3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and

b. Two Diesel Generators (DGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 (offsite source check) for OPERABLE offsite circuit. AND A.2 Restore offsite circuit to OPERABLE status.	1 hour AND Once per 8 hours thereafter 72 hours AND 10 days from discovery of failure to meet LCO

10710

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One DG inoperable.	B.1	Perform SR 3.8.1.1 (offsite source check) for the OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
	B.3.1	Determine OPERABLE DG is not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 (start test) for OPERABLE DG.	24 hours
	AND		
	B.4	Restore DG to OPERABLE status.	7 days AND 10 days from discovery of failure to meet LCO

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ---------- Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months ↓ AND 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in MODES 5 and 6.

The SRs from LCO 3.8.1 which are required are those which both support a feature required in MODES 5 and 6 and which can be performed without effecting the OPERABILITY or reliability of the required sources.

AFFECTING

With only one DG available, many tests cannot be performed since their performance would render that DG inoperable during the test. This is the case for tests which require DG loading: SRs 3.8.1.3, 3.8.1.5, 3.8.1.6, 3.8.1.7, 3.8.1.8, 3.8.1.9, 3.8.1.10, and 3.8.1.11.

REFERENCES None

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the "as found" condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelop the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

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A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance are consistent with the recommendations of IEEE-450 (Ref. 4) and IEEE-485 (Ref. 3). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 4), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 4).

The reason for the restriction that the plant be outside of MODES 1, 2, 3, and 4 is that performing the Surveillance requires disconnecting the battery from the DC distribution buses and connecting it to a test load resistor bank. This action makes the battery inoperable and completely unavailable for use.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17

2. FSAR, Chapter 8

3. IEEE-485-1983, June 1983

4. IEEE-450-1995

5. Letter; Graham Walker, C&D Charter Power Systems, Inc to John Slinkard, Consumers Power Company, 12 July 1996

6. Regulatory Guide 1.32, February 1977

7. Regulatory Guide 1.129, December 1974

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BASES

APPLICABILITY (continued)

This LCO is applicable during movement of irradiated fuel assemblies even if the plant is in a condition other than MODE 5 or 6. This LCO provides the necessary ACTIONS if the DC electrical power sources required by this LCO become unavailable during movement of irradiated fuel assemblies.

The DC source requirements for MODES 1, 2, 3, and 4 are addressed in LCO 3.8.4, "DC Sources - Operating."

ACTIONS

A.1

Since the required DC source is only required to support features required by other LCOs, the option to declare those required features with no DC power available to be inoperable, assures that appropriate ACTIONS will be implemented in accordance with the affected LCOs.

A.2.1, A.2.2, A.2.3, and A.2.4

Required Action A.1 may involve undesired and unnecessary administrative efforts, therefore, Required Actions A.2.1 through A.2.4 provide alternate, but sufficiently conservative, actions.

Required Actions A.2.1 through A.2.4 require suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions. The suspension of CORE ALTERATIONS and movement of irradiated fuel assemblies does not preclude actions to place a fuel assembly in a safe location; the suspension of positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the required SHUTDOWN MARGIN is maintained.

These ACTIONS minimize the probability or the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC sources (and to continue this action until restoration is accomplished) in order to provide the necessary DC power to the plant safety systems.

BASES

ACTIONS

A.2.1, A.2.2, A.2.3, and A.2.4 (continued)

The Completion Time of "immediately" is consistent with the required times for actions requiring prompt attention. The restoration of the required DC power sources should be completed as quickly as possible in order to minimize the time during which the plant safety systems may be without sufficient control and Preferred AC power.

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

SR 3.8.5.1 requires the SRs from LCO 3.8.4 that are necessary for ensuring the OPERABILITY of the AC sources in MODES 5 and 6.

AFFECTING

The SRs from LCO 3.8.4 which are required are those which can be performed without effecting the OPERABILITY or reliability of the required DC source. With only one battery available, loading tests cannot be performed since their performance would render that battery inoperable during the test. This is the case for SRs 3.8.4.7 and 3.8.4.8.

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REFERENCES None

BASES

APPLICABILITY (continued)

This LCO is applicable during movement of irradiated fuel assemblies even if the plant is in a condition other than MODE 5 or 6. This LCO provides the necessary ACTIONS if the electrical power distribution subsystems required by this LCO become unavailable during movement of irradiated fuel assemblies.

The electrical power distribution subsystem requirements for MODES 1, 2, 3, and 4 are addressed in LCO 3.8.9, "Distribution Systems - Operating."

ACTIONS

A.1

Since the distribution systems are only required to support features required by other LCOs, the option to declare those affected required features to be inoperable assures that appropriate ACTIONS will be implemented in accordance with the affected LCOs.

A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

Required Action A.1 may involve undesired and unnecessary administrative efforts, therefore, Required Actions A.2.1 through A.2.5 provide alternate, but sufficiently conservative, actions.

Required Actions A.2.1, A.2.2, A.2.3, and A.2.5 require suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions, and declaration that affected shutdown cooling trains are inoperable. The suspension of CORE ALTERATIONS and movement of irradiated fuel assemblies does not preclude actions to place a fuel assembly in a safe location; the suspension of positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the required SHUTDOWN MARGIN is maintained.

These ACTIONS minimize the probability or the occurrence of postulated events. It is further required (Required Action A.2.4) to immediately initiate action to restore the required distribution subsystems (and to continue this action until restoration is accomplished) in order to provide the necessary electrical power to the plant safety systems.

Change	Discussion
Note:	The CTS Bases for Electrical Power Systems are unique in they have been upgraded to incorporate the format, and much of the content, of NUREG-1432. These Bases have previously been reviewed and found acceptable by the NRC in support of amendment ### to the Palisades Technical Specifications dated {XXXXX ##, ####}. To facilitate the review of the proposed Bases for ITS Section 3.8, a markup of the CTS Electrical Power Systems Bases has been provided which denotes only those differences between the previously approved CTS Bases and the proposed ITS Bases. In addition, a separate "red-line & strikeout" version of NUREG-1432, has been provided and will serve as a comparison between the CTS and NUREG-1432.

180

April 29, 1998

A brief discussion of the deviations from the CTS Bases is provided below. The Change Numbers correspond to the respective deviation shown on the "CTS MARKUPS". The first five justifications were used generically throughout the markup of the CTS Bases.

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. Deviations have been made for clarity, grammatical preference, or to establish consistency within the Improved Technical Specifications. These deviations are editorial in nature and do not involve technical changes or changes of intent.

3. The requirement/statement has been deleted since it is not applicable to this facility. The following requirements have been renumbered, where applicable, to reflect this deletion.

4. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the facility specific nomenclature, number, reference, system description, or analysis description.

ATTACHMENT 3

CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET 50-255

CONVERSION TO IMPROVED TECHNICAL SPECIFICATIONS
RESPONSE TO JULY 27, 1998 REQUEST FOR ADDITIONAL INFORMATION

REVISED PAGES FOR SECTION 3.8

CONVERSION TO IMPROVED TECHNICAL SPECIFICATIONS
RESPONSE TO JULY 27, 1998 REQUEST FOR ADDITIONAL INFORMATION
REVISED PAGES FOR SECTION 3.8

Page Change Instructions

Revise the Palisades submittal for conversion to Improved Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by date and contain vertical lines in the margin indicating the areas of change.

REMOVE PAGES	INSERT PAGES	REV DATE	NRC COMMENT #
INTRODUCTION			
ATTACHMENT 1 TO ITS CONVERSION SUBMITTAL			
3.8.1-1	3.8.1-1	09/04/98	N/A editorial
3.8.1-2	3.8.1-2	09/04/98	N/A editorial
3.8.3-1	3.8.3-1	09/04/98	RAI 3.8.3-02
3.8.3-2	3.8.3-2	09/04/98	RAI 3.8.3-02
3.8.4-4	3.8.4-4	09/04/98	N/A editorial
3.8.9-1	3.8.9-1	09/04/98	RAI 3.8.9-01
			RAI 3.8.9-02
			RAI 3.8.9-03
ATTACHMENT 2 TO ITS CONVERSION SUBMITTAL			
B 3.8.2-1	B 3.8.2-1	09/04/98	N/A editorial
B 3.8.2-2	B 3.8.2-2	09/04/98	RAI 3.8.2-01
B 3.8.2-4	B 3.8.2-4	09/04/98	N/A editorial
B 3.8.3-1	B 3.8.3-1	09/04/98	RAI 3.8.3-06
			RAI 3.8.3-07
B 3.8.3-2	B 3.8.3-2	09/04/98	RAI 3.8.3-05
			RAI 3.8.3-06
			RAI 3.8.3-07
			RAI 3.8.3-02
B 3.8.3-4	B 3.8.3-4	09/04/98	RAI 3.8.3-08
			RAI 3.8.3-02
B 3.8.4-2	B 3.8.4-2	09/04/98	RAI 3.8.4-02
B 3.8.4-10	B 3.8.4-10	09/04/98	N/A editorial
B 3.8.4-11	B 3.8.4-11	09/04/98	N/A editorial
B 3.8.5-1	B 3.8.5-1	09/04/98	RAI 3.8.5-02
			RAI 3.8.5-03
B 3.8.5-2	B 3.8.5-2	09/04/98	N/A editorial
B 3.8.5-3	B 3.8.5-3	09/04/98	N/A editorial
B 3.8.6-1	B 3.8.6-1	09/04/98	RAI 3.8.6-01
B 3.8.7-1	B 3.8.7-1	09/04/98	RAI 3.8.7-01
B 3.8.7-3	B 3.8.7-3	09/04/98	RAI 3.8.7-02
B 3.8.8-1	B 3.8.8-1	09/04/98	RAI 3.8.8-01
			RAI 3.8.8-02

REMOVE PAGES	INSERT PAGES	REV DATE	NRC COMMENT #
ATTACHMENT 2 TO ITS CONVERSION SUBMITTAL (continued)			
B 3.8.9-1	B 3.8.9-1	09/04/98	RAI 3.8.9-08
B 3.8.9-3	B 3.8.9-3	09/04/98	RAI 3.8.9-05
B 3.8.9-5	B 3.8.9-5	09/04/98	RAI 3.8.9-04
B 3.8.9-6	B 3.8.9-6	09/04/98	RAI 3.8.9-06
			RAI 3.8.9-07
B 3.8.10-1	B 3.8.10-1	09/04/98	RAI 3.8.10-02
			RAI 3.8.10-03
B 3.8.10-2	B 3.8.10-2	09/04/98	N/A editorial
ATTACHMENT 3 TO ITS CONVERSION SUBMITTAL			
DOC 3.8.1 pg 3 of 4	3.8.1 pg 3 of 4	09/04/98	N/A editorial
DOC ----------	3.8.1 pg 4 of 4	09/04/98	RAI 3.8.1-03
CTS 3.8.1 pg 4 of 5	3.8.1 pg 4 of 5	09/04/98	RAI 3.8.1-10
DOC 3.8.3 pg 1 of 1	3.8.3 pg 1 of 2	09/04/98	RAI 3.8.3-01
			RAI 3.8.3-04
DOC 3.8.3 pg 1 of 1	3.8.3 pg 2 of 2	09/04/98	RAI 3.8.3-03
CTS 3.8.3 pg 2 of 4	3.8.3 pg 2 of 4	09/04/98	RAI 3.8.3-01
CTS 3.8.3 pg 2 of 4	3.8.3 pg 2 of 4	09/04/98	RAI 3.8.3-03
CTS 3.8.3 pg 4 of 4	3.8.3 pg 4 of 4	09/04/98	RAI 3.8.3-04
DOC 3.8.4 pg 2 of 3	3.8.4 pg 2 of 3	09/04/98	RAI 3.8.4-01
DOC 3.8.9 pg 1 of 2	3.8.9 pg 1 of 2	09/04/98	RAI 3.8.9-06
CTS 3.8.9 pg 1 of 3	3.8.9 pg 1 of 3	09/04/98	RAI 3.8.9-06
DOC 3.8.10 pg 1 of 1	3.8.10 pg 1 of 2	09/04/98	RAI 3.8.10-01
CTS 3.8.10 pg 1 of 2	3.8.10 pg 1 of 2	09/04/98	RAI 3.8.10-01
DOC 3.8.10 pg 1 of 1	3.8.10 pg 2 of 2	09/04/98	N/A editorial
DOC 3.8.9 pg 2 of 2	3.8.9 pg 2 of 2	09/04/98	N/A editroial
ATTACHMENT 4 TO ITS CONVERSION SUBMITTAL			
No change			
ATTACHMENT 5 TO ITS CONVERSION SUBMITTAL			
3.8.7	3.8.7	09/04/98	RAI 3.8.1-07
3.8.9	[illegible]	09/04/98	RAI 3.8.1-08
			RAI 3.8.1-09
3.8.22	3.8.22	09/04/98	RAI 3.8.3-02
3.8.23	3.8.23	09/04/98	RAI 3.8.3-02
3.8.39	3.8.39	09/04/98	RAI 3.8.9-01
			RAI 3.8.9-02
			RAI 3.8.9-03

ATTACHMENT 6 TO ITS CONVERSION SUBMITTAL

3.8.1 pg 1 of 3	3.8.1 pg 1 of 4	09/04/98	N/A editorial
3.8.1 pg 2 of 3	3.8.1 pg 2 of 4	09/04/98	RAI 3.8.1-05
3.8.1 pg 3 of 3	3.8.1 pg 3 of 4	09/04/98	RAI 3.8.1-07
			RAI 3.8.1-08
			RAI 3.8.1-09
----------	3.8.1 pg 4 of 4	09/04/98	N/A editorial
3.8.4 pg 1 of 1	3.8.4 pg 1 of 2	09/04/98	N/A editorial
3.8.4 pg 1 of 1	3.8.4 pg 2 of 2	09/04/98	RAI 3.8.4-01
3.8.5 pg 1 of 1	3.8.5 pg 1 of 1	09/04/98	RAI 3.8.5-01

ATTACHMENT 7 TO ITS CONVERSION SUBMITTAL

B 3.7.2-2	B 3.7.2-2	09/04/98	RAI 3.8.2-01
B 3.7.3-1	B 3.7.3-1	09/04/98	RAI 3.8.2-05
B 3.7.3-1 Insert	B 3.7.3-1 Insert	09/04/98	RAI 3.8.3-07
B 3.7.3-2	B 3.7.3-2	09/04/98	RAI 3.8.3-02
B 3.7.3-2 Insert	B 3.7.3-2 Insert	09/04/98	RAI 3.8.3-06
B 3.7.3-3	B 3.7.3-3	09/04/98	RAI 3.8.3-02
			RAI 3.8.3-08
B 3.7.3-4	B 3.7.3-4	09/04/98	RAI 3.8.3-04
B 3.7.4-2	B 3.7.4-2	09/04/98	RAI 3.8.4-02
B 3.7.5-1	B 3.7.5-1	09/04/98	RAI 3.8.5-02
			RAI 3.8.5-03
B 3.7.6-1	B 3.7.6-1	09/04/98	RAI 3.8.6-01
B 3.7.7-1	B 3.7.7-1	09/04/98	RAI 3.8.7-01
B 3.7.7-3	B 3.7.7-3	09/04/98	RAI 3.8.7-02
B 3.7.8-1	B 3.7.8-1	09/04/98	RAI 3.8.8-01
			RAI 3.8.8-02
B 3.7.9-1	B 3.7.9-1	09/04/98	RAI 3.8.9-08
B 3.7.9-2	B 3.7.9-2	09/04/98	RAI 3.8.9-05
B 3.7.9-4	B 3.7.9-4	09/04/98	RAI 3.8.9-04
			RAI 3.8.9-06
B 3.7.9-5	B 3.7.9-5	09/04/98	RAI 3.8.9-07
B 3.7.10-1	B 3.7.10-1	09/04/98	RAI 3.8.10-02
			RAI 3.8.10-03

ATTACHMENT 8 TO ITS CONVERSION SUBMITTAL

3.8 pg 1 of 3	3.8 pg 1 of 3	09/04/98	N/A editorial
3.8 pg 2 of 3	3.8 pg 2 of 3	09/04/98	RAI 3.8.01-11
3.8 pg 3 of 3	3.8 pg 3 of 3	09/04/98	N/A editorial

ATTACHMENT 9 TO ITS CONVERSION SUBMITTAL

No change

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and

b. Two Diesel Generators (DGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 (offsite source check) for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Restore offsite circuit to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet LCO

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One DG inoperable.	B.1	Perform SR 3.8.1.1 (offsite source check) for the OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
	B.3.1	Determine OPERABLE DG is not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 (start test) for OPERABLE DG.	24 hours
	AND		
	B.4	Restore DG to OPERABLE status.	7 days AND 10 days from discovery of failure to meet LCO

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel, Lube Oil, and Starting Air

LCO 3.8.3 For each Diesel Generator (DG):

a. The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits, and

b. Both diesel fuel oil transfer systems shall be OPERABLE.

