ENCLOSURE 2

VOLUME 13

TURKEY POINT NUCLEAR GENERATING STATION UNIT 3 AND UNIT 4

IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS SECTION 3.8 ELECTRICAL POWER SYSTEMS

Revision 0

LIST OF ATTACHMENTS

ATTACHMENT 1

ITS 3.8.1, AC SOURCES - OPERATING

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

INSERT 1 LA01

LCO 3.8.1.a a. Two ~~startup transformers and their associated circuits~~, and

LA02

LCO 3.8.1.b b. Three ~~separate and independent~~ diesel generators* including, capable of supplying the onsite Class 1E power distribution subsystem(s), A02

1) For Unit 3, two (3A and 3B); for Unit 4, one (3A or 3B) each with:

SR 3.8.1.3 a) A separate skid-mounted fuel tank and a separate day fuel tank with an OPERABLE solenoid valve to permit gravity flow from the day tank to the skid mounted tank, and with the two tanks together containing a minimum of 2000 gallons of fuel oil.

SR 3.8.1.2 Note 5

b) A common Fuel Storage System containing a minimum volume of 38,000 gallons of fuel,**

See ITS 3.8.3

SR 3.8.1.5 c) A separate fuel transfer pump,**

d) Lubricating oil storage containing a minimum volume of 120 gallons of lubricating oil,

e) Capability to transfer lubricating oil from storage to the diesel generator unit, and

f) Energized MCC bus (MCC 3A vital section for EDG 3A, MCC 3K for EDG 3B).

See ITS 3.8.9

LCO 3.8.1.b 2) For Unit 3, one (4A or 4B); for Unit 4, two (4A and 4B) each with:

SR 3.8.1.3 a) A separate day fuel tank containing a minimum volume of 230 gallons of fuel,

b) A separate Fuel Storage System containing a minimum volume of 34,700 gallons of fuel,

See ITS 3.8.3

SR 3.8.1.5 c) A separate fuel transfer pump, and

d) Energized MCC bus (MCC 4J for EDG 4A, MCC 4K for EDG 4B).

See ITS 3.8.9

c. Automatic load sequencers for Train A and Train B A03

Actions Note 2 *Whenever one or more of the four EDG's is out-of-service, ensure compliance with the EDG requirements specified in Specifications 3.5.2 and 3.8.2.1.

Add proposed SR 3.8.1.5 Note A04

~~**A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement 4.8.1.1.2i.1 for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively~~.

See ITS 3.8.3

LA01

INSERT 1

LCO 3.8.1 qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

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

ACTION:

Actions Note 1 NOTE: LCO 3.0.4.b is not applicable to diesel generators.

offsite LA01

Actions A a. With one of two ~~startup transformers or an associated~~ circuit inoperable:

Required Action (RA) A.1 1. Demonstrate the OPERABILITY of the other ~~startup transformer and its associated~~ circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter.

RA A.2 2. Within 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s), declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.

offsite circuit LA01

Actions B 3. If the inoperable ~~startup transformer~~ is the associated ~~startup transformer~~ and became inoperable while the unit is in Mode 1:

RA B.1.1 a) Reduce THERMAL POWER to ≤30% RATED THERMAL POWER within 24 hours, or

offsite LA01

RA B.2 b) Restore the inoperable ~~startup transformer and associated~~ circuits to OPERABLE status within the next 48 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ within ~~the following 30~~ hours. L01

Action J

MODE 4 12 LA01

RA B.1.2, Action D 4. If THERMAL POWER is reduced to ≤30% RATED THERMAL POWER within 24 hours or if the inoperable startup transformer is associated with the opposite unit, restore the ~~startup transformer and its associated~~ circuits to OPERABLE status within 30 days of the loss of OPERABILITY, or be in at least HOT STANDBY within the next 12 hours and in ~~COLD SHUTDOWN~~ within ~~the following 30~~ hours. offsite L01

Action K

MODE 4 18 offsite circuit LA01

Action C 5. If the inoperable ~~startup transformer~~ is the associated ~~startup transformer~~ and became inoperable while the unit was in MODE 2, 3, or 4, restore the ~~startup transformer and its associated circuits~~ to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within 6 hours and in ~~COLD SHUTDOWN within the following 30~~ hours. This ACTION applies to both units simultaneously.

Action J

RA C.1 Note

MODE 4 within 12 L01

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

Action E — b. With one of the required diesel generators inoperable:

offsite circuits LA01

RA E.1 — 1. Demonstrate the OPERABILITY of the above required ~~startup transformers~~ and their associated circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter.

LA03

2. ~~If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing,~~ demonstrate the OPERABILITY of the remaining required diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours, unless the absence of any potential common mode failure for the remaining diesel generators is determined. ~~If testing of remaining required diesel generators is required, this testing must be performed regardless of when the inoperable diesel generator is restored to OPERABILITY.~~

RA E.4.2

RA E.4.1

L02

RA E.5 — 3. Restore the inoperable diesel generator to OPERABLE status within 14 days** or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours.

Action J

L01

RA G.1 and G.2 Note — NOTE: Enter applicable Actions of LCO 3.8.3.1, "Onsite Power Distribution - Operating," when ACTION c is entered with no AC power source to any train.

Action G — c. With one ~~startup transformer~~ offsite circuit and one of the required diesel generators inoperable:

LA01

RA A.2 — 1. Demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on the remaining ~~startup transformer and associated circuit~~s within 1 hour and at least once per 8 hours thereafter.

LA03

L03

2. ~~If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing,~~ demonstrate the OPERABILITY of the remaining required diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours, unless it can be confirmed that the cause of the inoperable diesel generator does not exist on the remaining required diesel generators~~, unless the diesel generators are already operating~~. If testing of remaining required diesel generators is required, this testing must be performed regardless of when the inoperable diesel generator is restored to OPERABILITY.

RA E.4.2

RA E.4.1

RA E.4.2 Note

LA03

RA G.1, RA G.2 — 3. Restore one of the inoperable sources to OPERABLE status in accordance with ACTIONS ~~a~~ and b, as appropriate.

Add proposed Required Action G.1 M01

Acton A, Action E — 4. Restore the other A.C. power source (startup transformer or diesel generator) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 ACTION a or b, as appropriate, with the time requirement of that ACTION based on the time of initial loss of the remaining inoperable A.C. power source.

RA G.2 — ** 72 hours if inoperability is associated with Action Statement 3.8.1.1.c.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

d. With one diesel generator inoperable, in addition to ACTION b. or c. above, verify that:

RA E.3 1. All required systems, subsystems, trains, components, and devices (except safety injection pumps) that depend on the remaining required OPERABLE diesel generators as a source of emergency power are also OPERABLE.

Action J If this condition is not satisfied within ~~2~~ 4 hours, be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 12 hours. L04 L01

RA E.2 2. At least two Safety Injection pumps are OPERABLE and capable of being powered from their associated OPERABLE diesel generators.

Action K If this condition is not satisfied within 2 hours, be in at least HOT STANDBY within the next 12 hours and in HOT SHUTDOWN within the following 6 hours.

RA E.2 Note This ACTION applies to both units simultaneously.

Action F e. With two of the above required ~~startup transformers or their associated circuits~~ offsite circuit inoperable: LA01

RA F.1 1. Within 12 hours from discovery of two offsite circuits inoperable concurrent with inoperability of redundant required feature(s), declare required feature(s) inoperable when its redundant required feature(s) is inoperable.

RA F.2 2. Restore at least one of the inoperable ~~startup transformers~~ offsite circuit to OPERABLE status within 24 hours LA01

Action J or be in at least HOT STANDBY within the next 6 hours* and in ~~COLD SHUTDOWN within the following 30 hours~~ MODE 4 within 12 hours. L01

RA F.2 Note This ACTION applies to both units simultaneously.

Action A 3. With only one ~~startup transformer and associated circuits~~ offsite circuit restored, perform Surveillance Requirement 4.8.1.1.1.a on the OPERABLE ~~Startup transformer~~ offsite circuit at least once per 8 hours, and restore the other ~~startup transformer and its associated circuits~~ offsite circuits to OPERABLE status or shutdown in accordance with the provisions of ACTION 3.8.1.1.a with time requirements of that ACTION based on the time of initial loss of a ~~startup transformer~~ offsite circuit. This ACTION applies to both units simultaneously. LA01 LA01

Action L ~~*If the opposite unit is shutdown first, this time can be extended to 42 hours~~. Add proposed Action J Note and Proposed Action L L05

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

offsite LA01

Action H

RA E.1

f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two ~~startup transformers and their~~ offsite ~~associated~~ circuits by performing the requirements of Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore all required diesel generators to OPERABLE status within 14 days from time of initial loss or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following~~ 12 hours.

RA H.1

Action I

RA E.4

Action J

L01

g. Following the addition of the new fuel oil* to the Diesel Fuel Oil Storage Tanks, with one or more diesel generators with new fuel oil properties outside the required Diesel Fuel Oil Testing Program limits, restore the stored fuel oil properties to within the required limits within 30 days.

h. With one or more diesel generators with stored fuel oil total particulates outside the required Diesel Fuel Oil Testing Program limits, restore the fuel oil total particulates to within the required limits within 7 days.

See ITS 3.8.3

Add proposed Action I A06

Add proposed Action M A07

Add proposed Action J Note, Action K, and Action L A08

See ITS 3.8.3

* The properties of API Gravity, specific gravity or an absolute specific gravity; kinematic viscosity; clear and bright appearance; and flash point shall be confirmed to be within the Diesel Fuel Oil Testing Program limits, prior to the addition of the new fuel oil to the Diesel Fuel Oil Storage Tanks.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

offsite circuit

LA01

4.8.1.1.1 Each of the above required ~~startup transformers and their associated circuits~~ shall be:

SR 3.8.1.1

a. Determined OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments, indicated power availability, and

SR 3.8.1.7

b. Demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program ~~while shutting down~~, by transferring manually unit power supply from the auxiliary transformer to the startup transformer.

