool water, as long as the stored fuel assemblies are in the correct locations, criticality cannot be achieved. The fuel storage pool verification assures that the stored fuel assemblies are in locations consistent with the safety analyses. Therefore, there is no need to control boron concentration if no fuel assemblies have been moved since the last fuel storage pool verification.

TECHNICAL CHANGES - LESS RESTRICTIVE
(ITS 3.7.15 Discussion of Changes Labeled L.1) (continued)

This change is consistent with NUREG-1432. This change will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods of governing normal plant operation. This change will not alter assumptions made in the safety analysis or licensing basis. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change modifies the Applicability to read, "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." The Applicability is currently, "Whenever fuel assemblies are in the spent fuel storage pool." Since the PVNGS safety analyses does not take credit for the boron in the fuel storage pool water, as long as the stored fuel assemblies are in the correct locations, criticality cannot be achieved. The fuel storage pool verification assures that the stored fuel assemblies are in locations consistent with the safety analyses. Therefore, there is no need to control boron concentration if no fuel assemblies have been moved since the last fuel storage pool verification.

This change will not reduce a margin of safety since it has no impact on safety analysis assumptions. This change is consistent with NUREG-1432, which was approved by the NRC Staff. Therefore, this change does not result in a reduction in a margin of safety.

CE STS

NUREG-1432 REV. 1

SPECIFICATION 3.7.16

MARK UP

<DOC> 3.7 PLANT SYSTEMS

<CTS> 3.7.~~19~~ (16) Secondary Specific Activity

<3.7.1.4> LCO 3.7.~~19~~ (16) (1) 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
<3.7.1.4ACT> 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
<4.7.1.4> SR 3.7.~~19~~ (16).1 Verify the specific activity of the secondary coolant is within limit.	[31] days

(1)

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.16
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.~~19~~ Secondary Specific Activity
16 1

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 is indication of 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.

A limit on secondary coolant specific activity during power operation minimizes releases to the environment because of normal operation, anticipated operational occurrences, and accidents.

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 μCi/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 reactor coolant LEAKAGE. Most of the iodine isotopes have short half lives (i.e., < 20 hours). I-131, with a half life of 8.04 days, concentrates faster than it decays, but does not reach equilibrium because of blowdown and other losses.

1 With the specified activity level, the resultant 2 hour thyroid dose to a person at the exclusion area boundary (EAB) would be about ~~[1.3]~~ rem should the main steam safety valves (MSSVs) open for the 2 hours following a trip from full power. 42 2

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.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

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] µCi/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.

With the loss of offsite power, the remaining steam generator is available for core decay heat dissipation by venting steam to the atmosphere through MSSVs and atmospheric dump valves (ADVs). The Auxiliary Feedwater System supplies the necessary makeup to the steam generator. Venting continues until the reactor coolant temperature and pressure have decreased sufficiently for the Shutdown Cooling System to complete the cooldown.

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 MSSVs and ADVs during the event.

Secondary specific activity limits satisfy Criterion 2 of ~~the NRC Policy Statement~~. 10CFR50.36(c)(2)(ii)

LCO

As indicated in the Applicable Safety Analyses, the specific activity limit in the secondary coolant system of ≤ [0.10] µCi/gm DOSE EQUIVALENT I-131 to limit the radiological consequences of a Design Basis Accident (DBA) to a small fraction of the required limit (Ref. 1).

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.

(continued)

BASES (continued)

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.

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 secondary specific activity cannot be restored to within limits in 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 3.7.16.1 (1)

This SR ensures that the secondary specific activity is within the limits of the accident analysis. A gamma isotope 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.

(continued)

BASES (continued)

REFERENCES

1. 10 CFR 100.11.

2 UFSAR 2. ~~FSAR~~, Chapter ~~[~~15~~]~~.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.16

1. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

2. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

PVNGS CTS
SPECIFICATION 3.7.16
MARK UP

(A.1)

3.7 PLANT SYSTEMS

3.7.16 ~~ACTIVITY~~ Secondary Specific Activity

(ITS) ~~LIMITING CONDITION FOR OPERATION~~

(LCO3.7.16) ~~3.7.1.4~~ The specific activity of the secondary coolant ~~system~~ shall be less than or equal to 0.10 microcurie/gram DOSE EQUIVALENT I-131.

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

(ACT A.) ACTION:

With the specific activity of the secondary coolant system greater than 0.10 microcurie/gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

(SR3.7.16.1) ~~4.7.1.4~~ The specific activity of the secondary coolant system shall be determined to be within the limit ~~by performance of the sampling and analysis program of Table 4.7-1.~~ every 31 days. (M.1)

TABLE 4.7-1

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY
SAMPLE AND ANALYSIS PROGRAM

(M.1)

TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY
1. Gross Activity Determination	At least once per 72 hours (LA.1)
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	(a) 1 per 31 days, whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. (b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.