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Fuel oil inventory < 23,700 gallons and > 20,110 gallons in storage tank.	A.1	Restore fuel oil inventory to within limits.	48 hours
B. Stored lube oil inventory < 200 gallons and > 160 gallons.	B.1	Restore stored lube oil inventory to within limits.	48 hours
C. Fuel transfer system (P-18A) inoperable.	C.1	Restore fuel transfer system to OPERABLE status.	15 hours
D. Fuel transfer system (P-18B) inoperable.	D.1	Restore fuel transfer system to OPERABLE status.	7 days

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Both fuel transfer systems inoperable.	E.1	Restore one fuel transfer system to OPERABLE status.	8 hours
F. Fuel oil properties other than viscosity, and water and sediment, not within limits.	F.1	Restore stored fuel oil properties to within limits.	30 days
G. Required Action and associated Completion Time not met. OR Stored diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, or F.	G.1	Declare associated DG(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ----------	
	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

LCO 3.8.9 Left Train and Right Train AC, DC, and Preferred AC bus electrical power distribution subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more AC electrical power distribution subsystems in one train inoperable.	A.1	Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO
B. One Preferred AC bus inoperable.	B.1	Restore Preferred AC bus to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO
C. One or more DC electrical power distribution subsystems in one train inoperable.	C.1	Restore DC electrical power distribution subsystem(s) to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO

BASES

LCO (continued)

An OPERABLE DG, associated with a distribution subsystem required to be OPERABLE by LCO 3.8.10, ensures a diverse power source is available to provide electrical power support, assuming a loss of the offsite circuit.

Together, OPERABILITY of the required offsite circuit and DG ensures the availability of sufficient AC sources to operate the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and loss of shutdown cooling).

The DG must be capable of starting, accelerating to rated speed and voltage, connecting to its respective 2400 V bus on detection of bus undervoltage, and accepting required loads. Proper "Normal Shutdown" loading sequence, and tripping of nonessential loads, is a required function for DG OPERABILITY. A Service Water Pump must be started soon after the DG to assure continued DG operability. The DBA loading sequence is not required to be OPERABLE since the Safety Injection Signal is disabled during MODES 5 and 6.

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies provide assurance that equipment and instrumentation is available to:

a. Provide coolant inventory makeup,

b. Mitigate a fuel handling accident,

c. Mitigate shutdown events that can lead to core damage, and

d. Monitor and maintain the plant in a cold shutdown condition or refueling condition.

This LCO is applicable during movement of irradiated fuel assemblies even if the plant is in a condition other than MODES 5 and 6. This LCO provides the necessary ACTIONS if the AC electrical power sources required by this LCO become unavailable during movement of irradiated fuel assemblies.

The AC source requirements for MODES 1, 2, 3, and 4 are addressed in LCO 3.8.1, "AC Sources - Operating."

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in MODES 5 and 6.

The SRs from LCO 3.8.1 which are required are those which both support a feature required in MODES 5 and 6 and which can be performed without affecting the OPERABILITY or reliability of the required sources.

With only one DG available, many tests cannot be performed since their performance would render that DG inoperable during the test. This is the case for tests which require DG loading: SRs 3.8.1.3, 3.8.1.5, 3.8.1.6, 3.8.1.7, 3.8.1.8, 3.8.1.9, 3.8.1.10, and 3.8.1.11.

REFERENCES

None

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel, Lube Oil, and Starting Air

BASES

BACKGROUND

The Diesel Generators (DGs) are provided with a storage tank having a required fuel oil inventory sufficient to operate one diesel for a period of 7 days, while the DG is supplying maximum post-accident loads. This onsite fuel oil capacity is sufficient to operate the DG for longer than the time to replenish the onsite supply from offsite sources.

Fuel oil is transferred from the Fuel Oil Storage Tank to either day tank by either of two Fuel Transfer Systems. The fuel oil transfer system which includes fuel transfer pump P-18A can be powered by offsite power, or by either DG. However, the fuel oil transfer system which includes fuel transfer pump P-18B can only be powered by offsite power, or by DG 1-1.

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide (RG) 1.137 (Ref. 1) addresses the recommended fuel oil practices as supplemented by ANSI N195-1976 (Ref. 2).

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient supply to allow the operator to replenish lube oil from offsite sources. Implicit in this LCO is the requirement to assure, though not necessarily by testing, the capability to transfer the lube oil from its storage location to the DG oil sump, while the DG is running.

Each DG is provided with an associated starting air subsystem to assure independent start capability. The starting air system is required to have a minimum capacity with margin for a DG start attempt without recharging the air start receivers.

BASES

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.8.1, "AC Sources - Operating"; during MODES 5 and 6, in the Bases for LCO 3.8.2, "AC Sources - Shutdown." Since diesel fuel, lube oil, and starting air subsystems support the operation of the standby AC power sources, they satify Criterion 3 of 10 CFR 50.36(c)(2).

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of full accident load operation. It is also required to meet specific standards for quality. The specified 7 day requirement and the 6 day quantity listed in Condition A are taken from the Engineering Analysis associated with Event Report E-PAL-93-026B. Additionally, the ability to transfer fuel oil from the storage tank to each day tank is required from each of the two transfer pumps.

Additionally, sufficient lube oil supply must be available to ensure the capability to operate at full accident load for 7 days. This requirement is in addition to the lube oil contained in the engine sump. The specified 7 day requirement and the 6 day quantity listed in Condition B are based on an assumed lube oil consumption of 0.8 to 1.0% of fuel oil consumption.

The starting air subsystem must provide, without the aid of the refill compressor, sufficient air start capacity, including margin, to assure start capability for its associated DG.

These requirements, in conjunction with an ability to obtain replacement supplies within 7 days, support the availability of the DGs. DG day tank fuel requirements are addressed in LCOs 3.8.1 and 3.8.2.

APPLICABILITY

DG OPERABILITY is required by LCOs 3.8.1 and 3.8.2 to ensure the availability of the required AC power to shut down the reactor and maintain it in a safe shutdown condition following a loss of off-site power. Since diesel fuel, lube oil, and starting air support LCOs 3.8.1 and 3.8.2, stored diesel fuel oil, lube oil, and starting air are required to be within limits, and the fuel transfer system is required to be OPERABLE, when either DG is required to be OPERABLE.

BASES

ACTIONS (continued)

F.1

With the stored fuel oil properties, other than viscosity, and water and sediment, defined in the Fuel Oil Testing Program not within the required limits, but acceptable for short term DG operation, a period of 30 days is allowed for restoring the stored fuel oil properties. The most likely cause of stored fuel oil becoming out of limits is the addition of new fuel oil with properties that do not meet all of the limits. This 30 day period provides sufficient time to determine if new fuel oil, when mixed with stored fuel oil, will produce an acceptable mixture, or if other methods to restore the stored fuel oil properties are required. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

G.1

With a Required Action and associated Completion Time not met, or with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than addressed by Conditions A, B, or F, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

In the event that diesel fuel oil with viscosity, or water and sediment is out of limits, this would be unacceptable for even short term DG operation. Viscosity is important primarily because of its effect on the handling of the fuel by the pump and injector system; water and sediment provides an indication of fuel contamination. When the fuel oil stored in the Fuel Oil Storage Tank is determined to be out of viscosity, or water and sediment limits, the DGs must be declared inoperable, immediately.

BASES

BACKGROUND (continued)

The batteries for the DC power sources are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The voltage limit is 2.13 V per cell, which corresponds to a total minimum voltage output of 125.7 V per battery discussed in the FSAR, Chapter 8 (Ref. 2). The criteria for sizing large lead storage batteries are defined in IEEE-485 (Ref. 3).

Each DC electrical power source has ample power output capacity for the steady state operation of connected loads during normal operation, while at the same time maintaining its battery fully charged. Each battery charger also has sufficient capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads discussed in the FSAR, Chapter 8 (Ref. 2).

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.8.1, "AC Sources - Operating."

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2).

LCO

The DC power sources, each consisting of one battery, one directly connected battery charger and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train are required to be OPERABLE to ensure the availability of DC control power and Preferred AC power to shut down the reactor and maintain it in a safe condition.

An OPERABLE DC electrical power source requires its battery to be OPERABLE and connected to the associated DC bus. In order for the battery to remain OPERABLE, one charger must be in service.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the "as found" condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelop the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance are consistent with the recommendations of IEEE-450 (Ref. 4) and IEEE-485 (Ref. 3). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 4), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 4).

The reason for the restriction that the plant be outside of MODES 1, 2, 3, and 4 is that performing the Surveillance requires disconnecting the battery from the DC distribution buses and connecting it to a test load resistor bank. This action makes the battery inoperable and completely unavailable for use.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17

2. FSAR, Chapter 8

3. IEEE-485-1983, June 1983

4. IEEE-450-1995

5. Letter; Graham Walker, C&D Charter Power Systems, Inc to John Slinkard, Consumers Power Company, 12 July 1996

6. Regulatory Guide 1.32, February 1977

7. Regulatory Guide 1.129, December 1974

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.5 DC Sources - Shutdown

BASES

BACKGROUND

A description of the DC sources is provided in the Bases for LCO 3.8.4, "DC Sources - Operating."

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable during MODES 5 and 6 is provided in the Bases for LCO 3.8.2, "AC Sources - Shutdown."

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2).

LCO

This LCO requires those, and only those, DC power sources which supply the DC distribution subsystems required by LCO 3.8.10, to be OPERABLE. Each DC source consists of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling. This ensures the availability of sufficient DC power sources to maintain the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and loss of shutdown cooling).

APPLICABILITY

The DC power sources required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies provide assurance that equipment and instrumentation is available to:

a. Provide coolant inventory makeup,

b. Mitigate a fuel handling accident,

c. Mitigate shutdown events that can lead to core damage, and

d. Monitoring and maintaining the plant in a cold shutdown condition or refueling condition.

BASES

APPLICABILITY (continued)

This LCO is applicable during movement of irradiated fuel assemblies even if the plant is in a condition other than MODE 5 or 6. This LCO provides the necessary ACTIONS if the DC electrical power sources required by this LCO become unavailable during movement of irradiated fuel assemblies.

The DC source requirements for MODES 1, 2, 3, and 4 are addressed in LCO 3.8.4, "DC Sources - Operating."

ACTIONS

A.1

Since the required DC source is only required to support features required by other LCOs, the option to declare those required features with no DC power available to be inoperable, assures that appropriate ACTIONS will be implemented in accordance with the affected LCOs.

A.2.1, A.2.2, A.2.3, and A.2.4

Required Action A.1 may involve undesired and unnecessary administrative efforts, therefore, Required Actions A.2.1 through A.2.4 provide alternate, but sufficiently conservative, actions.

Required Actions A.2.1 through A.2.4 require suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions. The suspension of CORE ALTERATIONS and movement of irradiated fuel assemblies does not preclude actions to place a fuel assembly in a safe location; the suspension of positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the required SHUTDOWN MARGIN is maintained.

These ACTIONS minimize the probability or the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC sources (and to continue this action until restoration is accomplished) in order to provide the necessary DC power to the plant safety systems.

BASES

ACTIONS

A.2.1, A.2.2, A.2.3, and A.2.4 (continued)

The Completion Time of "immediately" is consistent with the required times for actions requiring prompt attention. The restoration of the required DC power sources should be completed as quickly as possible in order to minimize the time during which the plant safety systems may be without sufficient control and Preferred AC power.

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

SR 3.8.5.1 requires the SRs from LCO 3.8.4 that are necessary for ensuring the OPERABILITY of the AC sources in MODES 5 and 6.

The SRs from LCO 3.8.4 which are required are those which can be performed without affecting the OPERABILITY or reliability of the required DC source. With only one battery available, loading tests cannot be performed since their performance would render that battery inoperable during the test. This is the case for SRs 3.8.4.7 and 3.8.4.8.

REFERENCES

None

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Cell Parameters

BASES

BACKGROUND

This LCO delineates the limits on electrolyte temperature, level, float voltage, and specific gravity for the DC power source batteries. A discussion of these batteries is provided in the Bases for LCO 3.8.4, "DC Sources - Operating."

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable for MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.8.1, "AC Sources - Operating"; during MODES 5 and 6, in the Bases for LCO 3.8.2, "AC Sources - Shutdown."

Battery cell parameters satisfy Criterion 3 of 10 CFR 50.36(c)(2).

LCO

Battery cell parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Battery cell limits are conservatively established, allowing continued DC electrical system function even when Category A and B limits are not met.

The requirement to maintain the average temperature of representative cells above 70°F assures that the battery temperature is within the design band. Battery capacity is a function of battery temperature.

APPLICABILITY

The battery cell parameters are required solely for the support of the associated DC power sources. Therefore, they are only required when the DC power source is required to be OPERABLE. Refer to the Applicability discussions in the Bases for LCO 3.8.4 and LCO 3.8.5, "DC Sources - Shutdown."

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.7 Inverters - Operating

BASES

BACKGROUND

The inverters (ED-06, ED-07, ED-08, and ED-09) are the normal source of power for the Preferred AC buses. The function of the inverter is to provide continuous AC electrical power to the Preferred AC buses, even in the event of an interruption to the normal AC power distribution system. A Preferred AC bus can be powered from the AC power distribution system via the Bypass Regulator if its associated inverter is out of service. An interlock prevents supplying more than one Preferred AC bus from the bypass regulator at any time. The station battery provides an uninterruptable power source for the instrumentation and controls for the Reactor Protective System (RPS) and the Engineered Safety Features (ESF).

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.8.1, "AC Sources - Operating."

Inverters are part of the distribution system and, as such, satify Criterion 3 of 10 CFR 50.36(c)(2).