Add proposed SR 3.8.1.7 Note

L06

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE*:

a. In accordance with the Surveillance Frequency Control Program by:

SR 3.8.1.3

1) Verifying the fuel volume in the day and skid-mounted fuel tanks (Unit 4-day tank only),

2) Verifying the fuel volume in the fuel storage tank,

3) Verifying the lubricating oil inventory in storage,

See ITS 3.8.3

SR 3.8.1.6

SR 3.8.1.2 Note 1

4) Verifying the diesel starts and accelerates to reach a generator voltage and frequency of 3950-4350 volts and 60 ± 0.6 Hz. In accordance with the Surveillance Frequency Control Program, these conditions shall be reached within 15 seconds after the start signal from normal conditions. For all other starts, warmup procedures, such as idling and gradual acceleration as recommended by the manufacturer may be used. ~~The diesel generator shall be started for this test by using one of the following signals:~~

~~a) Manual, or~~

~~b) Simulated loss-of-offsite power by itself, or~~

~~c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or~~

~~d) An ESF Actuation test signal by itself.~~

LA04

SR 3.8.1.2

SR 3.8.1.2 Note 5

5) Verifying the generator is synchronized, loaded** to 2300 - 2500 kW (Unit 3), 2650-2850 kW (Unit 4)***, operates at this loaded condition for at least 60 minutes and for Unit 3 until automatic transfer of fuel from the day tank to the skid mounted tank is demonstrated, and the cooling system is demonstrated OPERABLE.

~~6) Verifying the diesel generator is aligned to provide standby power to the associated emergency buses.~~

LA05

add proposed SR 3.8.1.2 Note 3 M02

add proposed SR 3.8.1.2 Note 4 M03

SR 3.8.1.6 Note,
SR 3.8.1.10 Note 1
SR 3.8.1.11 Note 1
SR 3.8.1.14 Note 2
SR 3.8.1.18 Note 1
SR 3.8.1.19 Note

* All diesel generator starts for the purpose of these surveillances may be proceeded by a prelube period as recommended by the manufacturer.

SR 3.8.1.2 Note 1

** May include gradual loading as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

SR 3.8.1.2 Note 2

***Momentary transients outside these load bands do not invalidate this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.5

b. Demonstrating that a fuel transfer pump starts automatically and transfers fuel from the storage system to the day tank, in accordance with the Surveillance Frequency Control Program; L07

SR 3.8.1.4

c. In accordance with the Surveillance Frequency Control Program ~~and after each operation of the diesel where the period of operation was greater than or equal to 1 hour~~ by checking for and removing accumulated water from the day and skid-mounted fuel tanks (Unit 4-day tank only);

d. In accordance with the Surveillance Frequency Control Program by checking for and removing accumulated water from the fuel oil storage tanks; See ITS 3.8.3

e. By verifying fuel oil properties of new fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

f. By verifying fuel oil properties of stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

SR 3.8.1.8 Note 1, SR 3.8.1.9 Note 1, SR 3.8.1.10 Note 2, SR 3.8.1.11 Note 2, SR 3.8.1.12 Note, SR 3.8.1.13 Note 2, SR 3.8.1.15 Note, SR 3.8.1.16 Note, SR 3.8.1.17 Note, SR 3.8.1.18 Note 2

g. In accordance with the Surveillance Frequency Control Program, ~~during shutdown~~ (applicable to only the two diesel generators associated with Add proposed SR 3.8.1.8 through SR 3.8.1.12 and SR 3.8.1.15 through SR 3.8.1.18 MODE restriction NOTE L08

1) ~~Deleted~~ its associated single largest post-accident load LA06

SR 3.8.1.8

2)* Verifying the generator capability to reject a load of greater than or equal to ~~392 kW~~ without exceeding a frequency of 66.25 Hz. Within 2 seconds following the load rejection, the generator shall return to within 3950-4350 volts and frequency shall return to within 60 ± 0.6 Hz; add proposed SR 3.8.1.8 Note 1 L08 add proposed SR 3.8.1.8 Note 2 M04

SR 3.8.1.9

3)* Verifying the generator capability to reject a load of greater than or equal to 2500 kW (Unit 3), 2874 kW (Unit 4) without tripping. The generator voltage shall return to less than or equal to 4784 volts within 2 seconds following the load rejection; add proposed SR 3.8.1.9 Note 1 L08 add proposed SR 3.8.1.9 Note 2 M04

SR 3.8.1.10

4) ~~Simulating a~~ On an actual or simulated loss-of-offsite power by itself, and: L09

a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and

b. Verifying the diesel starts on the auto-start signal, energizes the emergency busses with any permanently

add proposed SR 3.8.1.10 Note 2 L08

SR 3.8.1.8 Note 3, SR 3.8.1.9 Note 3

* For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

connected loads within 15 seconds, energizes the auto–connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the auto-connected shutdown loads. After automatic load sequencing, the steady-state voltage and frequency of the emergency busses shall be maintained at 3950-4350 volts and 60 ± 0.6 Hz during this test.

add proposed SR 3.8.1.11 Note 3 L08

SR 3.8.1.11 5) Verifying that on an ESF Actuation ~~test~~ actual or simulated signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal ~~and operates on standby~~ for greater than or equal to 5 minutes. The generator voltage and frequency shall be 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test; L09 M05

add proposed SR 3.8.1.11 requirements d and e

6) ~~Simulating a~~ On an actual or simulated loss-of-offsite power in conjunction with an ESF Actuation ~~test~~ actual or simulated signal, and: L09

SR 3.8.1.18

a) Verifying deenergization of the emergency busses and load shedding from the emergency busses;

add proposed SR 3.8.1.18 Note 3 L08

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with any permanently connected loads within 15 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After automatic load sequencing, the steady-state voltage and frequency of the emergency busses shall be maintained at 3950-4350 volts and 60 ± 0.6 Hz during this test; and

SR 3.8.1.12 c) Verifying that diesel generator trips that are made operable during the test mode of diesel operation are inoperable.

add proposed SR 3.8.1.12 Note 2 L08

SR 3.8.1.13 7)* # Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to 2550-2750 kW (Unit 3), 2950-3150 kW (Unit 4)** and during the remaining 22 hours of this test, the diesel generator shall be loaded to 2300-2500 kW (Unit 3), 2650-2850 kW (Unit 4)**. ~~The generator voltage and frequency shall be 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds after the start signal; the steady-state generator voltage and frequency~~ L10

add proposed SR 3.8.1.13 Note 2 M04

SR 3.8.1.14 Note 2 * For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

SR 3.8.1.13 Note 2, SR 3.8.1.14 Note 1 ** Momentary transients outside these load bands do not invalidate this test.

SR 3.8.1.13 # This test may be performed during POWER OPERATION

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.14

~~shall be maintained within these limits during this test.~~ Within 5 minutes ~~after completing this 24-hour test~~, verify the diesel starts and accelerates to reach a generator voltage and frequency of 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds after the start signal.** L11

~~8) Verifying that the auto-connected loads to each diesel generator do not exceed 2500 kW (Unit 3), 2874 kW (Unit 4);~~ L12

SR 3.8.1.15

9) Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status.

add proposed SR 3.8.1.15 Note L08

SR 3.8.1.16

10) Verifying that the diesel generator operating in a test mode, connected to its bus, a actual or simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power; L09

add proposed SR 3.8.1.16 Note L08

~~11) Verifying that the fuel transfer pump transfers fuel from the fuel storage tank (Unit 3), fuel storage tanks (Unit 4) to the day tanks of each diesel associated with the unit via the installed cross-connection lines;~~ LA07

SR 3.8.1.17

12) Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within ± 10% of its design interval;

add proposed SR 3.8.1.17 Note L08

~~13) Verifying that the diesel generator lockout relay prevents the diesel generator from starting;~~ L13

L11

** ~~If verification of the diesel's ability to restart and accelerate to a generator voltage and frequency of 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds following the 24 hour operation test of Specification 4.8.1.1.2.g.7) is not satisfactorily completed, it is not necessary to repeat the 24-hour test. Instead,~~ the diesel generator may be operated between 2300-2500 kW Unit 3, 2650-2850 kW (Unit 4) for 2 hours or until operating temperature has stabilized (whichever is greater). Following the 2 hours/operating temperature stabilization run, the EDG is to be secured and restarted within 5 minutes to confirm its ability to achieve the required voltage and frequency within 15 seconds~~.~~

SR 3.8.1.14 Note 1

SR 3.8.1.14

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L14

SR 3.8.1.19 h. In accordance with the Surveillance Frequency Control Program ~~or after any modifications which could affect diesel generator interdependence~~ by starting all required diesel generators simultaneously and verifying that all required diesel generators provide 60 ± 0.6 Hz frequency and 3950-4350 volts in less than or equal to 15 seconds: and

i. In accordance with the Surveillance Frequency Control Program, by draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank.*

j. At least once per 10 years, for Unit 4 only, by performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda.

See ITS 3.8.3

~~4.8.1.1.3 Reports - (Not Used)~~

See ITS 3.8.3

* A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement 4.8.1.1.2i for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively.

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS Limiting Condition for Operation (LCO) 3.8.1.1.b requires two separate and independent emergency diesel generators to be OPERABLE. ITS LCO 3.8.1 b.2 states "Two emergency diesel generators (EDGs) capable of supplying the onsite Class 1E power distribution subsystem(s)," shall be OPERABLE. This changes the CTS by stating that the EDGs are capable of supplying the required electrical power to the distribution subsystems that they serve.

This change is acceptable because the ITS technical requirement for EDGs remains unchanged from the CTS requirement. The addition of the ISTS wording "capable of supplying the onsite Class 1E power distribution subsystem(s)" provides a clarifying statement for the CTS requirements with no addition or deletion of technical requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A03 CTS LCO 3.8.1.1 does not contain a requirement for the sequence timers associated with surveillance requirement 4.8.1.1.2.g.12). ITS LCO 3.8.1, part c, requires the automatic load sequencers for Train A and Train B to be OPERABLE. This changes the CTS by specifically stating the LCO requirement for the sequence timer(s).

This change is acceptable because the addition of the sequencers to the LCO does not change the technical requirements of the CTS. The CTS essentially requires them to be OPERABLE but does not provide an LCO or Action Requirements. The addition of the sequence timer(s) does not add or delete any technical requirements to the CTS. This change is designated as administrative because the technical requirements of the specifications have not changed.

A04 CTS 3.8.1.1.b.1)c (OPERABILITY of a separate fuel transfer pump) footnote ** states, in part, that a temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement (SR) 4.8.1.1.2i.1 (Note that PTN License Amendments 263 and 258 (ML15166A320) changed CTS 4.8.1.1.2i.1 to CTS 4.8.1.1.2i but missed correcting this footnote) for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. ITS SR 3.8.1.5 (Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tanks) Note states that this SR is not required to be met for Unit 3 EDGs during use of a temporary Class III fuel storage system as allowed by LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air." This changes the CTS by referencing the ITS location that the allowance will be linked to.