(M.1)

DISCUSSION OF CHANGES
SPECIFICATION 3.7.16

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The Frequency for CTS 4.7.1.4 is determined by consulting CTS 3/4.7.1.4 Table 4.7-1. This Table requires that a gross activity determination be performed at least once per 72 hours. Based on the results of the gross activity determination, the isotopic analysis for Dose Equivalent I-131 is performed either once per 31 days if the gross activity indicates the iodine concentration is greater than 10% of the allowable limit, or once per six months if the gross activity indicates the iodine concentration is less than 10% of the allowable limit. ITS 3.7.16 does not require a gross activity determination to be performed but requires that Dose Equivalent I-131 be verified to be within limits once per 31 days. This change is more conservative since the only action required by TS if the gross activity exceeds the threshold is increasing the frequency of the Dose Equivalent I-131 SR to once per 31 days. The only Condition specified in CTS 3.7.1.4 is associated with Dose Equivalent I-131. ITS 3.7.16 already requires the isotopic analysis for Dose Equivalent I-131 to be performed at the more conservative of the two frequencies specified in ITS 4.7.1.4; therefore, the addition of this requirement constitutes a more restrictive change to plant operation. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - RELOCATIONS

LA.1 CTS 4.7.1.4 requires a gross activity determination to be performed on the secondary coolant once per 72 hours. This requirement is not required to determine the OPERABILITY of the RCS pressure boundary and therefore is being relocated to the Technical Requirements Manual (TRM).

CTS 4.7.1.4 requires the gross activity of the secondary coolant be determined once per 72 hours to determine the required Frequency of the Dose Equivalent I-131 SR. As discussed in DOC M.1, this test is no longer required by TS since the Specified frequency for ITS SR 3.7.16.1 already 31 days which is the more conservative of the two frequencies specified in CTS 4.7.1.4. The requirement to perform a gross activity determination once per 72 hours will be relocated to allow trending and indication of secondary specific activity on a more frequent basis.

Any change to the requirements in the TRM will be controlled in accordance with the provisions of 10 CFR 50.59. This provides an equivalent level of control and is an administrative change with no impact on the margin of safety. This requirement does not need to be in the ITS to provide adequate protection to the public health and safety. Therefore, relocation of this requirement to a TRM is acceptable and is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

None.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.16

ADMINISTRATIVE CHANGES
(ITS 3.7.16 Discussion of Changes Labeled A.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.16 Discussion of Changes Labeled A.1) (continued)

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.16 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.16 Discussion of Changes Labeled M.1) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.16 Discussion of Changes Labeled LA.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. The proposed changes, since detail is being removed from the CTS to a Licensee Controlled Document, are less restrictive. The descriptions of these changes are in the Discussion of Changes listed above.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes do not result in any hardware changes or changes to plant operating practices. The details being relocated are not assumed to be an initiator of any analyzed event. The License Controlled Document containing the relocated requirements will be maintained using the provisions of 10 CFR 50.59 or other specified control processes and is subject to the change control process in the Administrative Controls Section of the ITS. Since any change to a License Controlled Document will be evaluated, no increase in the probability or consequences of an accident previously evaluated will be allowed. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

TECHNICAL CHANGES - RELOCATIONS
(ITS 3.7.16 Discussion of Changes Labeled LA.1) (continued)

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

The proposed changes relocate requirements from the CTS to a License Controlled Document. These changes will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes will not impose different requirements and adequate control of information will still be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes relocate requirements from the CTS to a Licensee Controlled Document. These changes will not reduce a margin of safety since they have no impact on any safety analysis assumptions. In addition, the requirements to be transposed from the CTS to the Licensee Controlled Document are the same as the CTS. Since any future changes to this Licensee Controlled Document will be evaluated per the requirements of 10 CFR 50.59, or other specified control processes, no reduction (significant or insignificant) in a margin of safety will be allowed. Therefore, these changes will not involve a significant reduction in a margin of safety.

The NRC review provides a certain margin of safety, and although this review will no longer be performed prior to submittal, the NRC still inspects the 10 CFR 50.59 process. The proposed changes are consistent with NUREG-1432, which was approved by the NRC Staff. The change controls for proposed relocated details and requirements provide an acceptable level of regulatory authority. Revising the CTS to reflect the approved level of detail per NUREG-1432 reinforces the conclusion that there is not a significant reduction in the margin of safety. Therefore, revising the CTS to reflect the NRC accepted level of detail and requirements ensures no reduction in a margin of safety.

CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.17
MARK UP

<DOC>
<CTS>
<DOCM.1>

3.7 PLANT SYSTEMS

3.7.~~18~~ 17 Spent Fuel Assembly Storage

1

<LATER>

LCO 3.7.~~18~~ 17 The combination of initial enrichment and burnup of each ~~spent~~ fuel assembly stored in ~~[Region 2]~~ each of the three regions of the fuel storage pool shall be within the acceptable ~~(~~burnup domain~~)~~ ~~of~~ for each region as shown in Figure 3.7.~~18~~ 17-1 ~~for in accordance with~~ and described in Specification 4.3.1.1~~)~~.