LCO

The inverters ensure the availability of Preferred AC power for the instrumentation required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA.

Maintaining the inverters OPERABLE ensures that the redundancy incorporated into the RPS and ESF instrumentation and controls is maintained. The four inverters ensure an uninterruptable supply of AC electrical power to the Preferred AC buses even if the 2400 V safety related buses are de-energized.

An inverter is considered inoperable if it is not powering the associated Preferred AC bus, or if its output voltage or frequency is not within tolerances.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

This Surveillance verifies that the inverters are functioning properly and energizing the Preferred AC buses. The verification of proper voltage and frequency output ensures that the required power is readily available for the instrumentation of the RPS and ESF connected to the Preferred AC buses. The 7 day Frequency takes into account indications available in the control room that alert the operator to inverter malfunctions.

REFERENCES

None

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.8 Inverters - Shutdown

BASES

BACKGROUND

A description of the inverters is provided in the Bases for LCO 3.8.7, "Inverters - Operating."

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable during MODES 5 and 6 is provided in the Bases for LCO 3.8.2, "AC Sources - Shutdown."

Inverters are part of the distribution system and, as such, satisfy Criterion 3 of 10 CFR 50.36(c)(2).

LCO

This LCO requires those, and only those, inverters necessary to support the Preferred AC buses required by LCO 3.8.10, "Distribution Systems - Shutdown," to be OPERABLE.

This ensures the availability of sufficient Preferred AC electrical power to operate the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and loss of shutdown cooling).

An inverter is considered inoperable if it is not powering the associated Preferred AC bus, or if its voltage or frequency is not within tolerances.

APPLICABILITY

The inverters required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies provide assurance that equipment and instrumentation is available to:

a. Provide coolant inventory makeup,

b. Mitigate a fuel handling accident,

c. Mitigate shutdown events that can lead to core damage, and

d. Monitoring and maintaining the plant in a cold shutdown condition or refueling condition.

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

BASES

BACKGROUND

The onsite Class 1E AC, DC, and Preferred AC bus electrical power distribution systems are divided into two redundant and independent electrical power distribution trains. Each electrical power distribution train is made up of several subsystems which include the safety related buses, load centers, motor control centers, and distribution panels shown in Table B 3.8.9-1.

The Class 1E 2400 V safety related buses, Bus 1C and Bus 1D, are normally powered from offsite, but can be powered from the DGs, as explained in the Background section of the Bases for LCO 3.8.1, "AC Sources - Operating." Each 2400 V safety related bus supplies one train of the Class 1E 480 V distribution system.

The 120 V Preferred AC buses are normally powered from the inverters. The alternate power supply for the buses is a constant voltage transformer, called the Bypass Regulator. Use of the Bypass regulator is governed by LCO 3.8.7, "Inverters - Operating." The bypass regulator is powered from the non-Class 1E instrument AC bus, Y-01. The Instrument AC bus is normally powered through an automatic bus transfer switch, an instrument AC transformer, and isolation fuses. Its normal power source is MCC-1. Loss of power to MCC-1 will cause automatic transfer of the Instrument AC bus to MCC-2.

There are two independent 125 V DC electrical power distribution subsystems.

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.8.1.

The distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2).

BASES

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that AC, DC, and Preferred AC power is available to the redundant trains and channels of safeguards equipment, instrumentation and controls required to support engineered safeguards equipment in the event of an accident or transient.

Electrical power distribution subsystem requirements for MODES 5 and 6, and during movement of irradiated fuel assemblies are addressed in LCO 3.8.10, "Distribution Systems - Shutdown."

ACTIONS

A.1

With one or more required AC buses, load centers, motor control centers, or distribution panels, except Preferred AC buses, in one train inoperable, the redundant AC electrical power distribution subsystem in the other train is capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because an additional failure in the power distribution systems could result in the minimum required ESF functions not being supported. Therefore, the required AC buses, load centers, motor control centers, and distribution panels must be restored to OPERABLE status within 8 hours.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combinations of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DC bus is inoperable and subsequently restored OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 16 hours, since initial failure of the LCO, to restore the AC distribution system. At this time, a DC circuit could again become inoperable, and AC distribution restored OPERABLE. This could continue indefinitely.

BASES

ACTIONS (continued)

C.1

With one or more DC bus in one train inoperable, the remaining DC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining DC electrical power distribution subsystem could result in the minimum required ESF functions not being supported. Therefore, the required DC buses must be restored to OPERABLE status within 8 hours by powering the bus from the associated battery or charger.

This 8 hour limit is more conservative than Completion Times allowed for the vast majority of components which would be without power and is a feature of the original Palisades licensing basis.

The second Completion Time for Required Action C.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single continuous occurrence of failing to meet the LCO. If Condition C is entered while, for instance, an AC bus is inoperable and subsequently restored OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 16 hours, since initial failure of the LCO, to restore the Preferred DC distribution system. At this time, a AC bus could again become inoperable, and Preferred AC distribution restored OPERABLE. This could continue indefinitely.

The Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time the LCO was initially not met, instead of the time Condition C was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

BASES

ACTIONS (continued)

D.1 and D.2

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

E.1

Condition E corresponds to a degradation in the electrical distribution system that causes a required safety function to be lost. When more than one Condition is entered, and this results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

This surveillance verifies that the required AC, DC, and Preferred AC bus electrical power distribution subsystems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained.

For those buses which have undervoltage alarms in the control room, correct voltage may be verified by the absence of an undervoltage alarm.

For those buses which have only one possible power source and have undervoltage alarms in the control room, correct breaker alignment may be verified by the absence of an undervoltage alarm.

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

BACKGROUND

A description of the AC, DC, and Preferred AC bus electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating."

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable during MODES 5 and 6 is provided in the Bases for LCO 3.8.2, "AC Sources - Shutdown."

The distribution system satisfy Criterion 3 of 10 CFR 50.36(c)(2).

LCO

This LCO requires those, and only those, AC, DC, and Preferred AC distribution subsystems to be OPERABLE which are necessary to support equipment required by other LCOs.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the plant in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

APPLICABILITY

The electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies, provide assurance that equipment and instrumentation is available to:

a. Provide coolant inventory makeup,

b. Mitigate a fuel handling accident,

c. Mitigate shutdown events that can lead to core damage, and

d. Monitoring and maintaining the plant in a cold shutdown condition and refueling condition.

BASES

APPLICABILITY (continued)

This LCO is applicable during movement of irradiated fuel assemblies even if the plant is in a condition other than MODE 5 or 6. This LCO provides the necessary ACTIONS if the electrical power distribution subsystems required by this LCO become unavailable during movement of irradiated fuel assemblies.

The electrical power distribution subsystem requirements for MODES 1, 2, 3, and 4 are addressed in LCO 3.8.9, "Distribution Systems - Operating."

ACTIONS

A.1

Since the distribution systems are only required to support features required by other LCOs, the option to declare those affected required features to be inoperable assures that appropriate ACTIONS will be implemented in accordance with the affected LCOs.

A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

Required Action A.1 may involve undesired and unnecessary administrative efforts, therefore, Required Actions A.2.1 through A.2.5 provide alternate, but sufficiently conservative, actions.

Required Actions A.2.1, A.2.2, A.2.3, and A.2.5 require suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions, and declaration that affected shutdown cooling trains are inoperable. The suspension of CORE ALTERATIONS and movement of irradiated fuel assemblies does not preclude actions to place a fuel assembly in a safe location; the suspension of positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the required SHUTDOWN MARGIN is maintained.

These ACTIONS minimize the probability or the occurrence of postulated events. It is further required (Required Action A.2.4) to immediately initiate action to restore the required distribution subsystems (and to continue this action until restoration is accomplished) in order to provide the necessary electrical power to the plant safety systems.

SR 3.8.1.6 4.7.1.8 Verify that each DG, operating at a power factor ≤ 0.9, does not trip, and voltage is maintained ≤ 4000 V during and following a load rejection of ≥ 2300 and ≤ 2500 kW; each 18 months.

SR 3.8.1.7 4.7.1.9* Verify; each 18 months; on an actual or simulated loss of offsite power:

a. De-energization of emergency buses;

b. Load shedding from emergency buses;

c. DG auto-starts from standby condition and:

1. Energizes permanently connected loads in ≤ 10 seconds,

2. Energizes auto-connected shutdown loads through the automatic load sequencer,

3. Maintains steady state voltage ≥ 2280 and ≤ 2520 V,

4. Maintains steady state frequency ≥ 59.5 and ≤ 61.2 Hz, and

5. Supplies permanently connected loads for ≥ 5 minutes.

A.2 <INSERT NOTE>

SR 3.8.1.8 4.7.1.10 Verify, each 18 months, that each DG operates at a power factor ≤ 0.9 for ≥ 24 hours:

a. For ≥ 100 minutes loaded above its peak accident loading, and

b. For the remainder of the test loaded ≥ 2300 and ≤ 2500 kW.

SR 3.8.1.9 4.7.1.11* Verify; each 18 months; that each DG:

a. Can be synchronized with offsite power while supplying its associated 2400 volt bus upon a simulated restoration of offsite power;

b. Can transfer loads to an offsite power source; and

c. Can be returned to ready-to-load operation.

SR 3.8.1.10 4.7.1.12* Verify the time of each sequenced load is within ± 0.3 seconds of the design timing for each automatic load sequencer; each 18 months.

SR NOTE * These tests must be performed in COLD SHUTDOWN or REFUELING SHUTDOWN.

3.8 ~~3.7~~ ELECTRICAL POWER SYSTEMS

3.8.3 ~~3.7.3~~ DG Fuel Oil and Lube Oil (A.1)

Specifications

LCO The stored DG fuel oil and DG lube oil shall be within limits. <ADD "fuel oil transfer system" and "starting air subsystem" to LCO.> (A.3)

Applicability

Specification 3.7.3 applies when any DG is required to be OPERABLE.

Action <ADD ACTIONS NOTE> (A.2)

Cond A 3.7.3.A With stored fuel oil inventory < 23,700 and ≥ 20,110 gallons:

1. Restore stored fuel oil inventory to within limits; within 48 hours.

Cond B 3.7.3.B With stored lube oil inventory < ~~175~~ 200 and ~~≥ 150~~ 160 gallons: (M.1)

1. Restore the lube oil inventory to within limits; within 48 hours.

Cond G 3.7.3.C With stored fuel oil viscosity, or water and sediment not within limits:

1. Declare both DGs inoperable, immediately.

Cond F 3.7.3.D With stored fuel oil properties other than viscosity, and water and sediment not within limits:

1. Restore stored fuel oil properties to within limits; within 30 days.

Cond G 3.7.3.E If any action required by 3.7.3.A through 3.7.3.D is not met and the associated completion time has expired, or if Specification 3.7.3 is not met for reasons other than those addressed in 3.7.3.A, through 3.7.3.D:

1. Declare both DGs inoperable; immediately.

Amendment No.

REVISED
09/04/98

3.8 ~~4.7~~ ELECTRICAL POWER SYSTEMS TESTS

A.1

~~4.7.2 AC Power Source Tests - Shutdown~~

~~4.7.2.1 Verify each AC power source required by Specification 3.7.2 is OPERABLE by the following surveillance. Credit may be taken for unplanned events that satisfy a surveillance requirement.~~

~~4.7.1.1, Offsite source check~~

~~4.7.1.2, DG starting test~~

~~4.7.1.4, DG starting air check~~

~~4.7.1.5, DG day tank level check~~

~~4.7.1.6, Fuel transfer check~~

(see 3.8.2)

3.8.3 ~~4.7.3~~ DG Fuel Oil and Lube Oil

Verify that the fuel oil and lube oil for each required DG is adequate by the following surveillance:

SR 3.8.3.1 4.7.3.1 Verify that the Fuel Oil Storage Tank contains ≥ 23,700 gallons of fuel; each 24 hours.

SR 3.8.3.2 4.7.3.2 Verify stored lube oil inventory is ≥ ~~175~~ 200 gallons; each 31 days. M.1

SR 3.8.3.3 4.7.3.3 Verify properties of new fuel oil and stored fuel oil are tested in accordance with, and maintained within the limits of, the Fuel Oil Testing Program, Specification 6.5.11.

SR 3.8.3.5 4.7.3.4 Check for and remove excess accumulated water from the Fuel Oil Storage Tank; each 92 days.

Amendment No.

REVISED
09/04/98

3.8 ~~3.7~~ ELECTRICAL POWER SYSTEMS (A.1) 3.8.9

3.8.9 ~~3.7.9~~ Distribution Systems - Operating

Specifications

LCO 3.8.9 The left and right trains of AC, DC, and Preferred AC power distribution subsystems ~~listed in Table 3.7.9.1~~ shall be OPERABLE. (LA.1)

Applicability

Specification 3.7.9 applies when the PCS is ~~above COLD SHUTDOWN.~~ MODES 1, 2, 3, and 4 (A.1)

Action

Cond A 3.7.9.A With one or more subsystems of one AC electrical power distribution train inoperable:

~~1. Comply with 3.7.9.E, if applicable, and~~ (A.2)

2. Restore the electrical power distribution train to OPERABLE status; within 8 hours. AND <* see below *> (M.2)

Cond B 3.7.9.B With one Preferred AC bus inoperable:

~~1. Comply with 3.7.9.E, if applicable, and~~ (A.2)

2. Restore the Preferred AC bus to OPERABLE status; within 8 hours. AND * See below * (M.2)

Cond C 3.7.9.C With one or more subsystems of one DC electrical power distribution train inoperable:

~~1. Comply with 3.7.9.E, if applicable, and~~ (A.2)

2. Restore the DC electrical power distribution train to OPERABLE status; within 8 hours. AND *see below* (M.2)

Cond D 3.7.9.D If the action required by 3.7.9.A, through 3.7.9.C is not met and the associated completion time has expired:

1. The reactor shall be placed in HOT SHUTDOWN; within ~~12~~ 6 hours, and (M.1)

(A.3) <Two or more> 2. The reactor shall be placed in COLD SHUTDOWN: within ~~48~~ 36 hours.

Cond E 3.7.9.E With any inoperable distribution subsystem that results in a loss of a safety function:

1. Enter Specification 3.0.3; immediately.

<Insert 3x above:> (M.2)

* 16 hours from discovery of failure to meet LCO *

Amendment No.

1 of 3

REVISED
09/04/98

3.8.10 ~~3.7.10~~ Distribution Systems - Shutdown A.1

Specifications

LCO 3.8.10 The necessary portion of AC, DC, and Preferred AC electrical power distribution subsystems listed in Table 3.7.9-1 shall be OPERABLE to support equipment required to be OPERABLE.

Applicability A.1

Specification 3.7.10 applies when the plant is ~~in COLD SHUTDOWN or REFUELING SHUTDOWN with fuel in the reactor,~~ MODES 5 and 6 and during movement of irradiated fuel assemblies.

Action

Cond A 3.7.10.A With one or more required AC, DC, or Preferred AC electrical power distribution subsystems inoperable, immediately initiate action to:

1. Declare affected required features supplied by an inoperable distribution subsystem to be inoperable, or:

2.1. Suspend ~~REFUELING OPERATIONS,~~ CORE ALTERATIONS, and A.1

2.2. Suspend movement of irradiated fuel assemblies, and

2.3. Suspend operations involving positive reactivity additions, and

2.4. Restore the required AC, DC, and Preferred AC electrical power distribution subsystems to OPERABLE status, and

2.5. Declare affected required shutdown cooling trains inoperable. ADD "And Not IN Operation"

A.2

Amendment No.