This change is acceptable because it does not change the technical requirements of the CTS. CTS 3.8.1.1.b.1)b, CTS 3.8.1.1.b.1)c, and CTS 4.8.1.1.2.i contain the same footnote associated with the allowance for a temporary Class II fuel storage system. CTS 3.8.1.1.b.1)b and CTS 4.8.1.1.2.i requirements are being moved to a new ITS LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air." Because the allowance for a temporary fuel oil storage system mostly concerns the fuel oil storage volume and the cleaning of the fuel oil storage tank, the appropriate location for the allowance is ITS LCO 3.8.3. However, because the temporary fuel storage system will not use the fuel oil transfer pumps, a Note is added to SR 3.8.1.5 stating that this SR is not required to be met for Unit 3 EDGs during use of a temporary Class III fuel storage system as allowed by LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air." The ITS requirements are consistent with the CTS requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A06 CTS SR 4.8.1.1.2 states that each EDG shall be demonstrated OPERABLE. CTS SR 4.8.1.1.2.g.12) is associated with EDG OPERABILITY and states to verify that the automatic load sequence timer is OPERABLE with the interval between each load block within ± 10% of its design interval. If the requirement of CTS SR 4.8.1.1.2.g.12) cannot be met, the EDG is declared inoperable, and the appropriate Actions are entered. ITS LCO 3.8.1.c requires that the automatic load sequencers for Train A and Train B shall be OPERABLE. ITS Condition I requires that with one automatic load sequencer inoperable, to restore the automatic load sequencer to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program. This changes the CTS by providing a specific Condition for an inoperable automatic load sequencer with a stated Required Action.

This change is acceptable because it does not change the technical requirements of the CTS. The CTS requires the sequence timer(s) to be OPERABLE but does not provide an LCO or Action requirements. However, the CTS provides that if an automatic sequence timer(s) is inoperable the associated EDG is declared inoperable. CTS 3.8.1.1 ACTION b provides Actions and associated Completion Times for one inoperable EDG. CTS 3.8.1.1 ACTION b.3 states to restore the inoperable EDG to OPERABLE status within 14 days** or in accordance with the Risk Informed Completion Time Program or shut down the unit. Footnote ** states that the Completion Time is 72 hours if EDG inoperability is associated with Action 3.8.1.1.c [one startup transformer and required EDG inoperable]. Because the automatic load sequencer affects the load sequencing when the bus is powered from the EDG and the offsite power, the 72-hour Completion Time is appropriate. The addition of the sequence timer(s) does not add or delete any technical requirements to the CTS. This change is designated as administrative because the technical requirements of the specifications have not changed.

A07 CTS 3.8.1.1 does not contain an Action for more than one offsite circuit inoperable concurrent with two EDGs inoperable. Thus, having more than one offsite circuit inoperable concurrent with two EDGs inoperable requires entering CTS 3.0.3. ITS 3.8.1 ACTION M requires entering LCO 3.0.3 immediately if three or more AC sources are inoperable. This changes the CTS by adding a specific ACTION requiring entry into LCO 3.0.3 when three or more required AC sources are inoperable.

This change is acceptable because the CTS Actions for three or more required AC sources inoperable are the same as the ITS ACTIONS. This change is necessary due to the format of ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

A08 CTS 3.8.1.1 Actions, in part, state, "This ACTION applies to both units simultaneously." In addition, CTS 3.8.1.1 ACTIONs provide different Completion Times to shut down the Unit(s) to at least HOT STANDBY (MODE 3). Generally, two different Completion Times are used in CTS to reach HOT SHUTDOWN, 6 hours and 12 hours based on how many units are being shutdown simultaneously. A variance of these Completion Times is used if a dual unit shutdown is required without offsite power (i.e., natural circulation cooldown required) that provides additional time to bring the units to COLD SHUTDOWN consecutively. ITS provides three different Actions depending on a single unit shut down (ACTION J), dual unit shut down (ACTION K), or dual unit shut down using natural circulation (ACTION L). This changes the CTS by providing distinct separate Actions in each of the three different conditions.

CTS shutdown Actions and associated Completion Times provide a reasonable period to shut down the unit in an orderly manner without challenging Unit systems, based on operating experience. As described in the CTS bases, when a single unit is affected, the time to be in HOT STANDBY is 6 hours. When an ACTION statement requires a dual unit shutdown, the time to be in HOT STANDBY is 12 hours. This is to allow the orderly shutdown of one unit at a time and NOT jeopardize the stability of the electrical grid by imposing a simultaneous dual unit shutdown. Without offsite power a consecutive shutdown is used because a unit without its associated transformer must perform a natural circulation cooldown. By completely shutting down one unit before starting shutdown of the second unit, a dual unit natural circulation cooldown is avoided. This change is acceptable because the CTS Actions are the same as the ITS Actions. This change is necessary due to the format of ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

<u>MORE RESTRICTIVE CHANGES</u>

M01 CTS ACTION c.3 states that with one startup transformer and one of the required EDGs inoperable, to restore one of the inoperable sources to OPERABLE status in accordance with ACTIONS a and b, as appropriate; ACTION a is the appropriate Action to restore an inoperable startup transformer. CTS ACTION a provides compensatory actions (reduce thermal power of the associated unit to ≤ 30% Rated Thermal Power within 24 hours) to allow continued operation for both units for up to 30 days. If the compensatory actions allowed by ACTION a are not taken, the Completion Time associated with restoring the inoperable startup transformer for the associated unit to OPERABLE status is 72 hours. ITS ACTION G.1 requires that with one offsite circuit inoperable and one required EDG inoperable, to restore the inoperable offsite circuit (i.e., startup transformer) to OPERABLE status within 72 hours. This changes the CTS by requiring the inoperable offsite circuit to be restored to an OPERABLE status within 72 hours excluding the compensatory actions included in CTS ACTION a that would allow for a longer Completion Time.

The purpose of CTS ACTION c is to establish remedial measures that must be taken within a specified Completion Time with one startup transformer and one of the required EDGs inoperable. CTS ACTION c.3 requires the restoration of these inoperable AC sources in accordance with either ACTIONs a or b. ACTION a allows a minimum of 72 hours to restore a startup transformer and allows for a longer period if other compensatory actions are taken such as reducing power. This change is acceptable because it allows no more than the minimum Completion Time allowed by CTS.

M02 CTS 4.8.1.1.2.a.5 requires each EDG to be synchronized, loaded, and operated for at least 60 minutes. ITS SR 3.8.1.2 requires the same test; however, an additional Note has been added that places a restriction on the test. ITS SR 3.8.1.3 Note 3 modifies the CTS requirements by stating that this Surveillance shall be conducted on only one EDG at a time. This changes the CTS by adding a restriction when performing this test.

The purpose of CTS 4.8.1.1.2.a.5 is to ensure the EDG can supply the emergency loads. The added requirement to perform the SR on only one EDG at a time is acceptable because common cause failures that might result from offsite circuit or grid perturbations are avoided. In addition, CTS 4.8.1.1.2.a.5 is normally conducted on one EDG at a time. This change is designated as more restrictive because an explicit restriction is added to the EDG load test

M03 CTS 4.8.1.1.2.a.5 requires each EDG to be synchronized, loaded, and operated for at least 60 minutes. ITS SR 3.8.1.2 requires the same test; however, an additional Note has been added that places a restriction on the test. ITS SR 3.8.1.3 Note 4 modifies the CTS requirements by stating that the SR shall be preceded by and immediately follow, without a shutdown of the EDG, a successful performance of ITS SR 3.8.1.6 (timed start of the EDG). This changes the CTS by adding a restriction when performing this test.

The purpose of CTS 4.8.1.1.2.a.5 is to ensure the EDG can supply the emergency loads. This change is acceptable because it eliminates an EDG start, which reduces mechanical stress and wear on the EDG. In addition, EDG loading during performance of CTS 4.8.1.1.2.a.5 is usually conducted without shut down after a successful start during performance of CTS 4.8.1.1.2.a.4. This change is designated as more restrictive because an explicit restriction is added to the EDG load test.

M04 CTS 4.8.1.1.2.g.2 requires the testing of each EDG with a load rejection greater than or equal to 392 kW. CTS 4.8.1.1.2.g.3 requires the testing of each EDG with a load rejection of 2500 kW. CTS 4.8.1.1.2.g.7 requires verifying the diesel generator operates for at least 24 hours under specific loaded conditions. These

Surveillances do not specify that the testing be performed at a specific power factor. ITS SR 3.8.1.8 requires the verification that each EDG can reject a load equal to or greater than its associated single largest post-accident load. ITS SR 3.8.1.9 requires the verification that each EDG can reject a load of ≥ 2500 kW (Unit 3), 2874 kW (Unit 4). ITS SR 3.8.1.13 requires verifying each EDG operates for ≥ 24 hours within specified load requirements. These ITS SRs are modified by a Note specifying a power factor limitation if the EDG is synchronized with offsite power. The Note is Note 2 for ITS SRs 3.8.1.8, 3.8.1.9, and SR 3.8.1.13. These Notes state that if the Surveillance is performed with the EDG synchronized with offsite power, it shall be performed at a power factor less than or equal to the power factor of the associated single largest post-accident load or less than or equal to that determined by the diesel loading analysis. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. This changes the CTS requirement by specifying a power factor if the testing is conducted when synchronized with offsite power.

The addition of this Note is acceptable because the testing should be conducted as close as possible to the conditions that would be experienced by an EDG following an accident. Loading the EDG solely with the inductive characteristics of a large motor will create a power factor less than unity. The design of the EDG is set for full power operation with a power factor of ≥ 0.8. Therefore, testing of the EDG for a loss of the single largest load and at full load is acceptable with a power factor specified. This change is designated as more restrictive because the testing required by the CTS does not currently contain these limitations.

M05 CTS 4.8.1.1.2.g.5, the Engineered Safety Feature (ESF) actuation test (without a loss of power), requires the EDG to start within 15 seconds and operate on standby for greater than or equal to 5 minutes maintaining frequency and voltage within specifications. ITS SR 3.8.1.11 requires the verification that each EDG auto-start from standby condition and; d) permanently connected loads remain energized from the offsite power system; and e) emergency loads are auto-connected through the time delay relays, where applicable, from the offsite power system. This changes the CTS by adding additional performance requirements for the ESF actuation test (without a loss of power).