APPLICABILITY: Whenever any fuel assembly is stored in ~~[Region 2] of~~ the 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. --------------------- Initiate action to move the noncomplying fuel assembly ~~from [Region 2]~~ into an appropriate region.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.~~18~~ 17.1	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.~~18~~ 17-1 ~~or~~ and Specification 4.3.1.1.	Prior to storing the fuel assembly in ~~[Region 2]~~ the spent fuel storage pool

<DOC>
<CTS>

<5.3.1>

1

Insert 1

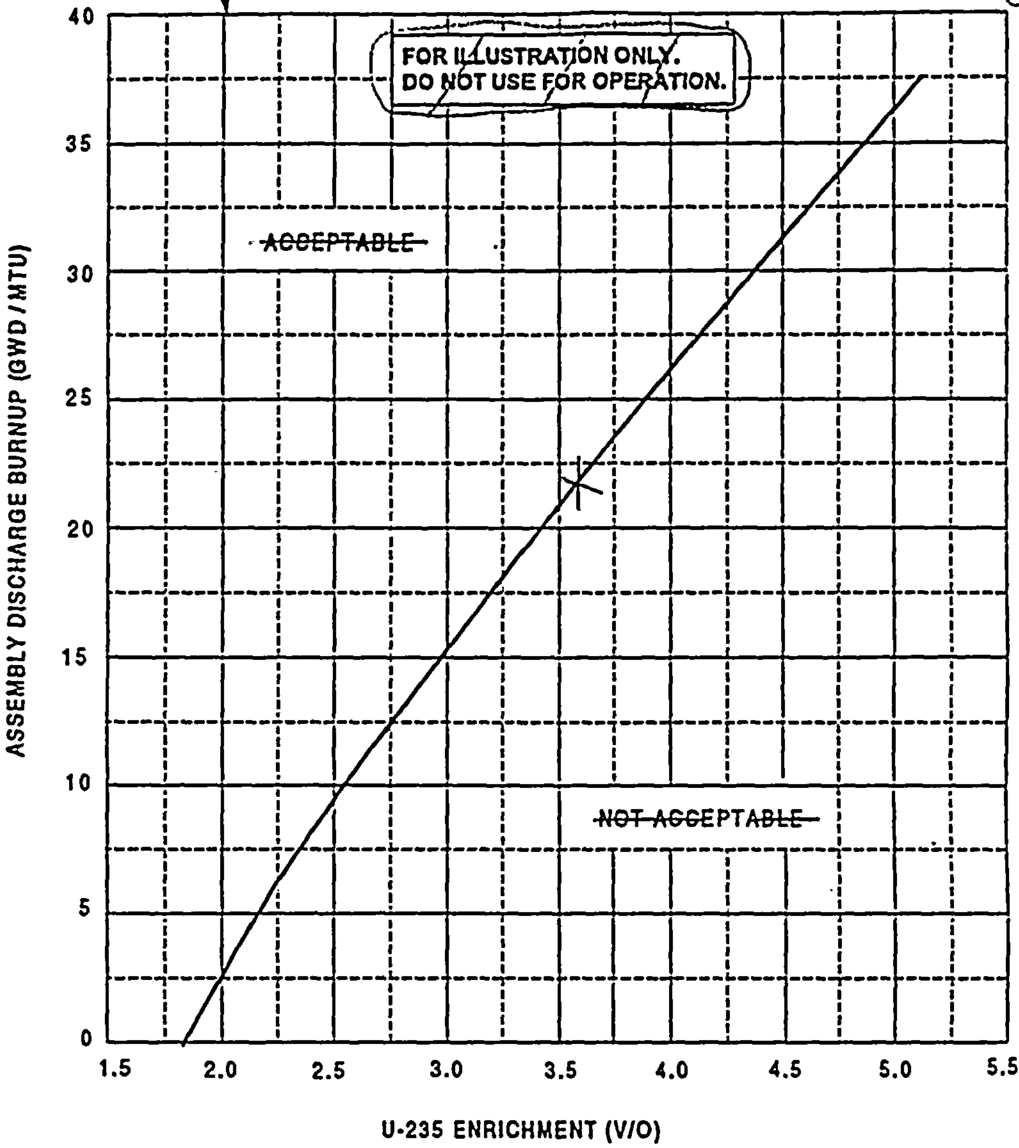
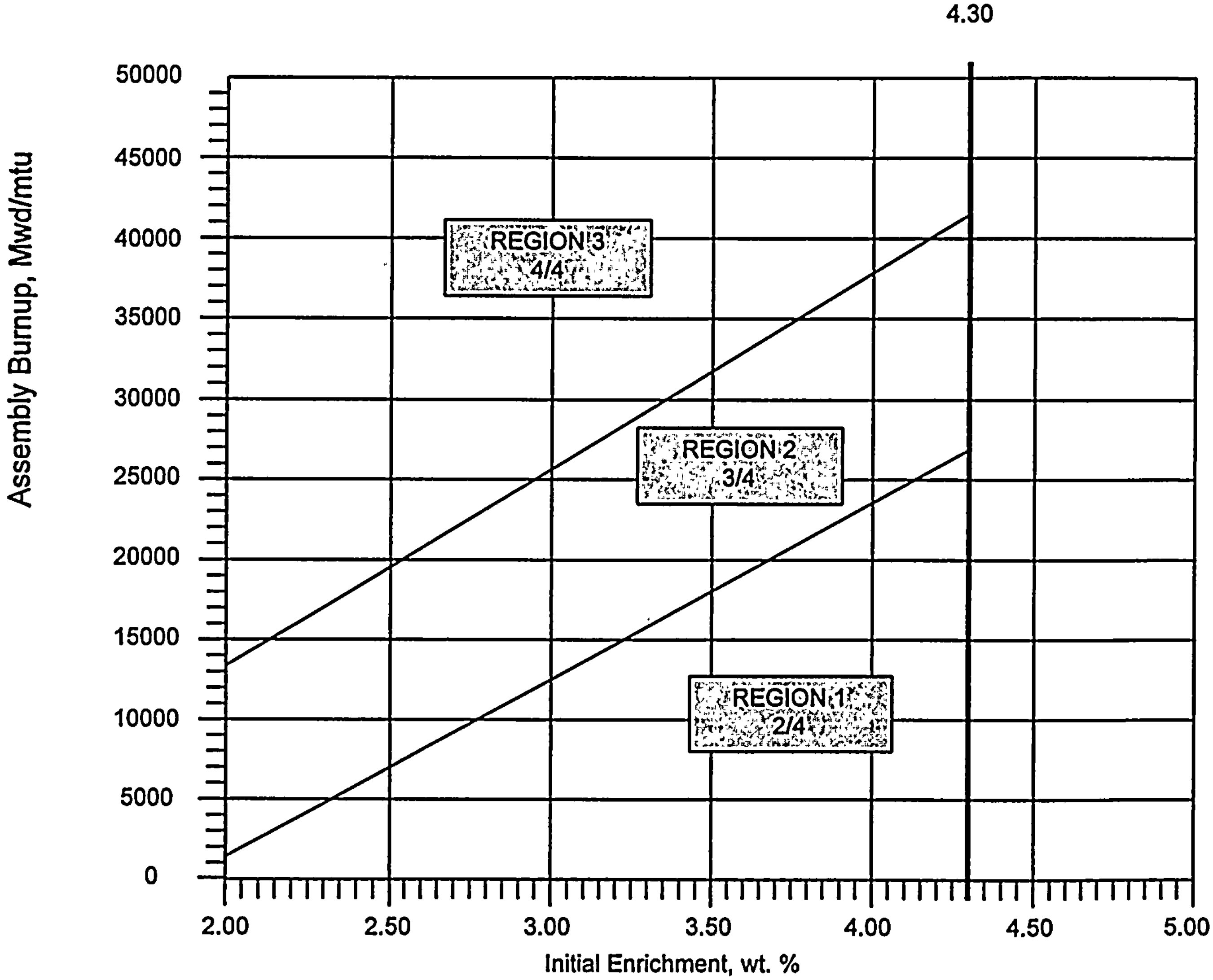