1 of 2

REVISED
09/04/98

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

LA.1 CTS Action 3.7.1.F requires inoperable automatic DG load sequencers to immediately result in considering the associated DG inoperable. This statement of operability is not required to be explicitly within the ITS actions. Attributes of operability are relocated to the ITS LCO Bases for LCO 3.8.1. This detail of a support system required for DG operability can be adequately controlled within the Bases where revisions are governed by the Administrative Controls Section for Bases Control Program and 10 CFR 50.59. This level of detail remaining being located within the Bases in lieu of an explicit ITS Action is consistent with NUREG-1432.

LA.2 CTS 4.7.1 presents a Surveillance Note ("Credit may be taken for unplanned events...") that applies globally to AC power source tests. The CTS Note is specifically needed only for those Surveillance that have restrictions associated with the operations Modes in which they are allowed to be performed. Since CTS 4.7.2.1 contains no restrictions, the fundamental allowance is applicable without any necessity for an explicitly statement. This fundamental allowance is stated in the ITS Bases for SR 3.0.1. This detail for the method of application can be adequately controlled within the Bases where revisions are governed by the Administrative Controls Section for Bases Control Program and 10 CFR 50.59. This level of detail remaining being located within the Bases in lieu of an explicit ITS SR is consistent with NUREG-1432.

LESS RESTRICTIVE CHANGES (L)

L.1 CTS Action 3.7.1.B.4 requires restoration of an inoperable DG within 7 days cumulative time in any calendar month. ITS Required Action B.4 limits the restoration time of any inoperability to 7 days (except as further restricted by the Completion Time added in accordance with Discussion of Change M.1), without tracking cumulative time. This change imposes both more restrictive possibilities as well as less restrictive. CTS actions have the potential to allow a 14-day continuous DG outage in the event the inoperability begins with 7 days remaining in a calendar month; allowing those 7 days followed by the first 7 days in the next calendar month. Eliminating this allowance in the ITS is considered more restrictive. The less restrictive aspect of the ITS is the allowance to have two or more separate DG inoperabilities in any one calendar month that cumulatively could exceed 7 days which is not allowed by the CTS.

LESS RESTRICTIVE CHANGES (L)

L.1 (continued)

Tracking cumulative outage time is not included in the ISTS since it is not a function of Operability. Instead, tracking cumulative outage time is a function of "availability." Early custom technical specifications attempted to limit the time diesel generators were unavailable by specifying cumulative outage time in the specifications. Conversely, a literal application of standard technical specifications would allow extended periods of diesel generator unavailability by an iterative process of declaring an inoperable diesel "Operable" followed by another period of inoperability. Subsequent to the issuance of standard technical specifications, the NRC promulgated two rules (10 CFR 50.63, "Loss of all Alternating Current Power" and 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants") which mandated (in part) that controls be instituted to limit the time diesel generators are unavailable. In response to 10 CFR 50.63, the Palisades plant established an Emergency Diesel Generator Reliability Program to ensure diesel reliability is monitored and maintained above a reliability target level of 0.95. This value is also used as a performance goal for diesel generator reliability under the requirements of 10 CFR 50.65. The elements of Emergency Diesel Generator Reliability Program are consistent with the guidance of Regulatory Guide 1.155, "Station Blackout" and NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors."

The 7 day cumulative time in any calendar month requirement in the CTS would permit a maximum diesel generator unavailability of approximately 0.77. However, due to the commitments associated with the requirements of 10 CFR 50.63 and 10 CFR 50.65 to maintain a diesel generator reliability target level of 0.95, the overall availability of the Palisades plant diesel generators is significantly greater than 0.77 (the current availability for the emergency diesel generators is 99.0% for one diesel, and 99.1% for the other). Since the requirements of the CFRs mandate higher levels of diesel generator availibility than the CTS, excluding cumulative outage time in the ITS can be made without a significant impact on the health and safety of the public. Elimination of tracking outage time against a cumulative limit is consistent with NUREG-1432.

ADMINISTRATIVE CHANGES (A)

A.1 All reformatting and renumbering are in accordance with NUREG-1432. As a result, the Technical Specifications (TS) should be more readily readable, and therefore understandable by plant operators as well as other users. The reformatting, renumbering, and rewording process involves no technical changes to existing Technical Specifications.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During Improved Technical Specification (ITS) development certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or implied) to the TS. 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 details does not result in a technical change.

A.2 A Note is added to ITS 3.8.3 Actions allowing separate entry for each DG. This provides explicit instructions for proper application of the Actions for Technical Specifications compliance. In conjunction with proposed Specification 1.3, "Completion Times," the Note provides direction consistent with the intent of CTS. These changes are presentation preferences consistent with the NUREG-1432. Therefore, this is an administrative change with no impact on safety.

A.3 CTS 3.7.3 has been modified to include the "fuel oil transfer system" and "starting air subsystem" in the text of the "Specification". This change has been made to establish a format consistent with the ISTS by specifying, in the LCO, the functional capability of DG support systems required for the safe operation of the facility. This change does not add or delete any requirement to the CTS, but simply adopts a standard convention for specifying limiting conditions for operations. Therefore, this change is considered administrative in nature.

TECHNICAL CHANGES - MORE RESTRICTIVE (M)

M.1 CTS 4.7.3.2 verifies the inventory of stored lube oil is ≥ 175 gallons each 31 days. CTS 3.7.3.B requires that actions be taken when the inventory of stored lube oil is < 175 and ≥ 150 gallons. Proposed ITS SR 3.8.3.2 verifies the inventory of stored lube oil is ≥ 200 gallons. Proposed ITS 3.8.3 Condition B requires that actions be taken when the inventory of stored lube oil is < 200 and > 160 gallons. The quantity of stored lube oil in the ITS has been revised from the quantity required in the CTS as a result of data recently obtained related to diesel generator lube oil consumption. The inventory of stored lube oil is based on amount of lube oil necessary to support full load diesel generator operation for at least 7 days. The CTS value of 175 gallons was based on an estimated consumption rate of 1 gallon per hour which is representative of large type diesel engines. Empirical data derived during a recent test of a Palisades plant diesel engine test concluded that the actual lube oil consumption rate was approximately 0.83%. Values between 0.8% and 1.0% have been confirmed to be acceptable by the engine vendor. As a result of this test, and to ensure an adequate inventory of lube oil is available to support diesel engine operations, the quantity of stored lube oil required in the ITS has been increased to 200 gallons. A stored inventory of 200 gallons, together with the lube oil in the engine sump, will ensure an adequate amount of lube oil will be available to support full load diesel generator operation for at least 7 days in the event of an accident. This change has been characterized as "more restrictive" and is considered acceptable since it continues to preserve the original basis for stored lube oil contained in the CTS.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

There were no "Removal of Detail" changes associated with this specification.

LESS RESTRICTIVE CHANGES (L)

There were no "Less Restrictive" changes associated with this specification.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

LA.1 CTS 3.7.4 and 4.7.4.6 detail the plant equipment designators for the DC electrical power trains. ITS 3.8.4 simply requires the operability of the DC electrical power trains, and relocates the details of what comprises the trains to the Bases and FSAR. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in the Bases of ITS 3.8.4 and the FSAR provides adequate assurance that they will be maintained. The Bases are controlled by the Bases Control Process in Chapter 5 of the proposed Technical Specifications, and the FSAR is controlled by 10 CFR 50.59. This change is consistent with NUREG-1432.

LESS RESTRICTIVE CHANGES (L)

L.1 CTS 3.7.4 specifies the requirements for DC source when the plant is above Cold Shutdown. CTS 3.7.4 Actions A.1 require the cross-connected charger(s) for the affected battery be placed in service immediately whenever one required charger is inoperable. CTS 3.7.4 Action B.1 requires both chargers for the affected battery be placed in service immediately whenever one battery is inoperable. The CTS does not specify an Action when one charger and one battery in one train are inoperable concurrently. Thus, the provisions of LCO 3.0.3 are applied. In the ITS, the inoperability of a charger, a battery, and a charger and battery in one train concurrently, are addressed by Conditions A, B, and C, respectively. The Completion Times for Conditions A, B, and C are equally stated at 8 hours since these conditions are ones where DC power continues to remain available to the bus, albeit with inoperable sources. Selection of the 8 hour Completion Time is consistent with that previously approved for the more degraded condition of one de-energized DC electrical distribution train allowed by CTS 3.7.9.c. With one DC electrical distribution train de-energized, the remaining DC electrical train is capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe condition. Since ITS 3.8.4 represents a configuration of the DC electrical system that is less severe and presents less risk for a loss of function than that allowed by CTS 3.7.9.c (proposed ITS 3.8.9), an extension of the Completion Times to 8 hours can be made without a significant risk to public health and safety. An extension of the Completion Times for "DC Source-Operating" to match the Completion Times for (DC) "Distribution Systems-Operating" is consistent with the philosophy presented in NUREG-1432.

ADMINISTRATIVE CHANGES (A)

A.1 All reformatting and renumbering are in accordance with NUREG-1432. As a result, the Technical Specifications (TS) should be more readily readable, and therefore understandable by plant operators as well as other users. The reformatting, renumbering, and rewording process involves no technical changes to existing Technical Specifications.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During Improved Technical Specification (ITS) development certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or implied) to the TS. 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 details does not result in a technical change.

A.2 CTS 3.7.9.A.1, B.1, and C.1 specify an action that informs the operator to comply with other required actions is necessary. Since these other required actions are required to be met regardless of this statement, this statement does not provided specific action. It therefore serves solely as an informational note, which does not appear in ITS. As such, its removal is an administrative editorial presentation preference with no technical change or change in intent. This change is consistent with NUREG-1432.

A.3 CTS 3.7.9.E requires immediate entry into specification 3.0.3 "with any inoperable distribution subsystem that results in a loss of a safety function." ITS 3.8.9 Condition E requires immediate entry into LCO 3.0.3 when "two or more inoperable subsystems result in a loss of function." The requirements of the CTS and ITS are essentially equivalent. That is, both specifications require a plant shutdown when a loss of safety function exists due to degradation of the electrical distribution system. The difference in language between CTS 3.7.9.E and ITS 3.8.9 Condition E is due to the application of the technical specification usage rules and treatment for a loss of safety function. (See Chapter 3.0 of the Palisades ITS conversion submittal for a discussion related to the inclusion of ITS LCO 3.0.6) Since the proposed wording does not alter the original intent of the CTS, this change has been characterized as administrative in nature.

TECHNICAL CHANGES - MORE RESTRICTIVE (M)

M.1 CTS 3.7.9.D requires that if inoperable components are not restored to OPERABLE status then the reactor shall be placed in a hot shutdown condition within 12 hours and cold shutdown within 48 hours. In the proposed ITS, the requirement is to place the plant in MODE 3 within 6 hours and MODE 5 within 36 hours. The CTS HOT SHUTDOWN is nominally equivalent to the proposed ITS MODE 3 as discussed in Section 1.1 and therefore, there is little effect in adopting the proposed ITS MODE 3 parameters. However, adopting the proposed ITS shutdown times is considered to be more restrictive, but continues to allow sufficient time to shutdown the plant in a safe and controlled manner. This change is consistent with NUREG-1432.

M.2 CTS 3.7.9 Actions for restoration of an inoperable power distribution subsystems, do not impose limitations for overlapping combinations of inoperable AC, DC and Preferred AC subsystems. ITS Required Actions A.1, B.1 and C.1 include a requirement for restoration of all subsystems to operable status within 16 hours of initial failure to meet the LCO requirement. These added Completion Times assure that alternating inoperabilities in AC, DC and/or Preferred AC subsystems will not continue indefinitely without complete restoration to compliance with the LCO. The 16-hour Completion Time is reasonable to assure timely restoration. This Completion Time is consistent with the NUREG-1432.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

LA.1 CTS 3.7.9 , and Table 3.7.9-1, detail the plant equipment designators for the AC, DC and Preferred AC distribution subsystems. ITS 3.8.9 simply requires the operability of the subsystems, and relocates the details of the plant-specific designators to the Bases and FSAR. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in the Bases of ITS 3.8.9 and the FSAR provides adequate assurance that they will be maintained. The Bases are controlled by the Bases Control Process in Chapter 5 of the proposed Technical Specifications, and the FSAR is controlled by 10 CFR 50.59. This change is consistent with NUREG-1432.

LESS RESTRICTIVE CHANGES (L)

There were no "Less Restrictive" changes associated with this specification.

ADMINISTRATIVE CHANGES (A)

A.1 All reformatting and renumbering are in accordance with NUREG-1432. As a result, the Technical Specifications (TS) should be more readily readable, and therefore understandable by plant operators as well as other users. The reformatting, renumbering, and rewording process involves no technical changes to existing Technical Specifications.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During Improved Technical Specification (ITS) development certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or implied) to the TS. 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 details does not result in a technical change.

A.2 CTS 3.7.10.A contains the actions to be taken when one or more required AC, DC, or Preferred AC electrical power distribution subsystems are inoperable. CTS 3.7.10.A action 2.5 states to "declare affected required shutdown cooling trains inoperable." In the ITS, the corresponding action is Required Action A.2.5 which states "declare associated required shutdown cooling train inoperable and not in operation." Required Action A.2.5 contains the phrase "and in operation" which is not in the CTS. The inclusion of this phrase assures the appropriate actions are taken in the event primary coolant circulation and heat removal functions are lost as a result of an electrical distribution system inoperability. In this instance, reliance on LCO 3.0.6 would be inappropriate. This change is considered administrative in nature since it does not alter an existing requirement in the CTS, but simply addresses each aspect (i.e., Operable, and in operation) related to a loss of the shutdown cooling function.

TECHNICAL CHANGES - MORE RESTRICTIVE (M)

There were no "More Restrictive" changes associated with this specification.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

There were no "Removal of Details" changes associated with this specification.