The purpose of the CTS 4.8.1.1.2.g.5 is to test the performance of each EDG when an ESF actuation test (without a loss of power) signal is simulated. The proposed change adds an additional requirement that verifies the appropriate loads are connected to the offsite circuit. The change is acceptable because the acceptance criteria are consistent with the design requirements of the EDGs and with other similar SRs where the EDG starts and ties to the emergency buses. This change is designated as more restrictive because additional acceptance criteria have been added to the CTS.

<u>RELOCATED SPECIFICATIONS</u>

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.1.1.a requires two startup transformers and the associated circuits to be OPERABLE. CTS Actions and SRs identify 1) startup transformers and/or the/its associated circuits, and 2) startup transformer(s). ITS LCO 3.8.1 requires two qualified circuits between the offsite network and the onsite Class 1E AC Electrical Distribution System, and ITS Actions and SRs label these circuits offsite circuits. This changes the CTS by moving the details that the offsite circuits are "independent" or "physically independent," and that the offsite circuits contain startup transformers and associated circuits from the CTS to the Technical Specification Bases.

The removal of these details related to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement for OPERABLE offsite sources. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change, because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.1.1.b requires three "separate and independent" EDG sets to be OPERABLE. ITS LCO 3.8.1 requires three EDGs capable of supplying the onsite Class 1E AC Electrical Distribution System. This changes the CTS by moving the details that the EDGs are "separate and independent," from the CTS to the Bases.

The removal of these details related to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement for OPERABLE EDGs. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change, because information relating to system design is being removed from the Technical Specifications

LA03 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS ACTION b.2 and ACTION c.2 state, in part, that if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, to demonstrate the OPERABILITY of the remaining required EDGs by performing SR 4.8.1.1.2.a.4 within 24 hours. In addition, CTS ACTION c.2 states, in part, to demonstrate the OPERABILITY of the remaining required EDGs by performing SR 4.8.1.1.2.a.4 within 8 hours unless the EDGs are already operating. ITS Required Action E.3.2 states to determine OPERABLE EDG(s) is not inoperable due to common cause failure. This changes the CTS by removing the details of what is not a potential common mode failure.

The removal of these details for performing actions from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirement to ensure the absence of any potential common mode failure for the remaining EDGs is determined. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA04 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.8.1.1.2.a.4) states, in part, that the EDG shall be started for this test by using one of the following signals: a) Manual, or b) Simulated loss-of-offsite power by itself, or c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or d) An ESF Actuation test signal by itself. ITS SR 3.8.1.6 does not include this information associated with the specific test signal that must be used to start this test. This changes the CTS by removing the details of the specific test signal that must be used to start this test.

The removal of these details for performing actions from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA05 *(Type 1 - Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.a.6 requires the verification that each EDG is aligned to provide standby power to the associated emergency buses. ITS 3.8.1 SRs do not contain this requirement. This changes the CTS by moving the detail that each EDG is aligned to provide standby power to the associated emergency buses from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still requires the EDGs to be OPERABLE. An OPERABLE EDG must be capable of providing power to the associated emergency bus as indicated in the Bases. The details of what an OPERABLE EDG must be capable of performing do not need to appear in the Specification for the requirement to apply. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA06 (*Type 1 – Removing Details of System Design and System Description, Including Design Limits*) CTS 4.8.1.1.2.g.2 requires verification of each EDG's capability to reject a load of greater than or equal to 392 kW while maintaining voltage and frequency within specified ranges. ITS SR 3.8.1.8 requires a similar verification but does not specify the value of the single largest post-accident load to reject. This changes the CTS by moving the detail of the single largest load to the ITS Bases.

The removal of these details related to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement to verify that each EDG can maintain voltage and frequency within specified ranges upon rejection of the single largest post-accident load. The removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA07 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAP, CLRT Program, IST Program, ISI Program, or Surveillance Frequency Control Program)* CTS 4.8.1.1.2.g states that each EDG shall be demonstrated OPERABLE by verifying that the fuel transfer pump transfers fuel from the fuel storage tank (Unit 3), fuel storage tanks (Unit 4) to the day tanks of each diesel associated with the unit via the installed cross-connection lines. ITS 3.8.1 does not include this ST. This changes the CTS by the removal of this SR and placing it in the Technical Requirements Manual (TRM).

The removal of requirement to verify that the opposite trains EDG fuel transfer pump has the ability to supply the EDG fuel oil day tanks from the Technical Specifications is acceptable because this test is not necessary to be included in the Technical Specifications in order to demonstrate OPERABILITY of an EDG. The ITS retains the requirement to ensure fuel oil can be transferred from the fuel oil storage tank(s) to the EDGs by the use of its train specific fuel oil transfer pump. Also, this change is acceptable because these details will be adequately controlled in the TRM. Changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because a surveillance requirement is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS ACTIONs a.3.b, a.4, a.5, b.3, d.1, e.2, and f, in part, require that if the associated Action and Completion Time are not met to be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; or in at least HOT STANDBY within the next 12 hours and in HOT SHUTDOWN within the following 6 hours; or in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. ITS ACTION J requires that with the Required Action and associated Completion Time of Condition A, B, C, D, E, F, G, or H not met to be in MODE 3 in 6 hours and MODE 4 in 12 hours. This changes the CTS by requiring a less restrictive end state in the required actions, MODE 4 (HOT SHUTDOWN) instead of MODE 5 (COLD SHUTDOWN).

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and EDGs. Once these limits to operation are exceeded, ACTION J is entered to provide a reasonable time to place the unit is a safe condition. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification Limiting Condition for Operation (LCO) is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources and the ability to remove decay heat such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven auxiliary feedwater (AFW) pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific TS conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 TS end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003), noticed for availability by the NRC in the Federal Register (77 FR 27814) on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated TSTF-432-A Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS ACTION b.2 states, in part, that with one of the required EDGs inoperable and testing of remaining required EDGs is required to determine any potential common mode failure for the remaining EDGs, this testing must be performed regardless of when the inoperable EDG is restored to OPERABILITY. ITS ACTIONn E requires a determination that the OPERABLE EDGs are not inoperable due to a common cause failure or similarly performance of a test; however, this test is not required to be performed when the inoperable EDG is restored to OPERABILITY within 24 hours. This changes the CTS by not requiring a CTS Action to be performed.

The purpose of CTS ACTION b.2 is to provide assurance that a loss of offsite power, during the period that a EDG is inoperable, does not result in a complete loss of safety function of critical systems while providing an allowance to avoid unnecessary testing of OPERABLE EDG(s). This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a Design Basis Accident (DBA) occurring during the repair period. CTS requires that if testing of remaining required diesel generators is required to determine any potential common mode failure for the remaining EDGs, this testing must be performed regardless of when the inoperable EDG is restored to OPERABILITY. ITS does not include this requirement but relies on the corrective action program to implement an investigation into the cause(s) of the EDG inoperability including any common cause evaluations. If testing of the OPERABLE EDGs is required to ensure the cause of the inoperable EDG does not render the remaining EDGs inoperable, the corrective action program will direct the test's performance. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 *(Category 3 - Relaxation of Completion Time)* CTS 3.8.1.1 ACTION c.2 specifies the compensatory actions for one inoperable startup transformer and one inoperable EDG. The Actions includes a requirement to demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing SR 4.8.1.1.2.a.4 within 8 hours. ITS 3.8.1 Required Action E.3.2 allows 24 hours to perform a similar check on the remaining OPERABLE EDGs. This changes the CTS by extending the time to perform this check from 8 hours to 24 hours.

The purpose of the CTS ACTION c.2 requirement to perform CTS 4.8.1.1.2.a.4 is to ensure that the other EDGs are not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). This change is acceptable because the proposed 24-hour time limit to perform CTS 4.8.1.1.2.a.4 when equipment is inoperable is consistent with Generic Letter 84-15,"Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," and has already been approved by the NRC. CTS 3.8.1.1 ACTION b.2 includes a similar requirement to perform CTS 4.8.1.1.2.a.4 when only an EDG is inoperable but allows 24 hours to perform the verification. When both an offsite circuit and an EDG are inoperable, the AC Sources are in a more degraded state. The focus of the operations personnel should be in restoring the inoperable AC Sources, not in attempting to perform a routine Surveillance in a shorter amount of time. The proposed 24-hour time limit is considered a reasonable time to complete the EDG start tests on two EDGs. In addition, the change is considered acceptable since the vast majority of EDG start tests demonstrate that the EDG is OPERABLE. This change is designated as less restrictive because more time will be allowed to complete a Required Action in the ITS than is allowed in the CTS.

L04 *(Category 3 – Relaxation of Completion Time)* CTS ACTION d.1 states, in part, that with one EDG inoperable, within 2 hours verify all required systems, subsystems, trains, components, and devices (except safety injection pumps) that depend on the remaining required OPERABLE EDGs as a source of emergency power are also OPERABLE. ITS Required Action E.3 states to declare required feature(s) supported by the inoperable EDG inoperable when its required redundant feature(s) is inoperable within 4 hours from discovery of Condition E concurrent with inoperability of redundant required feature(s). This changes the CTS by allowing two additional hours to restore inoperable AC sources prior to declaring the associated equipment inoperable.

The purpose of CTS ACTION d.1 is to ensure adequate power is available to required equipment so that the equipment can perform its safety function(s) during DBAs and transients. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. This change allows more time to restore inoperable equipment when required AC Sources are inoperable concurrent with inoperabilities of redundant required features. By declaring the affected supported equipment inoperable, and as a result, taking the Technical Specification ACTIONS of the affected supported equipment, unit operation is maintained within the bounds of the Technical Specifications and approved ACTIONS. Since the AC Sources support the OPERABILITY of the affected equipment, it is appropriate that the proper action, in this condition, would be to declare the affected supported equipment inoperable. However, CTS ACTION d.1 is overly restrictive, in that if the associated supported equipment were inoperable for other reasons and the redundant equipment was also inoperable, a restoration time is sometimes provided in other CTS sections. The 4-hour Completion Time with one EDG inoperable takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature and is considered to be less of a risk than subjecting the unit to transients associated with shutdown. This change is designated as less restrictive because additional time is allowed to restore equipment to OPERABLE status.