Figure 3.7.~~18~~17-1 (page 1 of 1)
Discharge Burnup vs. Initial Enrichment for Region II Racks

<Insert for Figure 3.7.17-1>

FIGURE 3.7.17-1
ASSEMBLY BURNUP VERSUS INITIAL ENRICHMENT

1



CE STS
NUREG-1432 REV. 1
SPECIFICATION 3.7.17
BASES MARK UP

B 3.7 PLANT SYSTEMS

B 3.7.~~18~~ 17 Spent Fuel Assembly Storage

BASES

1

BACKGROUND

Insert 1

~~The spent fuel storage facility is designed to store either new (nonirradiated) nuclear fuel assemblies, or burned (irradiated) fuel assemblies in a vertical configuration underwater. The storage pool is sized to store [735] irradiated fuel assemblies, which includes storage for [15] failed fuel containers. The spent fuel storage cells are installed in parallel rows with center to center spacing of [12 31/32] inches in one direction, and [13 3/16] inches in the other orthogonal direction. This spacing and "flux trap" construction, whereby the fuel assemblies are inserted into neutron absorbing stainless steel cans, is sufficient to maintain a k_{eff} of ≤ 0.95 for spent fuel of original enrichment of up to [3.3]%. However, as higher initial enrichment fuel assemblies are stored in the spent fuel pool, they must be stored in a checkerboard pattern taking into account fuel burnup to maintain a k_{eff} of 0.95 or less~~

APPLICABLE SAFETY ANALYSES

Insert 2

~~The spent fuel storage facility is designed for noncriticality by use of adequate spacing, and "flux trap" construction whereby the fuel assemblies are inserted into neutron absorbing stainless steel cans.~~

~~The spent fuel assembly storage satisfies Criterion 2 of the NRC Policy Statement.~~

LCO

The restrictions on the placement of fuel assemblies within the spent fuel pool, according to ~~[~~Figure 3.7.~~18-1]~~ 17, in the accompanying LCO, ensures that the k_{eff} of the spent fuel pool will always remain ~~<~~ ≤ 0.95 assuming the pool to be flooded with unborated water. The restrictions are consistent with the criticality safety analysis performed for the spent fuel pool according to ~~[~~Figure 3.7.~~18-1]~~ 17, in the accompanying LCO. ~~Fuel assemblies not meeting the criteria of [Figure 3.7.18-1] shall be stored in accordance with Specification 4.3.1.1.~~ Specification 4.3.1.1 provides additional details for fuel storage in each of the three Regions.