LESS RESTRICTIVE CHANGES (L)

There were no "Less Restrictive" changes associated with this specification.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. ~~DG loadings may include gradual loading as recommended by the manufacturer.~~ ~~1.~~ Momentary transients outside the load range do not invalidate this test. 2 ~~3.~~ This Surveillance shall be conducted on only one DG at a time. 3 ~~4.~~ This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 ~~or SR 3.8.1.7.~~ ----------	
	Verify each DG is synchronized and loaded, and operates for ≥ 60 minutes at a load ≥ ~~[4500]~~ 2300 kW and ≤ ~~[5000]~~ 2500 kW. a. For ≥ 15 minutes loaded to greater than or equal to peak accident load, and b. For the remainder of the test	31 days ~~As specified in Table 3.8.1-1~~
SR 3.8.1.4	Verify each day tank ~~[and engine mounted tank]~~ contains ≥ ~~[250] gal~~ 2500 gallons of fuel oil.	31 days
SR 3.8.1.5	Check for and remove accumulated water from each day tank [and engine mounted tank].	[31] days
SR 3.8.1.6	Verify the fuel oil transfer system operates to [automatically] transfer fuel oil from storage tank[s] to the day tank [and engine mounted tank].	[92] days

CTS 4.7.1.3

CTS 4.7.1.5

(continued)

REVISED
09/04/98

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
CTS 4.7.1.7 SR 3.8.1.~~9~~ 5 5 ~~NOTES~~ ~~1. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR.~~ ~~2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9].~~ Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ ~~[63]~~ 68 Hz; 1 b. Within ~~[3]~~ seconds following load rejection, the voltage is ≥ ~~[3740]~~ 2280 V and ≤ ~~[4580]~~ 2640 V; and c. Within ~~[3]~~ seconds following load rejection, the frequency is ≥ ~~[58.8]~~ 59.5 Hz and ≤ ~~[61.2]~~ 61.5 Hz.	~~[18 months]~~
CTS 4.7.1.8 SR 3.8.1.~~10~~ 6 14 ~~NOTE~~ ~~This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR.~~ 1 Verify each DG, operating at a power factor ≤ ~~[0.9]~~, does not trip, and voltage is maintained ≤ ~~[5000]~~ 4000 V during and following a load rejection of ≥ ~~[4500]~~ 2300 kW and ≤ ~~[5000]~~ 2500 kW.	~~[18 months]~~

(continued)

REVISED
09/04/98

3.8 ELECTRICAL POWER SYSTEMS

RAI 3.8.3-02

3.8.3 Diesel Fuel ~~Oil~~, Lube Oil, and Starting Air

~~Fuel oil transfer systems~~

LCO 3.8.3 ~~The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).~~

a. The stored diesel fuel oil, lube oil, and starting air subsystems shall be within limits, and

b. Both diesel fuel oil ~~transfer~~ systems shall be OPERABLE.

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

NOTE

Separate Condition entry is allowed for each DG.

	CONDITION	REQUIRED ACTION	COMPLETION TIME
CTS 3.7.3.A	A. Fuel oil inventory ~~One or more DGs with fuel level~~ < ~~[33,000] gal~~ 23,700 gallons and > ~~[28,000] gal~~ 20,110 gallons in storage tank.	A.1 Restore fuel oil ~~level~~ inventory to within limits.	48 hours
CTS 3.7.3.B	B. Stored ~~One or more DGs with~~ lube oil inventory < ~~[500] gal~~ 200 gallons and > ~~[425] gal.~~ 160 gallons.	B.1 Restore stored lube oil inventory to within limits.	48 hours
CTS 3.7.1.G	C. Fuel transfer system ~~One or more DGs with stored fuel oil total particulates not within limits.~~ (P-18A) inoperable.	C.1 Restore fuel transfer ~~oil total particulates to within limits~~ system to OPERABLE status.	~~7 days~~ 15 hours
CTS 3.7.1.H	D. Fuel transfer system (P-18B) inoperable.	D.1 Restore fuel transfer system to OPERABLE status.	(continued) 7 days
CTS 3.7.1.I	E. Both fuel transfer systems inoperable.	E.1 Restore one fuel transfer system to OPERABLE status.	8 hours

REVISED 09/04/98

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
CTS 3.7.3.D (F) (5)	~~D.~~ ~~One or more DGs with new~~ fuel oil properties other than viscosity, and water and sediment, not within limits.	(F) ~~D.1~~ Restore stored fuel oil properties to within limits.	30 days
(5)	~~E.~~ One or more DGs with starting air receiver pressure < [225] psig and ≥ [125] psig.	~~E.1~~ Restore starting air receiver pressure to ≥ [225] psig.	48 hours
CTS 3.7.3.C 3.7.3.E (G)	~~F.~~ Required Action and associated Completion Time not met. OR One or more DGs with stored diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or ~~E~~, F.	(G) ~~F.1~~ Declare associated DG inoperable.	Immediately

1A1 3.8.3.0A X

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
CTS 4.7.3.1 (1)	SR 3.8.3.1 Verify ~~each~~ the fuel oil storage tank contains ≥ ~~[22,000] gal~~ 23,700 gallons of fuel.	~~31 days~~ 24 hours (5)

(continued)

REVISED
09/04/98

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems—Operating

4 LCO 3.8.9 A Train ~~X~~ Left and Train ~~X~~ Right AC, DC, and Preferred AC ~~vital~~ bus electrical power distribution subsystems shall be OPERABLE.

CTS 3.7.9

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
CTS 3.7.9.A	5 A. One or more AC electrical power distribution subsystem 5 in one train inoperable.	A.1 Restore AC electrical power distribution subsystem to OPERABLE status. (5)	8 hours AND 16 hours from discovery of failure to meet LCO	RAI 3.8.9-01 X
CTS 3.7.9.B	5 4 B. One or more Preferred AC ~~vital~~ bus 5 inoperable.	B.1 Restore Preferred AC ~~vital~~ bus ~~subsystem~~ 5 to OPERABLE status.	8 2 hours AND 16 hours from discovery of failure to meet LCO	RAI 3.8.9-02 X
CTS 3.7.9.C	5 C. One or more DC electrical power distribution subsystem 5 in one train inoperable.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status. (5)	8 2 hours AND 16 hours from discovery of failure to meet LCO	RAI 3.8.9-03 X

(continued)

REVISED
09/04/98

Change	Discussion

NOTE: This attachment provides a brief discussion of the deviations from the Technical Specifications of NUREG-1432 that were made to support the development of the Palisades Nuclear Plant ITS. Due to the recent CTS amendment request, which proposed NUREG - like Bases for Section 3.8, three additional attachment have been provided. Attachment 7 is a markup of the CTS Bases showing the difference between CTS and proposed ITS Bases. Attachment 8 provides an explanation of these differences. Attachment 9 provides a markup of NUREG-1432, Section 3.8 Bases. Therefore, the JFDs are provided against changes to the CTS Bases, rather than as typically done against the NUREG Bases.

The Change Numbers correspond to the respective deviation shown on the "NUREG MARKUPS." The first five justifications were used generically throughout the markup of the NUREG. Not all generic justifications are used in each Specification.

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. Editorial change for clarity or for consistency with the Improved Technical Specifications (ITS) Writer's Guide.

3. The requirement/statement has been deleted since it is not applicable to this facility. The following requirements have been renumbered, where applicable, to reflect this deletion.

4. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the facility specific nomenclature, number, reference, system description, or analysis description.

5. This change reflects the current licensing basis/technical specifications.

Change	Discussion
6.	The option to specifically list automatic load sequencers as a third type of AC Source, and provide a separate Action, is not adopted. Sequencers are not a separate source of AC power; rather they are a support component for the DG function. As such they are implicitly required to be Operable by the requirement for DG Operability (as detailed in the ITS Bases). Similarly, when discovered inoperable, the Actions for an inoperable DG apply without having to state so explicitly. NUREG-1432 Bases support this. The Reviewer's Note in the Bases for Required Action F.1 indicates that the specific condition related to the sequencer may be deleted "if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads under any conditions." In the design of the Palisades plant, failure of an automatic load sequencer does not result in the inability to start all or part of the safety loads from the offsite power circuits when required, or result in overloading the offsite power circuits to a safety bus during an event. The automatic load sequencers are not shared with the offsite power circuits, nor are they required to support the loading of the 2400 V Class 1E buses when those buses are being supplied by offsite power. Therefore, inclusion of an explicit Condition, Required Action, and Completion Time for an inoperable automatic load sequencer is not required in the Palisades ITS.
7.	The maximum time allowed to fail to meet the LCO is revised from 6 days to 10 days. The accepted NUREG-1432 practice for limiting successive alternating inoperabilities with this type of maximum time Completion Time, is to allow one full Complete Time for each of the associated component types. In this case, with the proposed Completion Times of 72 hours for an offsite circuit and 7 days for a DG, the maximum time is appropriately specified as 10 days.
8.	The Palisades DG design does not incorporate "gradual acceleration" on a DG start. NUREG-1432 presentation of SR 3.8.1.2 Notes 1 and 3, and SR 3.8.1.7, are addressing this design feature. The proposed modifications to eliminate these Notes and the SR provides the appropriate presentation for the Palisades DG design.
9.	The Palisades DG design does not incorporate "gradual acceleration" on a DG start. Similarly, NUREG-1432 SR 3.8.1.3 Note 1 states an allowance for "gradual loading." However, since there is no stated prohibition to gradual loading, and the surveillance itself does not impose and loading-rate criteria, this Note is informational only, and should be removed as a Technical Specification requirement.

Change **Discussion**

10. ISTS 3.8.1 Required Action A.2 is not retained; consistent with CTS. The Palisades design and requirements for operable offsite circuits ensures that each ESF bus will be energized if at least one circuit is operable. If any bus can not be energized, then both required offsite circuits would be declared inoperable.

    The qualified offsite circuits required by ITS LCO 3.8.1 are Safeguards Transformer 1-1 and Startup Transformer 1-2. For an offsite circuit to be considered operable, it must be capable of supplying electrical power to both class 1E electrical trains. Inclusive in the requirement for operability is that the associated cables, instruments and breakers, necessary to provide a complete circuit from the switchyard to the onsite safety-related AC distribution system, are capable of performing their intended function. The normal lineup at Palisades, both during plant operation and shutdown, has both safety related 2400 volt AC buses supplied from Safeguards Transformer 1-1. If protective relay actuation occurs for the Safeguards Transformer, both buses are automatically transferred to the alternate required offsite source, Startup Transformer 1-2.

    As part of the Palisades plant design, with one offsite circuit inoperable, electrical power is still available to both class 1E electrical trains since either the Safeguard Transformer 1-1, or the Startup Transformer 1-2 can be aligned to both safety-related 2400 V buses. Therefore, for either safety related 2400 volt bus to have "no offsite power available" as discussed under ISTS 3.8.1 Required Action A.2, both offsite circuits would have to be inoperable. The condition of both offsite circuits being inoperable is covered under ISTS and ITS 3.8.1 Condition C, which includes the subject Required Action C.1, but with a reduced Completion Time. As such, Required Action A.2 of ISTS 3.8.1, which only applies when one electrical train cannot be powered from an offsite source, is not applicable to the Palisades ITS.

11. ISTS SR 3.8.1.6 relates to surveilling the DG fuel oil transfer pumps. Palisades provides the appropriate plant specific fuel oil transfer pump surveillance in ITS 3.8.3, SR 3.8.3.6. This presentation preference is dictated by the plant specific current licensing basis allowing specified allowed Completion Times to repair inoperable transfer pumps prior to declaring a DG inoperable.

12. TSTF-8, Rev. 2 deleted the 3.8 SR Notes "However credit may be taken..." and addressed that issue globally in the 3.0 Bases. This presentation is consistent with NUREG-1432.

Change	Discussion
13.	This change reflects the current licensing basis/technical specifications. The surveillance requirement for checking and removing accumulated water from each diesel generator fuel oil day tank was not adopted in the ITS (or the CTS) due to the design of these tanks. The tanks are constructed with flat bottoms and do not provide a sump for water collection or removal. Historic performance has shown that water accumulation in these tanks has not been a problem. A similar surveillance requirement for the Diesel Fuel Oil Storage Tank was incorporated in the CTS following replacement of the original storage tank with a new storage tank. The new Diesel Fuel Oil Storage Tank contains an integral sump for water collection and removal. Thus, the surveillance requirement to check and remove accumulative water was retained in the ITS for the Diesel Fuel Oil Storage Tank only.
14.	This change reflects the current licensing basis/technical specifications. On April 29, 1998 the NRC issued Amendment 180 to the Palisades Plant operating license. The amendment revised the Technical Specification requirements and associated bases regarding the electrical power systems to closely emulate the Standard Technical Specifications for Combustion Engineering Plants, NUREG-1432, Revision 1. As part of this revision, new diesel generator surveillance tests were adopted including the tests which verify each diesel generator is capable of a load reject greater than or equal to its associated single largest post-accident load (ISTS SR 3.8.1.9), and that each diesel generator is capable of a full load reject (ISTS SR 3.8.1.10). These new surveillance requirements (CTS 4.7.1.7 and CTS 4.7.1.8) were issued without the note which states that the surveillance "shall not be performed in Mode 1 or 2. Omission of this note was found acceptable by the NRC staff in their Safety Evaluation related to Amendment 180 which concluded that "performance of these SRs (4.7.1.7, 4.7.1.8, and 4.7.1.10) at power would not cause any undue transients on the Class 1E distribution system." As such, Note 1 in ISTS SR 3.8.1.9 and ISTS SR 3.1.8.10 was not incorporated in the Palisades ITS.

Change **Discussion**

NOTE: This attachment provides a brief discussion of the deviations from the Technical Specifications of NUREG-1432 that were made to support the development of the Palisades Nuclear Plant ITS. For Section 3.8 ONLY, three additional attachment have been provided. Attachment 7 is a markup of the CTS Bases showing the difference between CTS and proposed ITS Bases. Attachment 8 provides an explanation of these differences. Attachment 9 provides a markup of NUREG-1432, Section 3.8 Bases.

The Change Numbers correspond to the respective deviation shown on the "NUREG MARKUPS." The first five justifications were used generically throughout the markup of the NUREG. Not all generic justifications are used in each Specification.

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. Editorial change for clarity or for consistency with the Improved Technical Specifications (ITS) Writer's Guide.

3. The requirement/statement has been deleted since it is not applicable to this facility. The following requirements have been renumbered, where applicable, to reflect this deletion.

4. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the facility specific nomenclature, number, reference, system description, or analysis description.

5. This change reflects the current licensing basis/technical specifications as modified by DOC L.1. ITS 3.8.4 has been developed to preserve the operational flexibility of the CTS while maintaining a parallel structure to the ISTS. The design of the Palisade plant DC electrical power system is such that each station battery has two associated battery chargers, one powered by the associated AC power distribution system (the directly connected charger), and one powered from the opposite AC power distribution system (the cross connected charger). CTS 3.7.4 provides the actions necessary to cope with a degraded DC electrical power system which results from an inoperable charger or an inoperable battery using the design features (i.e., cross connect capabilities) of the system. These same actions have been incorporated in ITS 3.8.4. However, in NUREG-1432, ISTS 3.8.4 is structured such that the restoration time for an inoperable DC electrical power subsystem (e.g., charger, or battery, or charger and battery) is equivalent to the allowed outage time for an inoperable DC electrical power distribution system. The basis for this structure is the recognition that a degraded DC electrical power source presents no more risk than an inoperable DC bus. Thus, to maintain this same logical structure in the Palisade's ITS, Condition C has been added to address the concurrent inoperabilities of a charger and battery in the same electrical train (in the ISTS, this same configuration would be addressed by Condition A).

6. TSTF-8, Rev. 2 deleted the 3.8 SR Notes "However credit may be taken..." and addressed that issue globally in the 3.0 Bases. This presentation is consistent with NUREG-1432.

7. Incorporate TSTF-38 into SR 3.8.4.3 to specify the surveillance is to identify conditions which could degrade battery performance.

Change	Discussion

NOTE: This attachment provides a brief discussion of the deviations from the Technical Specifications of NUREG-1432 that were made to support the development of the Palisades Nuclear Plant ITS. For Section 3.8 ONLY, three additional attachment have been provided. Attachment 7 is a markup of the CTS Bases showing the difference between CTS and proposed ITS Bases. Attachment 8 provides an explanation of these differences. Attachment 9 provides a markup of NUREG-1432, Section 3.8 Bases.

The Change Numbers correspond to the respective deviation shown on the "NUREG MARKUPS." The first five justifications were used generically throughout the markup of the NUREG. Not all generic justifications are used in each Specification.