L05 *(Category 4 – Relaxation of Required Action)* CTS ACTION e.2 states that with two of the above required startup transformers or the associated circuits inoperable to restore at least one of the inoperable startup transformers to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours* and in COLD SHUTDOWN within the following 30 hours. The footnote associated with the asterisk following "6 hours" states that if the opposite unit is shutdown first, this time can be extended to 42 hours, thus changing the time required to be in HOT STANDBY from 6 hours to 42 hours and the time to be in COLD SHUTDOWN from 36 hours to 72 hours. ITS ACTION L reduces the 42-hour CTS extension to 18 hours and the final end state to MODE 4, changing the time required to be in HOT STANDBY (MODE 3) from 6 hours to 18 hours and the time to be in COLD SHUTDOWN from 36 hours to MODE 4 in 24 hours. In addition, the reference to the opposite unit is being changed to the second unit. This changes the CTS by requiring a less restrictive end state in the required actions, MODE 4 (HOT SHUTDOWN) instead of MODE 5 (COLD SHUTDOWN).

The purpose of CTS 3.8.1.1 ACTION e.2 is to provide the appropriate compensatory actions for two inoperable offsite circuits. CTS 3.8.1.1 ACTION e.2 provides 24 hours to restore one startup transformer to OPERABLE status or commence a reactor shutdown to be in at least HOT STANDBY within the next 6* hours and COLD SHUTDOWN within the following 30 hours.

CTS 3.8.1.1.e.2, Footnote * states that if the opposite unit is shutdown first, this time can be extended to 42 hours. ITS is changing the reference to "opposite unit" to "second unit" because with two inoperable startup transformers there is no opposite unit, or both are opposite units. Changing the reference is acceptable because it reflects the intent of the Footnote as discussed in PTN License Amendment 138/133 (ML013380031). In the CTS Bases, included with the approved License Amendment, it states, "With both startup transformers inoperable, the unit(s) are required to be shutdown consecutively, after 24 hours. A consecutive shutdown is used because a unit without its associated transformer must perform a natural circulation cooldown. By placing one unit in COLD SHUTDOWN before starting shutdown of the second unit, a dual unit natural circulation cooldown is avoided." Thus, the first unit to be shutdown would need to be in COLD SHUTDOWN within 36 hours (6 hours to HOT STANDBY plus 30 hours to COLD SHUTDOWN). Following shut down of the first unit the second unit would need to be in HOT STANDBY in 42 hours (6 hours for the first unit to reach HOT STANDBY plus 30 hours for the first unit to reach COLD SHUTDOWN plus 6 hours for the second unit to reach HOT STANDBY). Therefore, changing the "opposite unit" reference to the second unit is acceptable.

ITS Required Action F.2 provides a similar 24-hour restoration time when two offsite circuits are inoperable to restore one offsite circuit to OPERABLE status. If the Required Action and Completion Time requirements of ITS Required Action F.2 are not met, ACTION J is entered requiring the units to be in MODE 3 (HOT STANDBY) in 6 hours and MODE 4 (HOT SHUTDOWN) in 12 hours (note the change in end state from COLD SHUTDOWN to HOT SHUTDOWN is discussed in DOC L01). Also, if the Required Actions and associated Completion Times of ACTION F are not met, ACTION L is entered. Because both units would be entering ACTION J (requiring both units to be in MODE 3 within 6 hours) a Note is added stating that Condition J only applies to one Unit when both Units are required to be shut down. Similarly, a Note is added to ACTION L stating that only one Unit is allowed to enter Condition L during dual unit required shutdown. This change is acceptable because the Required Actions and associated Completion Times are consistent with current requirements under the specified Condition. Thus, the first unit to be shutdown would need to be in HOT SHUTDOWN within 12 hours (6 hours to HOT STANDBY plus 6 hours to HOT SHUTDOWN). Following shut down of the first unit the second unit would need to be in HOT STANDBY in 18 hours (6 hours for the first unit to reach HOT STANDBY plus 6 hours for the first unit to reach HOT SHUTDOWN plus 6 hours for second unit to reach HOT STANDBY). This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L06 *(Category 10 - Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.1.b contains a requirement to manually transfer unit power supply from the auxiliary transformer to the startup transformer "while shutting down." This test has been incorporated in ITS SR 3.8.1.7. ITS SR 3.8.1.7 includes a Note which states that the Surveillance shall be performed while shutting down. The Note also states that the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. The Notes further state that credit may be taken for unplanned events that satisfy the SR. This changes the CTS by allowing the Surveillance to be performed in the operating MODES when the unit is not shutting down as long as it is to reestablish OPERABILITY (and the associated assessment is performed), or if it is an unplanned event that satisfies the requirements of the SR.

The purpose of CTS 4.8.1.1.1.b is to confirm the OPERABILITY of the offsite circuits. This change is acceptable because the proposed Surveillance Frequency provides an acceptable level of equipment reliability. The proposed Surveillance does not limit the performance of this SR to only while shutting down. It allows the unit to perform the Surveillances to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced and it allows crediting an unplanned event for satisfying the Surveillances, provided the necessary data is obtained. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," allowing this control is consistent with most of the other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because Surveillances may be performed at plant conditions other than while shutting down.

L07 *(Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.c requires the removal of accumulated water from the day tank and skid-mounted fuel tanks (Unit 4-day tank only) in accordance with the Surveillance Frequency Control Program (SFCP) "and after each operation of the diesel where the period of operation was greater than or equal to 1 hour." ITS SR 3.8.1.4, which requires the same Surveillance to be performed, does not include the conditional Frequency. This changes the CTS by deleting the requirement to check for and remove accumulated water after each occasion when the EDG is operated for an hour or more.

The purpose of CTS 4.8.1.1.2.c is to provide a degree of assurance that the day tanks and Unit 3 skid mounted tanks are free of accumulated water. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Water condensation within the fuel oil day tanks or Unit 3 skid mounted tanks is a time dependent process, not a process dependent on the transfer of fuel oil during EDG operation. Because it is the expectation that the EDG will not be operated and that the fuel oil storage tanks are also periodically checked for water, no increased Frequency is necessary. This change is designated as less restrictive because the explicit requirement to remove accumulated water in the day tank and Unit 3 skid mounted tank after an EDG run of greater than 1 hour has been deleted.

L08 *(Category 8 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.2.g contains requirements to perform various tests "during shutdown." These tests have been incorporated into ITS SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.15, SR 3.8.1.16, SR 3.8.1.17, and SR 3.8.1.18 in Notes. ITS SR 3.8.1.10, SR 3.8.1.15, SR 3.8.1.16, SR 3.8.1.17, and SR 3.8.1.18 Notes state that the Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. ITS SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.11, and SR 3.8.1.12 Notes state that the Surveillance shall not normally be performed in MODE 1 or 2. The Notes also state that portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced, further stating that credit may be taken for unplanned events that satisfy this SR. Additionally, a clarifying statement from CTS is added to the ITS Notes stating that these MODE restrictions are applicable only to the two EDGs associated with the unit. This changes the CTS by replacing the requirement to perform the Surveillances during shutdown (MODES 4, 5, 6, of Defueled) with a Note stating when the Surveillances are not normally performed (either MODES 1 or 2; or MODES 1, 2, 3, or 4) and allowing the test to be performed in these MODES as long as the associated assessment is performed or provided that an unplanned event satisfies the requirements of the Surveillance.

The purpose of CTS 4.8.1.1.2.g is to confirm the OPERABILITY of each EDG. This change is acceptable, because the Surveillances, as modified by the revised Note, have been evaluated to ensure they provide an acceptable level of equipment reliability. The proposed Surveillances do not include the restriction that limits performance of the SR only when shutdown. It allows the unit to perform the Surveillances to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced and it allows the unit to credit an unplanned event for satisfying the Surveillances, provided the necessary data is obtained. Furthermore, the proposed Surveillance Note still restricts planned performance of the Surveillances to MODES other than MODE 1 or 2, or MODE 1, 2, 3, or 4, as applicable. The control of the unit conditions appropriate to perform the tests is an issue for procedures and scheduling and has been determined by the NRC Staff to be unnecessary as a

Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with most of the other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillances may be performed during plant conditions other than shutdown.

L09 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.g.2) requires verification of EDG performance following a "simulated" loss of offsite power. CTS 4.8.1.1.2.g.5) requires verification of EDG performance following an ESF actuation "test" signal. CTS 4.8.1.1.2.g.6)a, b, and c require verification of EDG performance following a "simulated" loss of offsite power in conjunction with an ESF actuation "test" signal. CTS 4.8.1.1.2.g.10 requires verification of EDG test mode override following a simulated Safety Injection signal. ITS SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.16, and SR 3.8.1.18 specify that the signal may be either an "actual or simulated" signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.8.1.1.2.g.2, CTS 4.8.1.1.2.g.5, and CTS 4.8.1.1.2.d.6 is to ensure that the AC Sources operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its specified safety functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L10 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.g.7) requires verification that each EDG can operate for at least 24 hours, with loading at the 2-hour rating during the first 2 hours and at a load equivalent of the continuous duty rating during the remaining hours of the test. The CTS further requires that the generator voltage and frequency shall be 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds after the start signal and that the steady-state generator voltage and frequency shall be maintained within these limits during this test. ITS SR 3.8.1.13 requires a similar test; however, it does not specify that the generator voltage and frequency shall be 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds after the start signal. This changes the CTS by removing the timed voltage and frequency limits for the initial start of the EDG.

The purpose of CTS 4.8.1.1.2.g.7 is to verify the capability of each EDG to run continuously at full load for at least 24 hours. EDG operation with voltage and frequency within the specified limits will continue to be verified during performance of ITS SR 3.8.1.6, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.14, SR 3.8.1.18, and SR 3.8.1.19. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its specified safety functions. The Surveillance will continue to verify that the EDG is capable of running continuously at full load for an interval of not less than 24 hours, ≥ 2 hours of which is at the 2-hour rating, consistent with the loading position of Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units used as

Onsite Electric Power Systems at Nuclear Power Plants," Regulatory Position C.2.a.(3). This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L11 (*Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria*) CTS 4.8.1.1.2.g.7 states, in part, that within 5 minutes after completing the 24hour test to verify the EDG starts and accelerates to reach a generator voltage and frequency of 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds after the start signal.** Footnote ** modifies this requirement by stating that if verification of the EDG's ability to restart and accelerate to a generator voltage and frequency of 3950-4350 volts and 60 ± 0.6 Hz within 15 seconds following the 24-hour operation test of Specification 4.8.1.1.2.g.7 is not satisfactorily completed, it is not necessary to repeat the 24-hour test. Instead, the EDG may be operated between 2300-2500 kW Unit 3, (2650-2850 kW Unit 4) for 2 hours or until operating temperature has stabilized (whichever is greater). ITS SR 3.8.1.14 similarly requires verification that each EDG starts and achieves within 15 seconds voltage ≥ 3950 volts and frequency ≥ 59.4 Hz and a steady state voltage ≥ 3950 volts and ≤ 4350 volts with a frequency ≥ 59.4 Hz and ≤ 60.6. This SR is modified by a Note stating that this Surveillance shall be performed within 5 minutes of shutting down the EDG after the EDG has operated for ≥ 2 hours loaded. This changes the CTS by not requiring the performance of the 24-hour test but only a 2-hour loaded pre-test EDG operation prior to verifying the EDG's ability to start within 15 seconds.