(continued)

INSERT FOR ITS BASES 3.7.17

INSERT 1

BACKGROUND

The spent fuel storage facility is designed to store either new (nonirradiated) nuclear fuel assemblies, or burned (irradiated) fuel assemblies in a vertical configuration underwater. The storage pool was originally designed to store up to 1329 fuel assemblies in a borated fuel storage mode. The current storage configuration, which allows credit to be taken for burnup and does not require neutron absorbing (boraflex) storage cans, provides for a maximum storage of 1054 fuel assemblies in a three-region configuration. Region 1 is comprised of three 9x8 storage racks, one 12x8 storage rack, and one 9x9 storage rack. To prevent inadvertent storage of a fuel assembly in a cell required to be vacant, cell blocking devices are placed in every other storage cell location to maintain a two-out-of-four checkerboard configuration. Region 2 is comprised of three 9x8 storage racks and one 12x8 storage rack. Cell blocking devices in Region 2 are employed in one out of every four storage cell locations to preclude the possibility of an unanalyzed assembly configuration. Region 3 is comprised of six 9x8 storage racks and two 12x8 storage racks. Since fuel assemblies may be stored in every Region 3 cell location, no cell blocking devices are installed in Region 3. Cell blocking devices are also placed along the Region 2 interface with Region 3 to eliminate the possibility of an unanalyzed arrangement of assemblies. The spent fuel storage cells are installed in parallel rows with a nominal center-to-center spacing of 9.5 inches. This spacing and the storage of fuel in the appropriate region based on assembly burnup in accordance with TS Figure 3.7.17-1 is sufficient to maintain a Keff of $\leq$0.95 for spent fuel of original enrichment of up to 4.30 %.

INSERT FOR ITS BASES 3.7.17 (Cont.)

INSERT 2

APPLICABLE SAFETY ANALYSES

The spent fuel storage pool is designed for noncriticality by use of adequate spacing and the storage of fuel in the appropriate region based on assembly burnup in accordance with TS Figure 3.7.17-1.

The analysis of the reactivity effects of fuel storage in the spent fuel storage racks was performed by ABB-Combustion Engineering (CE) using the two-dimensional discrete ordinates transport theory DOT-IV computer code, with four energy group neutron cross sections generated by the CEPAK code. These codes have been previously used by CE for the analysis of fuel rack reactivity and have been benchmarked against results from numerous critical experiments. These experiments simulate the PVNGS fuel storage racks as realistically as possible with respect to parameters important to reactivity such as enrichment and assembly spacing. In March 1992, the NRC issued Information Notice 92-21 and Supplement 1 concerning discrepancies that were discovered in spent fuel pool reactivity calculations. The discrepancies were due to an overestimation of neutron absorption in the CEPAK generation of cross sections. These discrepancies were found to exist only in regions containing a strong neutron absorber (poison). Since neutron poison is not present, this problem does not exist for the PVNGS racks.

The modeling of Regions 2 and 3 included several conservative assumptions. These assumptions neglected the reactivity effects of axial leakage, poison shims in the assemblies, structural grids, and soluble boron in the 68øF pool water. These assumptions tend to increase the calculated effective multiplication factor (k(eff)) of the racks. The stored fuel assemblies were modeled as CE 16x16 assemblies with a nominal pitch of 0.506 inches between fuel rods, a fuel pellet diameter of 0.33 inches, and a U0(2) density of 10.4 g/cc.

DOT-IV calculations were used to construct a curve of burnup versus initial enrichment for both Regions 2 and 3 (TS Figure 5.6-1) such that all points on the curve produce a k(eff) value (without uncertainties or biases) of 0.93. This method of reactivity equivalencing has been accepted by the NRC and used for numerous other spent fuel storage pools which take credit for burnup. The NRC criticality acceptance criterion for fuel storage is that k(eff) be no greater than 0.95, including all uncertainties at a 95% probability/95% confidence level. Therefore, the reactivity effects due to uncertainties in minimum center-to-center pitch, eccentric positioning of assemblies, minimum monolith thickness, temperature variations, minimum L-insert thickness, assembly enrichment, and assembly burnup were obtained as well as a methodology uncertainty

INSERT FOR ITS BASES 3.7.17 (Cont.)

INSERT 2 (Cont.)

and bias. These were applied to the nominal value of 0.93 to obtain a final k(eff) 0.944 for the spent fuel racks. This meets the NRC criterion of no greater than 0.95.