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. Editorial change for clarity or for consistency with the Improved Technical Specifications (ITS) Writer's Guide.

3. The requirement/statement has been deleted since it is not applicable to this facility. The following requirements have been renumbered, where applicable, to reflect this deletion.

4. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the facility specific nomenclature, number, reference, system description, or analysis description.

5. This change reflects the current licensing basis/technical specifications. Only those SRs from specification 3.8.4 which can be performed without affecting the Operability or reliability of the only required DC source are specified. Since the performance of SR 3.8.4.7 and SR 3.8.4.8 would cause the only required battery to be inoperable during the test, these SRs have been excluded from SR 3.8.5.1.

BASES

2

An OPERABLE DG, associated with a distribution subsystem required to be OPERABLE by LCO 3.~~7~~8.10, ensures a diverse power source is available to provide electrical power support, assuming a loss of the offsite circuit.

Together, OPERABILITY of the required offsite circuit and DG ensures the availability of sufficient AC sources to operate the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and loss of shutdown cooling).

The DG must be capable of starting, accelerating to rated speed and voltage, connecting to its respective 2400 volt bus on detection of bus undervoltage, and accepting required loads. Proper "Normal Shutdown" loading sequence, and tripping of nonessential loads, is a required function for DG OPERABILITY. A Service Water Pump must be started soon after the DG to assure continued DG operability. The DBA loading sequence is not required to be OPERABLE since the Safety Injection Signal is disabled during ~~COLD SHUTDOWN~~ MODES 5 and 6.

APPLICABILITY

The AC sources required to be OPERABLE in ~~COLD SHUTDOWN, REFUELING SHUTDOWN,~~ MODES 5 and 6, and during movement of irradiated fuel assemblies provide assurance that equipment and instrumentation is available to:

RAI 3.8.2-01

a. Provide coolant inventory makeup,
b. Mitigate a fuel handling accident,
c. Mitigate shutdown events that can lead to core damage, ~~and~~ shutdown
d. Monitor~~ing~~ and maintain~~ing~~ the plant in a ~~COLD SHUTDOWN or REFUELING SHUTDOWN~~ condition.

Cold Shutdown Condition or Refueling Condition

This LCO is applicable during movement of irradiated fuel assemblies even if the plant is in a condition other than ~~COLD SHUTDOWN or REFUELING SHUTDOWN.~~ MODE 5 or 6 This LCO provides the necessary ACTIONS if the AC electrical power sources required by this LCO become unavailable during movement of irradiated fuel assemblies.

The AC source requirements for ~~above COLD SHUTDOWN~~ MODES 1, 2, 3, and 4 are addressed in LCO 3.~~7~~8.1, "AC Sources - Operating".

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09/04/98

ELECTRICAL POWER SYSTEMS

B 3.7.3 ~~and 3.7.2~~ Diesel Fuel, ~~Oil~~ ~~and~~ Lube Oil, and Starting Air

BASES

BACKGROUND

The diesel generators (DGs) are provided with a storage tank having a required fuel oil inventory sufficient to operate one diesel for a period of 7 days, while the DG is supplying maximum post-accident loads. This onsite fuel oil capacity is sufficient to operate the DG for longer than the time to replenish the onsite supply from offsite sources.

Fuel oil is transferred from the Fuel Oil Storage Tank to either day tank by either of two Fuel Transfer ~~Pumps~~ Systems. INSERT 1 (Ref. 1)

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide (RG) 1.137 addresses the recommended fuel oil practices as supplemented by ANSI N195-1976 (Ref. 2).

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient supply to allow the operator to replenish lube oil from offsite sources. Implicit in this LCO is the requirement to assure, though not necessarily by testing, the capability to transfer the lube oil from its storage location to the DG oil sump, while the DG is running.

INSERT 2

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable ~~above COLD SHUTDOWN~~ in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.~~7~~.1 "AC Sources - Operating"; during ~~COLD SHUTDOWN and REFUELING SHUTDOWN~~ MODES 5 and 6, in the Bases for LCO 3.~~7~~.2 "AC Sources - Shutdown".

Since diesel fuel, lube oil, and starting air subsystems support the operation of the standby AC power sources, they satisfy Criterion 3 of 10 CFR 50.36 (c)(2).

RAI 3.8.3-05

REVISED 09/04/98

SECTION 3.8

INSERT 1

The fuel oil transfer system which includes fuel transfer pump P-18A can be powered by offsite power, or by either DG. However, the fuel oil transfer system which includes fuel transfer pump P-18B can only be powered by offsite power, or by DG 1-1.

INSERT 2

RAI 383-07

Each DG is provided with an associated starting air subsystem to assure independent start capability. The starting air system is required to have a minimum capacity with margin for a DG start attemp without recharging the air start receivers.

BASES

LCO

INSERT 1

Stored diesel fuel oil is required to have sufficient supply for 7 days of full accident load operation. It is also required to meet specific standards for quality. The specified 7 day requirement and the 6 day quantity listed in Condition ~~3.7.3~~ A are taken from the Engineering Analysis associated with Event Report E-PAL-93-026B. Additionally, sufficient lube oil supply must be available to ensure the capability to operate at full accident load for 7 days. This requirement is in addition to the lube oil contained in the engine sump. The specified 7 day requirement and the 6 day quantity listed in Condition ~~3.7.3~~ B are based on an assumed lube oil consumption of ~~1 gallon per hour.~~ 0.8 to 1.0% of fuel oil consumption.

INSERT 2

These requirements, in conjunction with an ability to obtain replacement supplies within 7 days, support the availability of the DGs. DG day tank fuel requirements~~, and fuel transfer capability from the storage tank to the day tanks,~~ are addressed in LCOs 3.~~X~~.1 and 3.~~X~~.2.

APPLICABILITY

DG OPERABILITY is required by LCOs 3.~~X~~.1 and 3.~~X~~.2 to ensure the availability of the required AC power to shut down the reactor and maintain it in a safe shutdown condition following a loss of off-site power. Since diesel fuel oil, ~~and~~ lube oil support LCOs 3.~~X~~.1 and 3.~~X~~.2, stored diesel fuel oil, and lube oil are required to be within limits when either DG is required to be OPERABLE.

fuel transfer, and starting air

and the fuel transfer system is required to be OPERABLE

and starting air

RAI 3.8.3-02

ACTIONS

~~3.7.3~~ A.1

In this Condition, the available DG fuel oil supply is less than the required 7 day supply, but enough for at least 6 days. This condition allows sufficient time to obtain additional fuel and to perform the sampling and analyses required prior to addition of fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required inventory prior to declaring the DGs inoperable.

~~3.7.3~~ B.1

In this Condition, the available DG lube oil supply in storage is less than the required 7 day supply, but enough for at least 6 days. This condition allows sufficient time to obtain additional lube oil. A period of 48 hours is considered sufficient to complete restoration of the required inventory prior to declaring the DGs inoperable.

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09/04/98

SECTION 3.8

RAI 3.8.3-04

INSERT 1

Additionally, the ability to transfer fuel oil from the storage tank to each day tank is required from each of the two transfer pumps.

INSERT 2

The starting air subsystem must provide, without the aid of the refill compressor, sufficient air start capacity, including margin, to assure start capability for its associated DG.

BASES

~~3.7.3.C.1~~

5

INSERT FROM 3.8.1 (pg 9)

2

Diesel fuel oil with viscosity, or water and sediment out of limits, is unacceptable for even short term DG operation. Viscosity is important primarily because of its effect on the handling of the fuel by the pump and injector system; water and sediment provides an indication of fuel contamination. When the fuel oil stored in the Fuel Oil Storage Tank is determined to be out of viscosity, or water and sediment limits, the DGs must be declared inoperable, immediately.

~~3.7.3.D.1~~ F.1

With the stored fuel oil properties, other than viscosity and water and sediment, defined in the Fuel Oil Testing Program not within the required limits, but acceptable for short term DG operation, a period of 30 days is allowed for restoring the stored fuel oil properties. The most likely cause of stored fuel oil becoming out of limits is the addition of new fuel oil with properties that do not meet all of the limits. This 30 day period provides sufficient time to determine if new fuel oil, when mixed with stored fuel oil, will produce an acceptable mixture, or if other methods to restore the stored fuel oil properties are required. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

2

RAI 3.8.3-08

~~3.7.3.E.1~~ G.1

With a Required Action and associated Completion Time not met, or with diesel fuel oil or lube oil not within limits for reasons other than addressed by Conditions A, through ~~B,~~ B, or the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

or Starting Air Subsystem

RAI 3.8.3-07

In the event that

SURVEILLANCE REQUIREMENTS

SR ~~4.7.3.1~~ 3.8 ~~(Fuel oil quantity check)~~

This SR provides verification that there is an adequate inventory of fuel oil in the storage tank to support either DG's operation for 7 days at full post-accident load. The 7 day period is sufficient time to place the plant in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The 24 hour Frequency is specified to ensure that a sufficient supply of fuel oil is available, since the Fuel Oil Storage Tank is the fuel oil supply for the diesel fire pumps, heating boilers, and rad waste evaporators, in addition to the DGs.

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09/04/98

BASES

SR ~~4.7~~ 3.8.3.2 ~~(Lube oil quantity check)~~

This Surveillance ensures that sufficient stored lube oil inventory is available to support at least 7 days of full accident load operation for one DG. The ~~175~~ 200 gallons requirement is based on an estimated consumption of ~~1 gallon per hour.~~ 0.8 to 1.0% of fuel oil consumption.

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run times are closely monitored by the plant staff.

SR ~~4.7~~ 3.8.3.3 ~~(Fuel oil quality check)~~

The tests listed below are a means of determining whether new fuel oil and stored fuel oil are of the appropriate grade and have not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion.

Testing for viscosity, specific gravity, and water and sediment is completed for fuel oil delivered to the plant prior to its being added to the Fuel Oil Storage Tank. Fuel oil which fails the test, but has not been added to the Fuel Oil Storage Tank does not imply failure of this SR and requires no specific action. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tank without concern for contaminating the entire volume of fuel oil in the storage tank. (Ref. 3)

Fuel oil is tested for other of the parameters specified in ASTM D975 in accordance with the Fuel Oil Testing Program required by Specification 5.5.11. Fuel oil determined to have one or more measured parameters, other than viscosity or water and sediment, outside acceptable limits will be evaluated for its effect on DG operation. Fuel oil which is determined to be acceptable for short term DG operation, but outside limits will be restored to within limits in accordance with LCO 3.~~7~~8.3 Condition ~~D~~F.

SR 3.8.3.4

INSERT from 3.8.1 Bases (pg 13)

REVISED
09/04/98

BASES

The batteries for the DC power sources are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The voltage limit is 2.13 volts per cell, which corresponds to a total minimum voltage output of 125.7 volts per battery discussed in the FSAR, Chapter 8 (Ref. 2). The criteria for sizing large lead storage batteries are defined in IEEE-485 (Ref. 3). Each DC electrical power source has ample power output capacity for the steady state operation of connected loads during normal operation, while at the same time maintaining its battery fully charged. Each battery charger also has sufficient capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads discussed in the FSAR, Chapter 8 (Ref. 2).

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable ~~above COLD SHUTDOWN~~ in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.8.1 "AC Sources - Operating".

5 The DC Sources satisfy Criterion 3 of 10 CFR 50.36(c)(2). RAI 3.8.4-02

LCO

The DC power sources, each consisting of one battery, one directly connected battery charger and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train are required to be OPERABLE to ensure the availability of DC control power and Preferred AC power to shut down the reactor and maintain it in a safe condition.

An OPERABLE DC electrical power source requires its battery to be OPERABLE and connected to the associated DC bus. In order for the battery to remain OPERABLE, one charger must be in service.

5 The LCO ~~specifies~~ requires chargers ED-15 and ED-16 because those available chargers are powered by the AC power distribution system and DG associated with the battery they supply. If only the cross connected chargers were ~~OPERABLE~~, and a loss of off-site power should occur concurrently with the loss of one DG, both safeguards trains would eventually become disabled. One train would be disabled by the lack of AC motive power; the other would become disabled when the battery, whose only OPERABLE charger is fed by the failed DG, became depleted.

2

REVISED
09/04/98

2

ELECTRICAL POWER SYSTEMS

2

B 3.~~7~~.5 ~~and 4.7.5~~ DC Sources - Shutdown

8

BASES

BACKGROUND

A description of the DC sources is provided in the Bases for LCO 3.~~7~~.4, "DC Sources - Operating." 8

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable during ~~COLD SHUTDOWN and REFUELING SHUTDOWN~~ MODES 5 and 6 is provided in the Bases for LCO 3.~~7~~.2 "AC Sources - Shutdown". 8

5 The DC sources satisfy Criterion 3 of 10 CFR 50.36 (c)(2). RAI 3.8.5-02

LCO

This LCO requires those, and only those, DC power sources which supply the DC distribution subsystems required by LCO 3.~~7~~.10, to be OPERABLE. Each DC source consists of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling. This ensures the availability of sufficient DC power sources to maintain the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and loss of shutdown cooling). 8

APPLICABILITY

The DC power sources required to be OPERABLE in ~~COLD SHUTDOWN, REFUELING SHUTDOWN,~~ MODES 5 and 6, and during movement of irradiated fuel assemblies provide assurance that equipment and instrumentation is available to:

RAI 3.8.5-03

a. Provide coolant inventory makeup,
b. Mitigate a fuel handling accident,
c. Mitigate shutdown events that can lead to core damage, and
d. Monitoring and maintaining the plant in ~~a COLD SHUTDOWN or REFUELING SHUTDOWN~~ Cold Shutdown condition, or Refueling Condition ~~shutdown~~

(2)

ELECTRICAL POWER SYSTEMS

B 3.7.6 ~~and 4.7.6~~ Battery Cell Parameters

BASES

BACKGROUND

This LCO delineates the limits on electrolyte temperature, level, float voltage, and specific gravity for the DC power source batteries. A discussion of these batteries is provided in the Bases for LCO 3.~~7~~.4, "DC Sources - Operating". (8)

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable ~~above COLD SHUTDOWN~~ for MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.~~7~~.1 "AC Sources - Operating"; during ~~COLD SHUTDOWN and REFUELING SHUTDOWN~~ MODES 5 and 6, in the Bases for LCO 3.~~7~~.2 "AC Sources - Shutdown". (8) (5)

RAI 3.7.6-01

(5) Battery cell parameters satisfy Criterion 3 of 10 CFR 50.36 (c)(2).

LCO

Battery cell parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Battery cell limits are conservatively established, allowing continued DC electrical system function even when Category A and B limits are not met.

The requirement to maintain the average temperature of representative cells above 70°F assures that the battery temperature is within the design band. Battery capacity is a function of battery temperature.

APPLICABILITY

The battery cell parameters are required solely for the support of the associated DC power sources. Therefore, they are only required when the DC power source is required to be OPERABLE. Refer to the Applicability discussions in the Bases for LCO 3.~~7~~.4 ~~"DC Sources - Operating"~~ and LCO 3.~~7~~.5, "DC Sources - Shutdown". (8) (8)

2

ELECTRICAL POWER SYSTEMS

B 3.~~7~~.7 ~~and 4.7.7~~: Inverters - Operating
8

BASES

BACKGROUND

4

The inverters (ED-06, ED-07, ED-08, and ED-09) are the normal source of power for the Preferred AC buses. The function of the inverter is to provide continuous AC electrical power to the Preferred AC buses, even in the event of an interruption to the normal AC power distribution system. A Preferred AC bus can be powered from the AC power distribution system via the Bypass Regulator if its associated inverter is out of service. An interlock prevents supplying more than one Preferred AC bus from the bypass regulator at any time. The station battery provides an uninterruptable power source for the instrumentation and controls for the Reactor Protective System (RPS) and the Engineered Safety Features (ESF).