The purpose of CTS 4.8.1.1.2.g.7) is to demonstrates that the diesel engine can restart from a hot condition, such as after shutdown from normal Surveillances, and achieve the required voltage and frequency within 15 seconds. This change is acceptable because it has been determined that the relaxed SR acceptance criteria of after a 24-hour loaded operation is not necessary for verification that the equipment used to meet the LCO can perform its required functions. Operating the EDG for 2 hours loaded provides adequate warm up period to determine if the EDG is capable for restating. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L12 (*Category 5 – Deletion of Surveillance Requirement*) CTS 4.8.1.1.2.g.8 requires verification that the auto-connected loads to each EDG do not exceed 2500 kW (Unit 3), 2874 kW (Unit 4). ITS 3.8.1 does not require the verification of this loading limit to ensure OPERABILITY of the EDGs. This changes the CTS by deleting the SR.

This change is acceptable because the deleted SR is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its specified safety function. Each EDG will continue to be tested in a manner to ensure the safety analyses assumption will be met. Changes to the auto-connected loads will be controlled and evaluated by the design change control process to ensure the EDG is not overloaded. This change is designated as less restrictive because a Surveillance which is required in the CTS will not be required in the ITS.

L13 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.1.1.2.g.13 requires verifying that the EDG lockout relay prevents the EDG from starting. ITS 3.8.1 Surveillances do not include this SR. This changes the CTS by deleting the SR to verify that the EDG lockout relay prevents the EDG from starting.

The purpose of CTS 4.8.1.1.2.g.13) is to provide greater confidence that the EDGs will operate, as designed. This change is acceptable because the deleted SR is not necessary to verify that the EDGs used to meet the LCO can perform the specified safety functions. The EDG surveillances included in ITS 3.8.1 ensures the EDGs will continue to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its specified safety function. The function of the EDGs is that with any credible single failure, the EDGs are capable of assuring a safe shut down of both units with a loss of offsite power concurrent with Maximum Hypothetical Accident (MHA) conditions in one unit. The purpose of the lockout relay is to prevent the EDG from starting or shutting the EDG down to prevent or minimize the damage the EDG. Because this surveillance is to minimize the damage to the EDG and not to ensure the EDG can perform its specified safety function, removal of this SR is acceptable. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L14 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.1.1.2.h requires verification that the EDGs achieve the specified voltage and frequency within 15 seconds when started simultaneously in accordance with the SFCP or after any modifications which could affect EDG interdependence. ITS SR 3.8.1.19 does not include the requirement to test simultaneous start of the EDGs after any modifications which could affect EDG interdependence. This changes the CTS by deleting the requirement to simultaneously start the EDGs after any modifications which could affect EDG interdependence.

This change is acceptable because the deleted SR is not necessary to verify that the equipment used to meet the LCO is consistent with the safety analyses. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the assumptions in the safety analyses are protected. Following repair, maintenance, modification, or replacement of a component that may affect OPERABILITY, post maintenance testing is required to demonstrate OPERABILITY of the system or component. This is described in the Bases of ITS SR 3.0.1 and required under SR 3.0.1. The OPERABILITY requirements of the EDGs are described in the Bases for Specification 3.8.1. In addition, the requirements of 10 CFR 50, Appendix B, Section XI (Test Control) provide adequate controls for test programs to ensure that testing incorporates applicable acceptance criteria. Compliance with 10 CFR 50 is required under the unit's operating license. As a result, post maintenance testing will continue to be performed and an explicit requirement in the Technical Specifications is not necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

3.8.1.1 LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

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

3.8.1.1.b b. ~~Two~~ Three emergency diesel generators (~~DGs~~ EDGs) capable of supplying the onsite Class 1E power distribution subsystem(s), and 1

~~[~~c. Automatic load sequencers for Train A and Train B.~~]~~ 2

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

ACTIONS

Actions Note 1.
---NOTES---
LCO 3.0.4.b is not applicable to EDGs.
INSERT 1
-- 1

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action a. Action a.1. A. One ~~[required]~~ offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for ~~[required]~~ OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter (2)
	AND	
Action a.2.	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	~~AND~~	1

1

INSERT 1

3.8.1.1.b* 2. Whenever one or more of the four EDGs is inoperable, ensure compliance with the EDG requirements specified in LCOs 3.5.2 and 3.8.4.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
INSERT 2	~~A.3 Restore [required] offsite circuit to OPERABLE status.~~	~~72 hours~~ ~~[OR~~ ~~In accordance with the Risk Informed Completion Time Program]~~ 1
Action b. Action b.1, Action f ~~B~~ E. One ~~[required]~~ DG inoperable. E	~~B~~ E.1 Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit(s).	1 hour AND Once per 8 hours thereafter 3 2 1
Action d.2	INSERT 3 AND	
Action d.1	~~B. 2~~ E.3 Declare required feature(s) supported by the inoperable E DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition ~~B~~ E concurrent with inoperability of redundant required feature(s) 2 1 2
	AND	
Action b.2, Action c.2	~~B.3~~ E.4.1 Determine OPERABLE E DG(s) is not inoperable due to common cause failure.	~~[~~24~~]~~ hours 3 2 1
	OR	
Action b.2, Action c.2	~~B.3~~ E.4.2 INSERT 4 Perform SR 3.8.1.~~2~~ 6 for OPERABLE E DG(s).	~~[~~24~~]~~ hours 3 2 1
	AND	

1 **INSERT 2**

Action a.3	B. ------------NOTE------------ Only applicable for associated Unit when in MODE 1. -------------------------------- One required associated offsite circuit inoperable.	B.1.1 Reduce THERMAL POWER to ≤ 30% RATED THERMAL POWER AND B.1.2 Restore the required offsite circuit to OPERABLE status. OR B.2 Restore the required offsite circuit to OPERABLE status.	24 hours 30 days 48 hours OR In accordance with the Risk Informed Completion Time Program
Action a.5	C. ------------NOTE------------ Only applicable for associated Unit when in MODES 2, 3, or 4. -------------------------------- One required associated offsite circuit inoperable.	C.1 ----------------NOTE---------------- This Required Action applies to both units simultaneously. -------------------------------------- Restore the required offsite circuit to OPERABLE status.	 24 hours OR In accordance with the Risk Informed Completion Time Program
Action a.4	D. ------------NOTE------------ Only applicable for opposite Unit. -------------------------------- One required opposite unit offsite circuit inoperable	D.1 Restore the required offsite circuit to OPERABLE status.	30 days

1

INSERT 3

	E.2 ----------------NOTE---------------- This Required Action applies to both units simultaneously. -- Verify two or more safety injection pumps are OPERABLE and capable of being powered from their associated OPERABLE EDGs. AND	2 hours

Action d.2

INSERT 4

------------NOTE------------
Required Action E.4.2 shall be completed whenever this Required Action is entered.

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action b.3, Action f.		~~B.4~~ E.5	Restore ~~[~~required~~]~~ E DG to OPERABLE status.	~~72 hours~~ 14 days ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	3 2 1 2 2
Action e. Action e.1	~~C~~ F. Two ~~[required]~~ offsite circuits inoperable.	~~C~~ F.1	Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ F concurrent with inoperability of redundant required features	3 2 2
		AND			
Action e.2		~~C~~ F.2	INSERT 5 Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	3 2 2 1 2
Action c.	~~D~~ G. One ~~[required]~~ offsite circuit inoperable. AND One ~~[~~required~~]~~ E DG inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," G when Condition ~~D~~ is entered with no AC power source to any train. ---			3 2 3 2 1
		~~D~~ G.1	Restore ~~[required]~~ offsite circuit to OPERABLE status.	~~12~~ 72 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	3 1 1
		OR			

1 **INSERT 5**

Action e.2

----------------NOTE----------------
This Required Action applies to both units simultaneously.

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action C.3		~~D~~ G.2 Restore [~~required~~] E DG to OPERABLE status.	~~12~~ 72 hours [OR In accordance with the Risk Informed Completion Time Program]	1
Action f	~~E~~ H. Two [required] E DGs inoperable.	~~E.~~ H.1 Restore one [required] E DG to OPERABLE status.	2 hours	3 2 1
	~~-----REVIEWER'S NOTE----- This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event.~~ ~~-----------------------------------~~	~~F.1~~ I Restore ~~[required]~~ [automatic load sequencer] to OPERABLE status.	~~[12]~~ 72 hours [OR In accordance with the Risk Informed Completion Time Program]]	3 2 4
DOC A06	~~F.~~ I. [One ~~[required]~~ [automatic load sequencer] inoperable.			3 2
Action a.3.b), Action a.4, Action a.5, Action b.3, Action d.1, Action d.2, Action e.2, Action f	~~G~~ J. Required Action and associated Completion Time of Condition A, B, C, D, E, ~~or [F]~~ F, G, H, or I not met. INSERT 6	~~G~~ J.1 Be in MODE 3. AND ~~G~~ J.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours	3 3

INSERT 7

1 **INSERT 6**

Action a.5, Action d.2, Action e.2 Footnote *, DOC A08

------------------NOTE---------------
Condition J only applies to one Unit during a dual Unit shutdown.
----