Most abnormal storage conditions will not result in an increase in the k(eff) of the racks. However, it is possible to postulate events, such as an assembly drop on top of a rack or between a rack and the pool walls or the misloading of an assembly, with a burnup and enrichment combination outside of the acceptable area in TS Figure 3.7.17-1, which could lead to an increase in reactivity. However, for such events, credit may be taken for the presence of 2150 ppm of boron in the pool water required by TS ~~???~~, 3.7.15 since the staff does not require the assumption of two unlikely, independent, concurrent events to ensure protection against a criticality accident (double contingency principle). The reduction in k(eff) caused by the boron more than offsets the reactivity addition caused by credible accidents. Therefore, the staff criterion of k(eff) no greater than 0.95 for any postulated accident is met.

The criticality aspects of the spent fuel pool meet the requirements of General Design Criterion 62 for the prevention of criticality in fuel storage and handling.

The spent fuel pool heat load calculations were based on a full pool with 1300 fuel assemblies. The maximum number of fuel assemblies that can be stored in the three-region configuration is 1054 fuel assemblies. The actual loading pattern therefore has a lower decay heat than assumed in the calculations for a full pool.

The original licensing basis for the spent fuel pool allowed for spent fuel to be loaded in either a 4x4 array or a checkerboard array, depending on the use of boraflex poison. Therefore, a fuel handling accident was assumed to occur with maximum loading of the pool. The fuel pool rack construction precludes more than one assembly from being impacted in a fuel handling accident. Therefore, the UFSAR analysis conclusion regarding the worst scenario for a dropped assembly (in which the horizontal impact of a fuel assembly on top of the spent fuel assembly damages fuel rods in the dropped assembly but does not impact fuel in the stored assemblies) continues to be limiting.

The spent fuel assembly storage satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

1

BASES (continued)

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in ~~[Region 2] of~~ the spent fuel pool.

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 pool is not in accordance with Figure ~~[~~3.7.~~18~~ 17-1~~]~~, immediate action must be taken to make the necessary fuel assembly movement(s) to bring the configuration into compliance with Figure ~~[~~3.7.~~18~~ 17-1~~]~~. 2

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 operation. Therefore, in either case, inability to move fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~18~~ 17.1

This SR verifies by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with Figure ~~[~~3.7.~~18~~ 17-1~~]~~ in the accompanying LCO and Specification 4.3.1.1. ~~For fuel assemblies in the unacceptable range of [Figure 3.7.18-1], performance of this SR will ensure compliance with Specification 4.3.1.1.~~

REFERENCES

~~None.~~

1. UFSAR, Section 9.1.2
2. PVNGS Operating License Amendments 82, 69, and 54 for Units 1, 2, and 3 respectively, and associated NRC Safety Evaluation dated September 30, 1994.

NUREG-1432 EXCEPTIONS
SPECIFICATION 3.7.17

1. NUREG-1432 LCO 3.7.18 contains requirements for storage of spent fuel according to initial enrichment and existing burnup. These requirements are presented as an example of a spent fuel pool with 2 regions. The current licensing bases for the PVNGS spent fuel pool storage racks allows storage in 3 regions. Region 1 is a checkerboard pattern. Fresh fuel assemblies with a maximum radially averaged enrichment equal to 4.3 weight percent U-235 are stored in region 1. Fuel that qualifies to be stored in regions 2 and 3 may also be stored in region 1. Region 2 is limited to a 3 out of four storage arrangement. Fuel that qualifies to be stored in regions 2 or 3 may be stored in region 2. In region 3, fuel may be stored in a 4 out of 4 arrangement. Only fuel that qualifies to be stored in region 3 may be stored in region 3.

   The changes to NUREG-1432 assure that storage of the fuel is in accordance with the design features and that K_{eff} will be limited to 0.95 in the event of an accident. This change does not impact safety and is consistent with PVNGS current licensing bases.

2. Grammar and/or editorial changes have been made to enhance clarity. No technical or intent changes to the Specification are made by this change.

3. The plant specific titles, nomenclature, number parameter/value, reference, system description, system design, operating practices or analysis description was used (additions, deletions, and/or changes are included). Plant specific parameters/values were directly transferred from the CTS to the ITS, or from the plant design basis to the ITS. The Bases have been revised to be consistent with the LCO/Surveillance.

PVNGS CTS
SPECIFICATION 3.7.17
MARK UP

Specification 3.7.17
(3.7.17/4.0)

DESIGN FEATURES

5.3 FUEL STORAGE (Continued)

ITS 4.0 5.3.1.2 The spent fuel storage pool is organized into three regions for spent fuel storage. Fuel shall be placed in the appropriate region based on

LCO 3.7.17 SR 3.7.17.1 ITS 3.7.17 appropriate initial enrichment and existing burnup as designated in Figure ~~5.3-1~~ 3.7.17-1 (A.1)

ITS 4.0

a. Region 1: Fuel shall be stored in a checkerboard (two-out-of-four) storage pattern. Fuel that qualifies to be stored in Regions 1, 2, or 3 in accordance with Figure 5.3-1, may be stored in Region 1.

b. Region 2: Fuel shall be stored in a three-out-of-four storage pattern. Fuel that qualifies to be stored in Regions 2 or 3, in accordance with Figure 5.3-1, may be stored in Region 2.

c. Region 3: Fuel shall be stored in a four-out-of-four storage pattern. Only fuel that qualifies to be stored in Region 3, in accordance with Figure 5.3-1, shall be stored in Region 3.