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable ~~above COLD SHUTDOWN~~ in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.~~7~~.1 "AC Sources - Operating".
8

RAI 3.87-01

5

LCO

{ Inverters are a part of the distribution system and, as such, satisfy Criterion 3 of 10 CFR 50.36(c)(2). X

The inverters ensure the availability of Preferred AC power for the instrumentation required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA.

Maintaining the inverters OPERABLE ensures that the redundancy incorporated into the RPS and ESF instrumentation and controls is maintained. The four inverters ensure an uninterruptable supply of AC electrical power to the Preferred AC buses even if the 2400 volt safety related buses are de-energized.

An inverter is considered inoperable if it is not powering the associated Preferred AC bus, or if its output voltage or frequency is not within tolerances.

REVISED
09/04/98

BASES

SURVEILLANCE REQUIREMENTS

RAI 3.8.7.02

2

SR ~~4.7~~ 3.8.7.1 (Inverter checks)

This Surveillance verifies that the inverters are functioning properly and Preferred AC buses ~~energized from the inverter~~ energizing the. The verification of proper voltage and frequency output ensures that the required power is readily available for the instrumentation of the RPS and ESF connected to the Preferred AC buses. The 7 day Frequency takes into account indications available in the control room that alert the operator to inverter malfunctions.

X

REFERENCES

None

ELECTRICAL POWER SYSTEMS

2

B 3.~~7~~.8 ~~and 4.7.8~~: Inverters - Shutdown
8

BASES

BACKGROUND

A description of the inverters is provided in the Bases for LCO 3.~~7~~.7, 8
"Inverters - Operating".

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable during ~~COLD SHUTDOWN and REFUELING SHUTDOWN~~ MODES 5 and 6 is provided in the Bases for LCO 3.~~7~~.2 "AC Sources - Shutdown". 8 RAI 3.8.7-01

5 Inverters are part of the distribution system and, as such, satisfy Criterion 3 of 10 CFR 50.36(c)(2).

LCO

This LCO requires those, and only those, "Distribution Systems - Shutdown," inverters necessary to support to Preferred AC buses required by LCO 3.~~7~~.10, 8 to be OPERABLE.

This ensures the availability of sufficient Preferred AC electrical power to operate the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and loss of shutdown cooling).

An inverter is considered inoperable if it is not powering the associated Preferred AC bus, or it its voltage or frequency is not within tolerances.

APPLICABILITY

The inverters required to be OPERABLE in ~~COLD SHUTDOWN, REFUELING SHUTDOWN,~~ MODES 5 and 6 and during movement of irradiated fuel assemblies provide assurance that equipment and instrumentation is available to:

a. Provide coolant inventory makeup,
b. Mitigate a fuel handling accident,
c. Mitigate shutdown events that can lead to core damage~~;and~~
d. Monitoring and maintaining the plant in a ~~COLD SHUTDOWN or REFUELING SHUTDOWN~~ shutdown condition.

Leave "as is" use lower case letter

RAI 3.8.8-02

ELECTRICAL POWER SYSTEMS

B 3.7.9 ~~and 4.7.9~~: Distribution Systems - Operating

BASES

BACKGROUND

The onsite Class 1E AC, DC, and Preferred AC bus electrical power distribution systems are divided into two redundant and independent electrical power distribution trains. Each electrical power distribution train is made up of several subsystems which include the safety related buses, load centers, motor control centers, and distribution panels shown in Table 3.7.9-1.

The Class 1E 2400 volt safety related buses, Bus 1C and Bus 1D, are normally powered from offsite, but can be powered from the DGs, as explained in the Background section of the Bases for LCO 3.7.1, "AC Sources - Operating". Each 2400 volt safety related bus supplies one train of Class 1E the 480 volt distribution system.

The 120 volt Preferred AC buses are normally powered from the inverters. The alternate power supply for the buses is a constant voltage transformer, called the Bypass Regulator. Use of the Bypass regulator is governed by LCO 3.7.7, "Inverters - Operating." The bypass regulator is powered from the non-Class 1E instrument AC bus, Y-01. The Instrument AC bus is normally powered through an automatic bus transfer switch, an instrument AC transformer, and isolation fuses. Its normal power source is MCC-1. Loss of power to MCC-1 will cause automatic transfer of the Instrument AC bus to MCC-2.

There are two independent 125 volt DC electrical power distribution subsystems.

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable ~~above COLD SHUTDOWN~~ in MODES 1, 2, 3, and 4 is provided in the Bases for LCO 3.7.1 ~~"AC Sources - Operating"~~.

RAI 3.7.9.08

The distribution systems satisfy Criterion 3 of 10CFR 50.36(c)(2).

LCO

The AC, DC, and Preferred AC bus electrical power distribution subsystems are required to be OPERABLE. The required power distribution subsystems listed in Table 3.7.9-1 ensure the availability of AC, DC, and Preferred AC bus electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA.

BASES

Maintaining both trains of AC, DC, and Preferred AC bus electrical power distribution subsystems OPERABLE ensures that the redundancy incorporated into the plant design is not defeated. Therefore, a single failure within any electrical power distribution subsystem will not prevent safe shutdown of the reactor.

OPERABLE electrical power distribution subsystems require the buses, load centers, motor control centers, and distribution panels listed in Table 3.7.9-1 to be energized to their proper voltages. In addition, tie breakers between redundant safety related AC power distribution subsystems must be open when a 2400 volt source is OPERABLE for each train. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem. If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E 2400 volt buses from being powered from the same offsite circuit or preclude cross connecting Class 1E 480 volt subsystems when 2400 volt power is available for only one train.

This LCO does not address the power source for the Preferred AC buses. The Preferred AC buses are normally powered from the associated inverter. An alternate source, the Bypass Regulator, is available to supply one Preferred bus at a time, to allow maintenance on an inverter. The proper alignment of the inverter output breakers is addressed under the inverter LCOs. Therefore a Preferred AC Bus may be considered operable when powered from either the associated inverter or the Bypass Regulator, as long as the voltage and frequency of the supply is correct.

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 ~~above COLD SHUTDOWN~~ to ensure that AC, DC, and Preferred AC power is available to the redundant trains and channels of safeguards equipment, instrumentation and controls required to support engineered safeguards equipment in the event of an accident ~~or transient~~.

RAI 3.8.9-05

The AC source requirements for MODES 5 and 6 ~~COLD~~ are addressed in LCO 3.7.2, "AC Sources - Shutdown."

Electrical power distribution subsystem requirements for MODES 5 and 6 ~~COLD SHUTDOWN, REFUELING SHUTDOWN,~~ and during movement of irradiated fuel assemblies are addressed in LCO 3.7.10, "Distribution Systems - Shutdown".

BASES

3.7.9.E.1

5 An inoperable DC distribution subsystem can cause engineered safety features to be inoperable. If a redundant safety feature in the other train is concurrently inoperable, a loss of safety function could occur. ACTION C.1 requires compliance with Condition 3.7.9.E to assure that the plant is shutdown if a safety function is lost.

2 ~~3.7.9.C.2~~ C.1

RAI 3.8.9-04

With a one or more DC bus in one train inoperable, the remaining DC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining DC electrical power distribution subsystem could result in the minimum required ESF functions not being supported. Therefore, the required DC buses must be restored to OPERABLE status within 8 hours by powering the bus from the associated battery or charger.

X

This 8 hour limit is more conservative than Completion Times allowed for the vast majority of components which would be without power and is a feature of the original Palisades licensing basis.

5 INSERT

2 ~~3.7.9~~ D.1 and D.2

If the inoperable distribution subsystem cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to an operating condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least ~~HOT SHUTDOWN~~ MODE 3 within ~~12~~ 6 hours and to ~~COLD SHUTDOWN~~ MODE 5 within ~~48~~ 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

~~3.7.9~~ E.1

RAI 3.8.9-06

Condition E corresponds to a degradation in the electrical distribution system that ~~, together with another existing equipment failure,~~ causes a required safety function to be lost. When more than one LCO Condition is entered, and this results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.

BASES

SURVEILLANCE REQUIREMENTS

2

SR ~~4.7.9.1~~ 3.8 ~~(AC bus alignment check)~~

This surveillance verifies that the required AC, DC, and Preferred AC bus electrical power distribution subsystems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained.

For those buses which have undervoltage alarmed in the control room, correct voltage may be verified by the absence of an undervoltage alarm.

For those buses which have only one possible power source and have undervoltage alarmed in the control room, correct breaker alignment may be verified by the absence of an undervoltage alarm.

RAI 3.8.9-07

A Preferred AC Bus may be considered correctly aligned when powered from either the associated inverter or from the bypass regulator. A mechanical interlock prevents connecting two or more Preferred AC Buses to the Bypass Regulator. LCO 3.~~7~~8.7 and SR ~~4.7~~3.8.7.1 address the condition of supplying a Preferred AC Bus from the bypass regulator.

The 7 day Frequency takes into ~~account~~ 3.8 the redundant capability of the AC, DC, and Preferred AC bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

REFERENCES

None

5 → INSERT CTS TABLE 3.7.9-1
AS BASES TABLE B 3.8.9-1

2

ELECTRICAL POWER SYSTEMS

B 3.~~7~~ 10 ~~and 4.7.10~~: Distribution Systems - Shutdown
8

BASES

BACKGROUND

A description of the AC, DC, and Preferred AC bus electrical power distribution systems is provided in the Bases for LCO 3.~~7~~.9, "Distribution Systems - Operating".
8

APPLICABLE SAFETY ANALYSES

A description of the Safety Analyses applicable during ~~COLD SHUTDOWN and REFUELING SHUTDOWN~~ MODES 5 and 6 is provided in the Bases for LCO 3.~~7~~.2 "AC Sources - Shutdown".
8

RAI 3.8.10-02

5 The distribution systems satisfy Criterion 3 of 10 CFR 50.36 (c)(2).

LCO

This LCO requires those, and only those, AC, DC, and Preferred AC distribution subsystems to be OPERABLE which are necessary to support equipment required by other LCOs.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the plant in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

APPLICABILITY

The electrical power distribution subsystems required to be OPERABLE ~~in COLD SHUTDOWN, REFUELING SHUTDOWN~~ MODES 5 and 6, and during movement of irradiated fuel assemblies, provide assurance that equipment and instrumentation is available to:

RAI 3.8.10-03

a. Provide coolant inventory makeup,
b. Mitigate a fuel handling accident,
c. Mitigate shutdown events that can lead to core damage,
d. Monitoring and maintaining the plant in a ~~COLD SHUTDOWN or REFUELING SHUTDOWN~~ shutdown condition.

Leave as is use lower case

Change	Discussion
Note:	The CTS Bases for Electrical Power Systems are unique in they have been upgraded to incorporate the format, and much of the content, of NUREG-1432. These Bases have previously been reviewed and found acceptable by the NRC in support of Amendment 180 to the Palisades Technical Specifications dated April 29, 1998. To facilitate the review of the proposed Bases for ITS Section 3.8, a markup of the CTS Electrical Power Systems Bases has been provided which denotes only those differences between the previously approved CTS Bases and the proposed ITS Bases. In addition, a separate "red-line & strikeout" version of NUREG-1432, has been provided and will serve as a comparison between the CTS and NUREG-1432. A brief discussion of the deviations from the CTS Bases is provided below. The Change Numbers correspond to the respective deviation shown on the "CTS MARKUPS". The first five justifications were used generically throughout the markup of the CTS Bases.

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. Deviations have been made for clarity, grammatical preference, or to establish consistency within the Improved Technical Specifications. These deviations are editorial in nature and do not involve technical changes or changes of intent.

3. The requirement/statement has been deleted since it is not applicable to this facility. The following requirements have been renumbered, where applicable, to reflect this deletion.

4. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the facility specific nomenclature, number, reference, system description, or analysis description.

Change	Discussion
5.	These changes are made to reflect Palisades licensing basis, including any associated changes proposed in this submittal (which are justified by DOCs and NSHCs elsewhere), as presented in the associated ITS Specifications. Additional changes are also proposed to establish conformance with NUREG-1432 Bases. Rewording, reformatting, and revised numbering is made to incorporate these changes consistent with Writer's Guide conventions.
6.	The B 3.8.1 and B 3.8.4 Bases for those Surveillances that are associated with restrictions on which operational Modes they are allowed to be performed in, already address the issue that "credit may be taken for unplanned events that satisfy a surveillance requirement." In addition, the "credit may be taken..." concept applies to all surveillances, and is also addressed in the ITS Bases for SR 3.0.1. Therefore elimination of this discussion above all 3.8.1 Surveillance Bases is administrative only, with no technical change or change in intent. This presentation is consistent with NUREG-1432 and TSTF-8, Rev. 2.
7.	The B 3.8.1 Bases discussion of "standby conditions" for the DGs is enhanced to include the existing procedural limitations regarding time after air roll. The intent of this statement is to establish a minimum time at which a diesel generator is at rest prior to commencing the surveillance test. ITS SR 3.8.1.2 provides assurance that a diesel generator would start and be ready for loading in the time period assumed in the safety analysis. Prior to starting a diesel generator for SR 3.8.1.2, a cylinder leakage test is performed by briefly (minimum of 5 seconds) cranking the diesel engine and observing the test cocks for the expulsion of water or oil. To avoid invalidating the test results of SR 3.8.1.2 by "preconditioning" a diesel engine, an elapse time of 20 minutes has been specified since the diesel engine was last air rolled. The specified time is based on engineering judgement considering vendor recommendations. Although this information is presently contained in plant procedures and imposes an additional restriction on the performance of the test, inclusion of this information in the Bases of SR 3.8.1.2 is appropriate since it preserves the original intent of the surveillance test.
8.	CTS requirements and Actions (and associated Bases) for DG fuel transfer pumps and DG starting air, are presented in the AC Sources-Operating Specification. ITS administratively relocates these requirements and Actions to a separate Specification (3.8.3): Diesel Fuel, Lube Oil, and Starting Air. This relocation is appropriate for those support system with a justified restoration time that is allowed prior to applying the restoration time for an inoperable DG.

Change	Discussion
9.	TSTF-38 adds clarifying statements to the Bases of the battery inspection surveillance, which are adopted in the Palisades ITS Bases. Since this change only clarifies the existing intent, the change is acceptable.
10.	This CTS Bases statement is in conflict with the CTS (and proposed ITS) requirements. The statement was mistakenly included with the recent amendment. Elimination of the statement corrects an obvious error.
11.	Clarification added to indicate the source of information relating resistance to voltage drop.
12.	The CTS Bases associated with assumed lube oil consumption have been revised based on recently aquired information from the manufacturer which has been verified by plant specific testing.