1 **INSERT 7**

Action a.4, Action d.2 DOC A08

Action e.2 Footnote * DOC A08

K. -----------NOTES------------ 1. Condition K only applies when a dual Unit shutdown is required. 2. Only one Unit can enter Condition K. --------------------------------- Required Action and Associated Completion Time of Condition A, B, C, D, E, G, or H not met.	K.1 Be in MODE 3 AND K.2 ----------------NOTE---------------- LCO 3.0.4.a is not applicable when entering MODE4. -- Be in MODE 4.	12 hours 18 hours
L. -----------NOTES------------ 1. Condition L only applies when a dual Unit shutdown is required. 2. Only one Unit can enter Condition L --------------------------------- Required Action and associated Completion Time of Condition F not met.	L.1 Be in MODE 3 AND L.2 ----------------NOTE---------------- LCO 3.0.4.a is not applicable when entering MODE 4. -- Be in MODE 4.	18 hours 24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC A07 ~~H~~ M. Three or more ~~[~~required~~]~~ AC sources inoperable.	~~H~~ M.1 INSERT 8 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.8.1.1.1a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~
~~SR 3.8.1.2~~	~~NOTES~~ ~~1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading.~~ ~~[2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met.]~~ ~~Verify each DG starts from standby conditions and achieves steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.~~	~~[31 days~~ ~~OR~~ ~~In accordance with the Surveillance Frequency Control Program]~~

3 2

2

2

1

INSERT 8

DOC A07

----------------NOTE----------------
This Required Action applies to both units simultaneously.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.8.1.1.2a.5) 4.8.1.1.2a.4), 4.8.1.1.2a.5)** 4.8.1.1.2a.5)*** DOC M02 DOC M03	SR 3.8.1.~~3~~ 2	-------E-------NOTES------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. E 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~~ 6. INSERT 9 ----------------------------------- Verify each E DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ ~~[4500]~~ 2300 (Unit 3), ≥ 2650 kW and ≤ 2850 kW (Unit 4) kW and ≤ ~~[5000]~~ 2500 kW.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 3 3 3 3 2 2
3.8.1.1.b.1).a) 3.8.1.1.b.2).a) 4.8.1.1.2a.1)	SR 3.8.1.~~4~~ 3	~~Verify each day tank [and engine mounted tank] contains ≥ [220] gal of fuel oil~~. INSERT 10	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 1 2 2

1

INSERT 9

3.8.1.1.b.1)a), 4.8.1.1.2.5)

5. For Unit 3 continue test until automatic transfer of fuel from the day tank to the skid mounted tank is demonstrated, and the cooling system is demonstrated OPERABLE.

1

INSERT 10

3.8.1.1.b.1).a)
3.8.1.1.b.2).a)
4.8.1.1.2.a.1)

Verify the following for each EDG:

a) The combined volume of the day tank and skid tank for each Unit 3 EDG contains ≥ 2000 gallons of fuel oil.

b) Each Unit 4 EDGs day tank contains ≥ 230 gallons of fuel oil.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.8.1.1.2c	SR 3.8.1.~~5~~ 4	Check for and remove accumulated water from each day tank ~~[~~and ~~engine mounted tank]~~ Unit 3 skid-mounted tank.	~~[[31] days~~ 3 ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2
3.8.1.1.b.1)c), 3.8.1.1.b.2)c) 4.8.1.1.2b, 4.8.1.1.2g.11)	SR 3.8.1.~~6~~ 5	INSERT 11 Verify the fuel oil transfer system operates to ~~[~~automatically~~]~~ transfer fuel oil from the storage tank~~[s]~~ to the day tank ~~[and engine mounted tank]~~.	~~[[92] days~~ 1 3 ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2
4.8.1.1.2a.4) 4.8.1.1.2*	SR 3.8.1.~~7~~ 6	---------------------------NOTE--------------------------- All E DG starts may be preceded by an engine prelube period. --- Verify each E DG starts from standby condition and achieves~~:~~ ~~a.~~ In ≤ ~~[10]~~ 15 seconds, voltage ~~≥ [3740] V and frequency ≥ 58.8] Hz and~~ ~~b. Steady state voltage~~ ≥ ~~[3740]~~ 3950 V and ≤ ~~[4580]~~ 4350 V, and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz.	3 ~~[184 days~~ 3 ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 2

1

INSERT 11

---NOTE---

3.8.1.1.b.1)c), Footnote ** Not required to be met for Unit 3 EDGs during use of a temporary Class III fuel storage system as allowed by LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air."

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.1.b DOC L06 SR 3.8.1.~~8~~ 7	------------------------------NOTE------------------------------ ~~[~~ This Surveillance shall ~~not normally~~ be performed ~~in MODE 1 or 2~~ while shutting down. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. --	3 2
	Verify ~~[automatic [and]~~ manual~~]~~ transfer of AC power sources from the ~~normal offsite circuit~~ auxiliary transformer to ~~each alternate [required] offsite circuit~~ the startup transformer.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]]~~ 2 1 2 2

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
4.8.1.1.2g.2) DOC L08 DOC M04	SR 3.8.1.~~9~~ 8 -----------------------------NOTES----------------------------- ~~[~~1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. INSERT 12 2. If performed with the E DG synchronized with offsite power, it shall be performed at a power factor ~~≤ [0.9]~~ less than or equal to the power factor of the single largest post-accident load. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. ~~]~~ INSERT 13 --- Verify each E 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]~~ 66.25 Hz, b. Within ~~[3]~~ 2 seconds following load rejection, the voltage is ≥ ~~[3740]~~ 3950 V and ≤ ~~[4580]~~ 4350 V, and c. Within ~~[3]~~ 2 seconds following load rejection, the frequency is ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 2 3 2 3 2 3 2

1 INSERT 12

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

1 INSERT 13

4.8.1.1.2.g.2)* 3. For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2g.3) SR 3.8.1.~~10~~ 9	-----NOTES----- [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. (DOC L08) INSERT 14 2. If performed with E DG synchronized with offsite power, it shall be performed at a power factor ~~≤ [0.9]~~ less than or equal to that determined by the diesel loading analysis. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.] (DOC M04) INSERT 15 -----	3 2 3 2 2 3
	Verify each E DG does not trip and voltage ~~is maintained ≤ [5000] V during and~~ returns to ≤ 4784 V within 2 seconds following a load rejection of ≥ ~~[4500] kW and ≤ [5000] kW~~ 2500 kW (Unit 3), ≥ 2874 kW (Unit 4).	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program] 3 2 2

1 **INSERT 14**

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

1 **INSERT 15**

4.8.1.1.2.g.2)* 3. For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2g.4) 4.8.1.1.2* SR 3.8.1.~~11~~ 10	-------------E---------------NOTES----------------------------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. (DOC L08) ---------------------------INSERT 16------------------------------ (4.8.1.1.2g) Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, c. E DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ ~~[10]~~ 15 seconds, 2. Energizes auto-connected shutdown loads through [automatic load sequencer], 3. Maintains steady state voltage ≥ ~~[3740]~~ 3950 V and ≤ ~~[4580]~~ 4350 V, 4. Maintains steady state frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz, and 5. Supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program]

3 1 1 2 1 2

1 **INSERT 16**

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2g.5) 4.8.1.1.2* DOC L08 4.8.1.1.2g	SR 3.8.1.~~12~~ 11 -------------------------------NOTES------------------------------- ~~[~~1. All E DG starts may be preceded by prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. -------------------------------INSERT 17------------------------------- Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each E DG auto-starts from standby condition and: a. In ≤ ~~[10]~~ 15 seconds after auto-start and during tests, achieves voltage ≥ ~~[3740]~~ 3950 V and frequency ≥ ~~[58.8]~~ 59.4 Hz, b. Achieves steady state voltage ≥ ~~[3740]~~ 3950 V and ≤ ~~[4580]~~ 4350 V and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz, c. Operates for ≥ 5 minutes,	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~
DOC M05	d. Permanently connected loads remain energized from the offsite power system, and	
DOC M05	e. Emergency loads are energized ~~[~~or auto-connected through the automatic load sequencer~~]~~ from the offsite power system.	

1 **INSERT 17**

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2g.6)c) SR 3. 8.1.~~13~~ 12	------------------------------NOTE------------------------------ ~~[~~ This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ~~]~~ (DOC L08) INSERT 18 --	3 2 1
4.8.1.1.2g	INSERT 19 Verify ~~each DG's noncritical automatic trips are bypassed~~ on ~~[~~actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal~~]~~.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 2 2

1 **INSERT 18**

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

1 **INSERT 19**

4.8.1.1.2.g.6)c) EDG trips made OPERABLE during the test mode of EDG operation are inoperable

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2g.7) 4.8.1.1.2g.7)** SR 3.8.1.~~14~~ 13	------------------------------NOTES---------------------------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. INSERT 20 2. ~~This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.~~ (4.8.1.1.2g.7)#) 3. If performed with E DG synchronized with offsite power, it shall be performed at a power factor ~~≤ [0.9]~~ less than or equal to that determined by the diesel loading analysis. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. (DOC M04) ---	3 1 1 2
4.8.1.1.2g	Verify each E DG operates for ≥ 24 hours: a. For ≥ ~~[~~2~~]~~ hours loaded ~~≥ [5250] kW and ≤ [5500] kW~~ INSERT 21 and b. For the remaining hours of the test loaded ~~≥ [4500] kW and ≤ [5000] kW~~ INSERT 22.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 1 2

1

INSERT 20

4.8.1.1.2.g.7)*

2. For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

INSERT 21

4.8.1.1.2.g.7)

≥ 2550 kW and ≤ 2750 kW (Unit 3), ≥ 2950 kW and ≤ 3150 kW (Unit 4)

1

INSERT 22

4.8.1.1.2.g.7)

≥ 2300 kW and ≤ 2500 kW (Unit 3), ≥ 2650 kW and ≤ 2850 kW (Unit 4)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2g.7) DOC L11 4.8.1.1.2g.7)** 4.8.1.1.2* 4.8.1.1.2g	SR 3.8.1.~~15~~ 14 -----------------------------NOTES----------------------------- 1. This Surveillance shall be performed within 5 minutes of shutting down the E DG after the E DG has operated ≥ [2] hours loaded ~~≥ [4500] kW and ≤ [5000] kW~~ INSERT 23. Momentary transients outside of load range do not invalidate this ~~test~~ pre-test requirement. 2. All E DG starts may be preceded by an engine prelube period. --- Verify each E DG starts and achieves: a. In ≤ ~~[10]~~ 15 seconds, voltage ≥ ~~[3740]~~ 3950 V and frequency ≥ ~~[58.8]~~ 59.4 Hz and b. Steady state voltage ≥ ~~[3740]~~ 3950 V, and ≤ ~~[4580]~~ 4350 V and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~
4.8.1.1.2g.9) DOC L08 4.8.1.1.2g	SR 3.8.1.~~16~~ 15 -----------------------------NOTE----------------------------- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. INSERT 24 --- Verify each E DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power, b. Transfers loads to offsite power source, and c. Returns to ready-to-load operation.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~