5.2.1.3 The new fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum radially averaged U-235 enrichment of 4.30 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.1 of the UFSAR;

c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.1.1 of the UFSAR; and

d. A nominal 17 inch center-to-center distance between fuel assemblies placed in the storage racks.

DRAINAGE

5.3.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 137 feet - 6 inches.

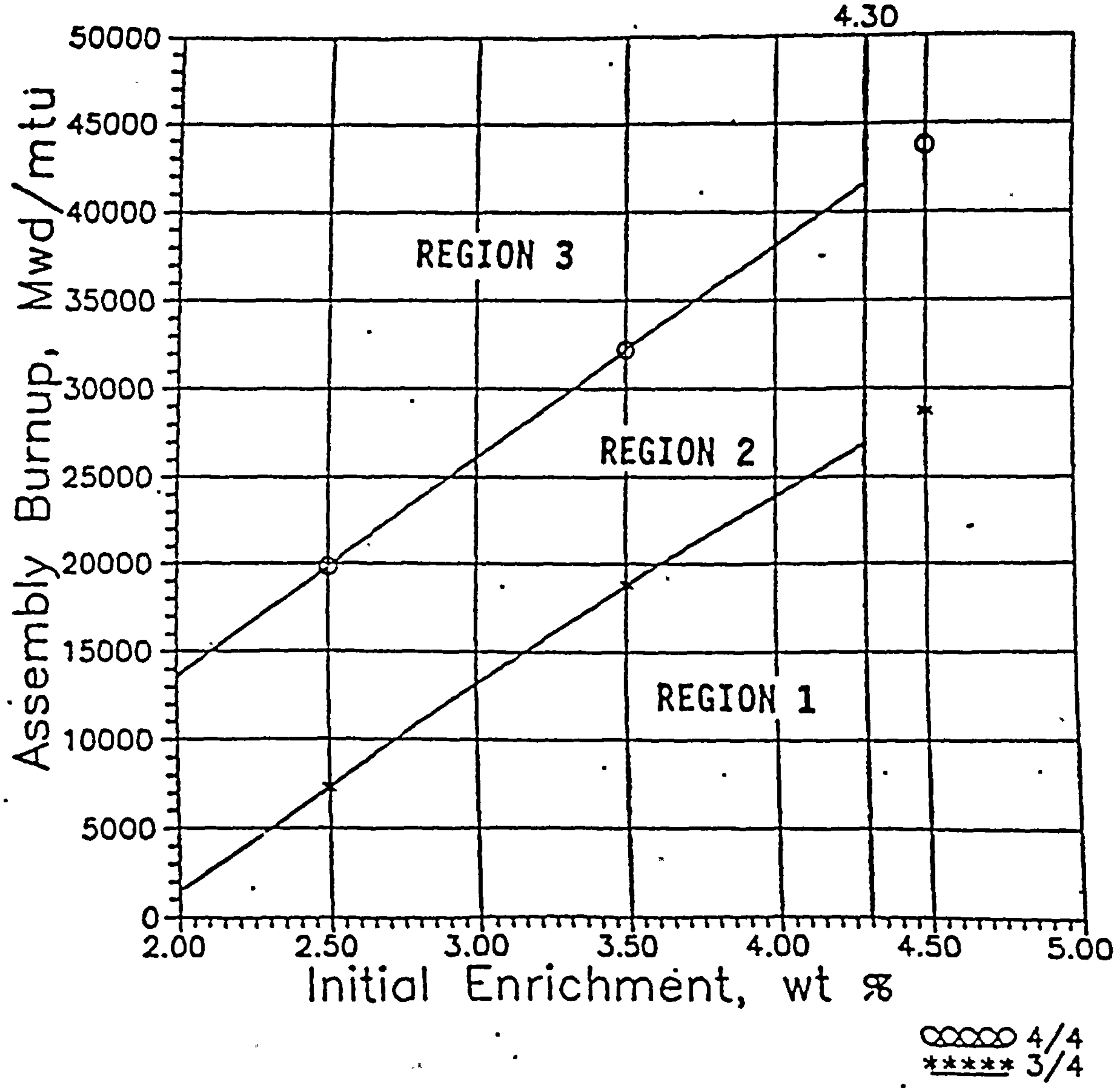
CAPACITY

5.3.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1329 fuel assemblies.

Specification 3.7.17

(A.1)

FIGURE ~~5.3-1~~ 3.7.17-1
ASSEMBLY BURNUP VERSUS INITIAL ENRICHMENT



DISCUSSION OF CHANGES
SPECIFICATION 3.7.17

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering is in accordance with the Combustion Engineering Plant (CEOG) Standard Technical Specifications NUREG-1432, Rev. 1 (NUREG-1432). As a result, the Palo Verde Nuclear Generating Station (PVNGS) Improved Technical Specifications (ITS) should be more readable, and therefore understandable, by plant operators as well as other users. During the reformatting and renumbering of the ITS, no technical changes (either actual or interpretational) to the Current Technical Specification (CTS) were made unless they were identified and justified.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During NUREG-1432 development, certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or interpretational) to the CTS.

Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more detail does not result in a technical change.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 There is no LCO associated with spent fuel assembly storage contained in the CTS. ITS 3.7.17 contains requirements for the allowed storage locations within the spent fuel storage racks depending on initial enrichment and existing burnup. The design features associated with fuel storage are contained in CTS 5.3 and ITS 4.3. ITS LCO ensures that the requirements of the design features are complied with. Addition of this specification does not alter any of the requirements of the design features. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

None.

TECHNICAL CHANGES - CTS CHANGES

None

NO SIGNIFICANT HAZARDS CONSIDERATION
SPECIFICATION 3.7.17

ADMINISTRATIVE CHANGES
(ITS 3.7.17 Discussion of Changes Labeled A.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, is converting to the ITS as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." The proposed changes involve the reformatting, renumbering, rewording of the Technical Specifications (TS) and Bases with no change in intent, and the incorporation of current operating practices consistent with NUREG-1432. These changes, since they do not involve technical changes to the Current TS (CTS), are administrative. Below are the No Significant Hazards Consideration (NSHC) for the conversion of this Section/Chapter to NUREG-1432.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS and Bases along with incorporation of PVNGS current operating practices and other changes to the CTS as discussed in the specific Discussion of Changes listed above in order to be consistent with NUREG-1432. The reformatting, renumbering, and rewording along with the other changes listed above, involves no technical changes to the CTS. Specifically, there will be no change in the requirements imposed on PVNGS due to these changes. During development of NUREG-1432, certain wording preferences or English language conventions were adopted. The proposed changes to this Specification are administrative in nature and do not impact initiators of any analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ADMINISTRATIVE CHANGES
(ITS 3.7.17 Discussion of Changes Labeled A.1) (continued)

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or change the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

> The proposed changes involve reformatting, renumbering, and rewording of the CTS, along with the incorporation of PVNGS current operating practices and other changes, as discussed, in order to be consistent with NUREG-1432. The proposed changes are administrative in nature and will not involve any technical changes. The proposed changes will not reduce a margin of safety because they have no impact on any safety analysis assumptions. Also, because these changes are administrative in nature, no question of safety is involved. Therefore, these changes do not involve a significant reduction in a margin of safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.17 Discussion of Changes Labeled M.1)

Arizona Public Service Company, Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3 is converting to the ITS as outlined in NUREG-1432. This particular NSHC is for the changes labeled "Technical Changes - More Restrictive" described in the specific Discussion of Changes listed above. The proposed changes incorporate more restrictive changes into the CTS by either making current requirements more stringent or adding new requirements which currently do not exist.

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration if operation of the facility, in accordance with a proposed amendment, would not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. A discussion of these standards as they relate to this amendment request follows:

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

> The proposed changes provide more stringent requirements than previously existed in the CTS. The more stringent requirements will not result in operation that will increase the probability of initiating an analyzed event. If anything, the new requirements may decrease the probability or consequences of an analyzed event by incorporating the more restrictive changes discussed in the specific Discussion of Changes listed above. These changes will not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements will not alter the operation and will continue to ensure process variables, structures, systems, or components are maintained consistent with safety analyses and licensing basis. These changes have been reviewed to ensure that no previously evaluated accident has been adversely affected. Therefore, these changes will not involve a significant increase in the probability or consequences of an accident evaluated.

TECHNICAL CHANGES - MORE RESTRICTIVE
(ITS 3.7.17 Discussion of Changes Labeled M.1) (continued)

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

Making existing requirements more restrictive and adding more restrictive requirements to the CTS will not alter the plant configuration (no new or different type of equipment will be installed) or change the methods governing normal plant operation. These changes do impose different requirements. However, they are consistent with the assumptions made in the safety analyses, licensing basis, and NUREG-1432. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes provide more stringent requirements than previously existed in the CTS. An evaluation of these changes concluded that adding these more restrictive requirements either increases or has no impact on the margin of safety. The changes provide additional restrictions which may enhance plant safety. These changes maintain requirements of the safety analysis, licensing basis, and NUREG-1432. As such, no question of safety is involved. Therefore, these changes will not involve a significant reduction in a margin of safety.

ENVIRONMENTAL ASSESSMENT

These proposed TS changes have been evaluated against the criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed changes meet the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). The following is a discussion of how the proposed TS changes meet the criteria for categorical exclusion.

10 CFR 51.22(c)(9): Although the proposed changes involve changes to requirements with respect to inspection or Surveillance Requirements with;

(i) the proposed changes involve No Significant Hazards Consideration (refer to the No Significant Hazards Consideration Section of this Technical Specification Change Request),

(ii) there is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite since the proposed changes do not affect generation of any radioactive effluent not do they affect any of the permitted release paths, and

(iii) there is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned and pursuant to 10 CFR 51.22(b), no environmental assessment or environmental impact statement need be prepared in connection with issuance of an amendment to the Technical Specifications incorporating the proposed changes of this request.