ATTACHMENT 4

CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET 50-255

CONVERSION TO IMPROVED TECHNICAL SPECIFICATIONS
RESPONSE TO JULY 27, 1998 REQUEST FOR ADDITIONAL INFORMATION

REVISED PAGES FOR SECTION 5.0

CONVERSION TO IMPROVED TECHNICAL SPECIFICATIONS
RESPONSE TO JULY 27, 1998 REQUEST FOR ADDITIONAL INFORMATION
REVISED PAGES FOR SECTION 5.0

Page Change Instructions

Revise the Palisades submittal for conversion to Improved Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by date and contain vertical lines in the margin indicating the areas of change.

REMOVE PAGES	INSERT PAGES	REV DATE	NRC COMMENT #
INTRODUCTION			
	ATTACHMENT 1 TO ITS CONVERSION SUBMITTAL		
5.0-10	5.0-10	09/04/98	N/A editorial
5.0-11	5.0.11	09/04/98	N/A TSTF 279
	ATTACHMENT 2 TO ITS CONVERSION SUBMITTAL		
No page change			
	ATTACHMENT 3 TO ITS CONVERSION SUBMITTAL		
CTS 5.0 pg 13 of 29	CTS 5.0 pg 13 of 29	09/04/98	N/A TSTF-279
DOC 5.0 pg 2 of 6	5.0 pg 2 of 6	09/04/98	RAI 5.6-02
DOC 5.0 pg 5 of 6	5.0 pg 5 of 6	09/04/98	N/A editorial
DOC 5.0 pg 6 of 6	5.0 pg 6 of 6	09/04/98	TSTF-279
	ATTACHMENT 4 TO ITS CONVERSION SUBMITTAL		
No page change			
	ATTACHMENT 5 TO ITS CONVERSION SUBMITTAL		
NUREG 5.0-8	NUREG 5.0-8	09/04/98	RAI 5.5-01
NUREG 5.0-10	NUREG 5.0-10	09/04/98	N/A editorial
NUREG 5.0-11	NUREG 5.0-11	09/04/98	N/A TSTF-279
ATTACHMENT 6			
5.0 pg 6 of 6	5.0 pg 6 of 6	09/04/98	N/A TSTF 279

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

h. Limitations on the annual doses or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR 190.

5.5.5 Containment Structural Integrity Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Containment Structural Integrity Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWE and IWL.

If, as a result of a tendon inspection, corrective retensioning of five percent (8) or more of the total number of dome tendons is necessary to restore their liftoff forces to within the limits, a dome delamination inspection shall be performed within 90 days following such corrective retensioning. The results of this inspection shall be reported to the NRC in accordance with Specification 5.6.7, "Containment Structural Integrity Surveillance Report."

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Containment Structural Integrity Surveillance Program inspection frequencies.

5.5.6 Primary Coolant Pump Flywheel Surveillance Program

a. Surveillance of the primary coolant pump flywheels shall consist of a 100% volumetric inspection of the upper flywheels each 10 years.

b. The provisions of SR 3.0.2 are not applicable to the Flywheel Testing Program.

5.5 Programs and Manuals

5.5.7 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program shall include the following:

a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda (B&PV Code) as follows:

B&PV Code terminology for inservice testing activities	Required interval for performing inservice testing activities
Weekly	≤ 7 days
Monthly	≤ 31 days
Quarterly or every 3 months	≤ 92 days
Semiannually or every 6 months	≤ 184 days
Every 9 months	≤ 276 days
Yearly or annually	≤ 366 days
Biennially or every 2 years	≤ 731 days

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

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

d. Nothing in the B&PV Code shall be construed to supersede the requirements of any Technical Specification.

5.5.8 Steam Generator Tube Surveillance Program

This program provides controls for surveillance testing of the Steam Generator (SG) tubes to ensure that the structural integrity of this portion of the Primary Coolant System (PCS) is maintained. The program shall contain controls to ensure:

a. Steam Generator Tube Sample Selection and Inspection

The inservice inspection may be limited to one SG on a rotating schedule encompassing 6% of the tubes if the results of previous inspections indicate that both SGs are performing in a like manner. If the operating conditions in one SG are found to be more severe than those in the other SG, the sample sequence shall be modified to inspect the most severe conditions.

5.5.5 6.5.5 Reserved CONTAINMENT STRUCTURAL INTEGRITY SURVEILLANCE PROGRAM

< ADD Program from NUREG-1432 >

5.5.6 6.5.6 Primary Coolant Pump Flywheel Surveillance Program

a. Surveillance of the primary coolant pump flywheels shall consist of a 100% volumetric inspection of the upper flywheels each 10 years.

b. The provisions of Surveillance Requirement 4.0.2 are NOT applicable to the Flywheel Testing Program.

5.5.7 6.5.7 Inservice Inspection and Testing Program

A.7

This program provides controls for inservice inspection and testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

LA.2

a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda (B&PV Code) as follows:

B&PV Code terminology for inservice testing activities	Required interval for performing inservice testing activities
Weekly	≤ 7 days
Monthly	≤ 31 days
Quarterly or every 3 months	≤ 92 days
Semiannually or every 6 months	≤ 184 days
Every 9 months	≤ 276 days
Yearly or annually	≤ 366 days
Biennially or every 2 years	≤ 731 days

b. The provisions of Surveillance Requirement 4.0.2 (SR 3.0.2) are applicable to the above required intervals for performing inservice testing activities; A.1

c. The provisions of Surveillance Requirement 4.0.3 (SR 3.0.3) are applicable to inservice testing activities; and A.1

d. Nothing in the B&PV Code shall be construed to supersede the requirements of any Technical Specification.

A.5 CTS 6.4.1 requires that written procedures shall be established, implemented, and maintained for the activities listed. In this list, the CTS contains item b., "Refueling operations, and item c., "Surveillance and test activities of safety-related activities." These items are included in the procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978 which is referenced in CTS 6.4.1a and included in the proposed ITS 5.4.1a. Therefore, since these procedures are already required by the reference to Regulatory Guide 1.33, Revision 2, February 1978, they are not included in the proposed ITS. This change is an administrative change since no requirements have changed. This change maintains consistency with NUREG-1432.

A.6 CTS 6.4.1 requires that written procedures shall be established, implemented, and maintained for the activities listed. In this list, the CTS contains item f., "Site Security Plan implementation" and item g.,"Site Emergency Plan implementation.." These items were recommended to be removed from the Technical Specifications in NRC Generic Letter 93-07 since they are duplicative of regulations contained in the Code of Federal Regulations part 50 and 73. This change is considered to be an administrative change since these requirements must still be met as required by the Code of Federal Regulations. This change maintains consistency with NUREG-1432.

A.7 CTS 6.5.7 is entitled "Inservice Inspection and Testing Program." In the proposed ITS 5.5.7, the title is changed to the "Inservice Testing Program." This change is considered to be an administrative change since the requirements of the program are unchanged. This change maintains consistency with NUREG-1432.

A.8 CTS 6.6.5b.1 lists, among referenced LCOs, "3.10.1." That item is unnecessary and has been deleted. Neither CTS 3.10.1, nor its ITS replacement reference the COLR. CTS 6.6.5 a. lists the core operating limits that are established and documented in the COLR prior to each core reload. Specifically, these limits are: ASI Limits (CTS 3.1.1), Regulating Group Insertions Limits (CTS 3.10.5), Linear Heat Rate Limits (CTS 3.23.1), and Radial Peaking Factor Limits (CTS 3.23.2). CTS 6.6.5 b. list the documents approved by the NRC that describe the analytical methods used to determine the core operating limits. As part of this listing, cross references are made to the LCOs pertaining to the affected limit (e.g., ASI Limits, Regulating Group Insertion Limits, etc...). In error, CTS 6.6.5 b.1. lists CTS 3.10.1 (Shutdown Margin Requirements) as an LCO related to a document that describes analytical methods used to determine the core operating limits. Since Shutdown Margin is not a cycle dependent limit (the limit is contained in the technical specifications and not in the COLR), referencing CTS 3.10.1 in CTS 6.6.5 b.1 is inappropriate and has been deleted. This change has been characterized as administrative in nature since it does not alter any requirement of the CTS, but simply corrects an administrative oversight.

M.4 The CTS does not contain a Safety Functions Determination Program. Proposed ITS 5.5.13 includes this program. This program is added to work in conjunction with the proposed ITS in identifying any loss of safety function which might exist. Because the CTS did not contain this program, and its implementation requires additional evaluations to identify a loss of safety function than what is required in the CTS, this change is considered to be a more restrictive change. This change maintains consistency with NUREG-1432.

M.5 CTS 6.6.7 contains the reporting requirements for specific accident monitoring instrument channels that are not restored to an Operable status within the required Completion Time. CTS 6.6.7 requires that a report be submitted within 30 days. Proposed ITS 5.6.6 also contains reporting requirements for specific accident monitoring instrument channels that are not restored to an Operable status within the required Completion Time. However, the ITS requires that a report be submitted within 14 days. As such, the proposed change imposes an additional restriction on plant operations since the time period allowed to submit the report has been shortened from 30 days to 14 days. This change has been proposed to establish consistency with NUREG-1432 and is deemed acceptable since it only involves a change to administrative requirements and does not alter the way in which the plant is operated.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

LA.1 CTS Specification 4.5.4, Surveillance for Prestressing System (page 4-21a) and 4.5.5, End Anchorage Concrete Surveillance (page 4-21c) were replaced by proposed ITS Specification 5.5.5, the Containment Structural Integrity Surveillance Program. The proposed specification emulates the ISTS treatment of containment structural integrity surveillance requirements. The details associated with containment tendon inspections have been removed from the technical specification and reference has been included in ITS 5.5.5 to ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE and IWL which establishes the applicable test methods, acceptance criteria and testing frequencies. Removal of these details is acceptable since testing of containment tendons in accordance with ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE and IWL is specified in 10 CFR 50.55a. Thus, this change eliminates duplication of federal regulations and can be made without an impact on public health and safety. Removal of these details from the CTS and the incorporation of a containment tendon surveillance program in Section 5.0 of the ITS is consistent with NUREG-1432.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

LA.2 CTS 6.5.7, Inservice Inspection and Testing Program has been revised to delete the phrase "including applicable supports." Requirements for inservice inspections of ASME Code Class 1, 2, and 3 components are specificed in 10 CFR 50.55a(g). As used in CTS 6.5.7, "applicable supports" is intended to apply to the inspection of snubbers. Adaptation of this phrase in the CTS was consistent with the NRC's approach to address concerns related to the relocation of the Snubber LCO from the ISTS NUREGs. Subsequently, the ISTS NUREGs have been modified to delete this phrase in recognition that it duplicates requirements specifed in the CFRs (See Section 5.0, JFD 26 addressing TSTF-279). As such, the deletion of this phrase from the CTS can be made without a significant impact on safety since the inspection of applicable supports continues to be required by 10 CFR 50.55a(g).

LESS RESTRICTIVE CHANGES (L)

There were no "Less Restrictive" changes made to this chapter.

RELOCATED (R)

There were no "Relocated" changes made to this chapter.

CTS

5.5 Programs and Manuals

6.5.1 **5.5.1** Offsite Dose Calculation Manual (ODCM) (continued)

the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

6.5.2 **5.5.2** Primary Coolant Sources Outside Containment

RAI 5.5-01

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include the Shutdown Cooling System, Containment Spray, Safety Injection, Chemical and Volume Control, gas stripper, and Hydrogen Recombiner containment sump suction piping. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; ~~and~~

b. Integrated leak test requirements for each system at refueling cycle intervals or less;

<Insert> (12)

6.5.3 **5.5.3** Post Accident Sampling

accurately determine the airborne iodine concentration in vital areas and which will ensure the capability to (13)

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents and containment atmosphere samples under accident conditions. The program shall include the following:

a. Training of personnel;

b. Procedures for sampling and analysis; and

c. Provisions for maintenance of sampling and analysis equipment.

6.5.4 **5.5.4** Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably

(continued)

5.5 Programs and Manuals

6.5.4 **5.5.4** Radioactive Effluent Controls Program (continued)

f (7). Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;

g (8). Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and

h (9). Limitations on the annual dose or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

~~**5.5.5** Component Cyclic or Transient Limit~~

~~This program provides controls to track the FSAR Section [ ] cyclic and transient occurrences to ensure that components are maintained within the design limits.~~ (15)

Containment Structural Integrity Surveillance Program (23)

new **5.5.~~6~~ (5)** ~~Pre-Stressed Concrete Containment Tendon Surveillance Program~~

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The ~~Tendon~~ Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with ~~Regulatory Guide 1.35, Revision 3, 1989~~ ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWE and IWL. (1) (2)

4.5.6 <INSERT>

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the ~~Tendon~~ CONTAINMENT STRUCTURAL INTEGRITY Surveillance Program inspection frequencies. (23)

6.5.6 **5.5.~~7~~ (6)** Primary ~~Reactor~~ Coolant Pump Flywheel Inspection Program (4)

~~This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of regulatory position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975.~~ (16)

Surveillance of the primary coolant pump flywheels shall consist of a 100% volumetric inspection of the upper flywheels each 10 years.

The provisions of SR 3.0.2 are NOT applicable to the Primary Coolant Pump Flywheel Inspection Program

(continued)

REVISED 09/04/98

5.5 Programs and Manuals (continued)

6.5.7 **5.5.~~8~~ 7** Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following: 26

a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda (B&PV Code) as follows: 5

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

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

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

d. Nothing in the ~~ASME Boiler and Pressure Vessel~~ B&PV Code shall be construed to supersede the requirements of any ~~TS.~~ TECHNICAL SPECIFICATION 5 2

6.5.8 **5.5.~~9~~ 8** Steam Generator (SG) Tube Surveillance Program

Reviewer's Note: The Licensees current licensing basis steam generator tube surveillance requirements shall be relocated from the LCO and included here. An appropriate administrative controls program format should be used. 1

<INSERT SG Tube Surveillance Program from CTS> 5 24

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REVISED
09/04/98

Change	Discussion
23.	NUREG-1432 5.5.6 specifies the requirements for the Tendon Surveillance Program. The proposed ITS revises this title to the Containment Structural Integrity Surveillance Program and replaces the plant specific requirements which currently exists in CTS 4.5.4 and 4.5.5. This program and the associated report (ITS 5.6.7), include requirements relating to dome delamination in addition to tendon testing. The program and report names were changed accordingly. This change is acceptable because the NUREG-1432 5.5.6 is in brackets to indicate that the plant specific information is to be provided if the report is applicable.
24.	NUREG-1432 5.5.9 and 5.5.13 are revised to incorporate TSTF-118 which provides consistent application of SR 3.0.2 and SR 3.0.3 to the Programs referenced by ITS SRs.
25.	NUREG-1432 5.6.1 and 5.6.3 are revised to incorporate TSTF-152 which reflects previous revisions to 10 CFR Part 20 and 10 CFR 50.36a.
26.	Reference to the "applicable support" was deleted from the description of the Inservice Testing (IST) Program. The IST Program provides control for testing Code Class 1, 2, and 3 components. The discussion of the IST Program in Section 5.5 of the ISTS was revised by the NRC to include the "applicable supports" in February 1992 due to concerns related to the relocation of the Snubber LCO from the ISTS NUREGs. However, this is inappropriate; supports are addressed under the Inservice Inspection Program not the IST Program. Thus, the reference to the "applicable supports" in the IST Program description was deleted. This change is consistent with NUREG-1432 as modified by TSTF-279.