3 1 2 5 1 2 1 1 1 2 1 2 2

1

INSERT 23

4.8.1.1.2.g.7) ≥ 2300 kW and ≤ 2500 kW (Unit 3), ≥ 2650 kW and ≤ 2850 kW (Unit 4)

1

INSERT 24

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
4.8.1.1.2g.10) DOC L08 4.8.1.1.2g	SR 3.8.1.~~17~~ 16 -----NOTE----- [This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. INSERT 25 ---------- Verify, with a E DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning E DG to ready-to-load operation and b. [Automatically energizing the emergency load from offsite power].	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program]	3 2 1 1 1 2 1 2
4.8.1.1.2g.12) DOC L08 4.8.1.1.2g	SR 3.8.1.~~18~~ 17 -----NOTE----- [This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.] INSERT 26 ---------- Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency ~~[and shutdown]~~ load sequencer.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program]	3 2 3 2 3 2 2

1 **INSERT 25**

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

1 **INSERT 26**

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY	
4.8.1.1.2g.6) a) and b) 4.8.1.1.2*	SR 3.8.1.~~19~~ 18	-----NOTES----- 1. All E DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. INSERT 27		3 1
DOC L08				
4.8.1.1.2g		----------- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, and c. E DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ ~~[10]~~ 15 seconds, 2. Energizes auto-connected emergency loads through load sequencer, 3. Achieves steady state voltage ≥ ~~[3740]~~ 3950 V and ≤ ~~[4580]~~ 4350 V, 4. Achieves steady state frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz, and 5. Supplies permanently connected ~~[~~and auto-connected~~]~~ emergency loads for ≥ 5 minutes.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 2 1 2 2 2

1

INSERT 27

4.8.1.1.2.g Applicable to only the two EDGs associated with the unit.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2h 4.8.1.1.2* SR 3.8.1.~~20~~ 19	------------------------------NOTE------------------------------ All E DG starts may be preceded by an engine prelube period. --- Verify when started simultaneously from standby condition, each required E DG achieves: a. In ≤ ~~[10]~~ 15 seconds, voltage ≥ ~~[3740]~~ 3950 V and frequency ≥ ~~[58.8]~~ 59.4 Hz and b. Steady state voltage ≥ ~~[3744]~~ 3950 V and ≤ ~~[4576]~~ 4350 V, and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ ~~[61.2]~~ 60.6 Hz.	~~[10 years~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~

3 1 1 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. Changes have been made to add or delete Actions, the subsequent Actions and Required Actions have been renumbered to reflect the additions and deletions.

4. ISTS ACTION F Reviewers Note states that this Condition may be deleted if the unit design is such that any sequencer failure will only affect the ability of the associated diesel generator to power its respective safety loads. This is not the design at the Turkey Point Nuclear Generating Station (PTN); therefore, this Condition is retained along with the associated Limiting Condition for Operation (LCO) statement and surveillance requirement.

5. ISTS Surveillance Requirement (SR) 3.8.1.15 includes Note 1 that states, in part, that momentary transients outside of load range do not invalidate this test. This statement refers to the operation also described in the Note. This operation is not a test but a prerequisite for the test, so the wording has been changed to reflect that the pre-test requirements are not invalidated by momentary transients outside the loaded range.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

startup transformers

BASES

BACKGROUND

The unit Class 1E AC Electrical Power Distribution System AC sources consist of the offsite power sources (~~preferred power sources, normal and alternate(s)~~), and the onsite standby power sources (Train A and Train B emergency diesel generators (EDGs) ~~diesel generators (DGs)~~). ~~As required by 10 CFR 50, Appendix A, GDC 17 (Ref. 1), the design of the AC electrical power system provides independence and redundancy to ensure an available source of power to the Engineered Safety Feature (ESF) systems.~~ INSERT 1 1

The onsite Class 1E AC Distribution System is divided into redundant load groups (trains) so that the loss of any one group does not prevent the minimum safety functions from being performed. Each train has connections to one or two ~~preferred~~ offsite power sources and a single E DG. 1

Offsite power is supplied to the unit switchyard(s) from the transmission network by 10 [~~two~~] transmission lines. From the switchyard(s), two electrically and physically separated circuits provide AC power, through [step down ~~station auxiliary~~ transformers], to the 4.16 kV ESF buses. A detailed description of the offsite power network and the circuits to the Class 1E ESF buses is found in the U FSAR, Chapter [8] (Ref. 2). 2 2 1 2

An offsite circuit consists of all breakers, transformers, switches, interrupting devices, cabling, and controls required to transmit power from the offsite transmission network to the onsite Class 1E ESF bus(es).

Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the transformer supplying offsite power to the onsite Class 1E Distribution System. Within [1] minute after the initiating signal is received, all automatic and permanently connected loads needed to recover the unit or maintain it in a safe condition are returned to service via the load sequencer. 2

The onsite standby power source for each 4.16 kV ESF bus is a INSERT 2 dedicated E DG. ~~DGs [11] and [12] are dedicated to ESF buses [11] and [12], respectively~~. A E DG starts automatically on a safety injection (SI) signal (i.e., low pressurizer pressure , ~~or~~ high containment pressure signals INSERT 3) or on an [ESF bus degraded voltage or undervoltage signal] (refer to LCO 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation"). After the E DG has started, it will automatically tie to its respective bus after offsite power is tripped as a consequence of ESF bus undervoltage or degraded voltage, independent of or coincident with an SI signal. The E DGs will also start and operate in the standby mode without tying to the ESF bus on an SI signal alone. Following the trip of offsite power, [a sequencer~~/an undervoltage signal~~] strips nonpermanent 2 1 1 1 2

1 INSERT 1

Turkey Point Units 3 and 4 were designed prior to the implementation of 10 CFR 50, Appendix A, General Design Criteria (GDC) for Nuclear Power Plants, and utilized the criteria of 1967 AEC proposed GDC 39, "Emergency Power for Engineered Safety Features," in the design of the site electric power systems. An evaluation of the site electrical system design was performed in 1982 and concluded that Turkey Point complies with the requirements of GDC 17 as discussed below.

The normal preferred power source is the auxiliary transformers and associated circuits to the Train A and B 4.16 kV buses. The alternate preferred power source is the startup transformers and associated circuits to the Train A and B 4.16 kV buses. The requirements of 10 CFR 50, Appendix A, GDC 17 are met by the onsite electrical distribution system for each unit being supplied by two separate and independent offsite sources. One required circuit for each unit is supplied via the unit's start-up transformer. The other required circuit is supplied by the adjacent unit's start-up transformer to the Train A 4.16 kV bus. Each start-up transformer is connected by separate, independent highlines to separate busses in the switchyard. Each transformer is connected to the unit's onsite distribution system via separate cables and breakers. No single failure can affect both circuits simultaneously or consequentially such that both required circuits are lost.

1 INSERT 2

Two EDGs provide onsite emergency AC power for each unit. EDGs 3A and 3B provide Unit 3 A train, and B train emergency power, respectively. EDGs 4A and 4B provide Unit 4 A train and B train emergency power, respectively.

1 INSERT 3

High Differential Pressure Between the Steam Line Header and any Steam Line, or Steam Line flow—High Coincident with: Steam Generator Pressure—Low or Tavg--Low

BASES

BACKGROUND (continued)

loads from the ESF bus. When the E DG is tied to the ESF bus, loads are 1
then sequentially connected to its respective ESF bus by the automatic
load sequencer. The sequencing logic controls the permissive and
starting signals to motor breakers to prevent overloading the E DG by 1
automatic load application.

In the event of a loss of ~~preferred~~ offsite power, the ESF electrical loads are 1
automatically connected to the E DGs in sufficient time to provide for safe
reactor shutdown and to mitigate the consequences of a Design Basis
Accident (DBA) such as a loss of coolant accident (LOCA).

Certain required unit loads are returned to service in a predetermined
sequence in order to prevent overloading the E DG in the process. Within 1
~~[~~1~~]~~ minute after the initiating signal is received, all loads needed to 2
recover the unit or maintain it in a safe condition are returned to service.

INSERT 4

Ratings for Unit 4 Train A and Train B E DGs satisfy the requirements of 1
Regulatory Guide 1.9 (Ref. 3) with exceptions. The continuous service rating of each E DG
is ~~[7000] kW~~ INSERT 5 with ~~[~~10~~]~~% overload permissible for up to 2 hours in any 2
24 hour period. The ESF loads that are powered from the 4.16 kV ESF
buses are listed in Reference 2.

APPLICABLE SAFETY ANALYSES

The initial conditions of DBA and transient analyses in the U FSAR, 1
Chapter ~~[~~6~~]~~ (Ref. 4) and Chapter ~~[15]~~ 14 (Ref. 5), assume ESF systems are 2
OPERABLE. The AC electrical power sources are designed to provide
sufficient capacity, capability, redundancy, and reliability to ensure the
availability of necessary power to ESF systems so that the fuel, Reactor
Coolant System (RCS), and containment design limits are not exceeded.
These limits are discussed in more detail in the Bases for Section 3.2,
Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS);
and Section 3.6, Containment Systems.

The OPERABILITY of the AC electrical power sources is consistent with
the initial assumptions of the Accident analyses and is based upon
meeting the design basis of the unit. This results in maintaining at least
one train of the onsite or offsite AC sources OPERABLE during Accident
conditions in the event of:

a. An assumed loss of all offsite power ~~or all onsite AC power~~ and 1

b. A worst case single failure.

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

2 **INSERT 4**

EDGs 3A and 3B, previously labeled as A and B, were the two original safety related EDGs which comprised the onsite standby power source and were used to provide all the emergency AC power for both units. As part of the Emergency Power System (EPS) Enhancement Project modifications made during the 1990-1991 Dual Unit Outage, these EDGs were relabeled as 3A and 3B and were realigned to power the Unit 3 loads and some common loads. These EDG were procured prior to Regulatory Guide 1.9 (Ref. 3), however, all the required automatic and manual loads powered by EDGs 3A and 3B are within the continuous rating of these EDGs. Two new EDGs were aligned as the emergency AC power supplies for Unit 4. The EDG 4A supplies power to the Unit 4A power train and the EDG 4B supplies the Unit 4B power train. The selection, design and qualification of EDGs 4A and 4B and their associated auxiliary systems comply with the requirements of this regulatory guide with certain exceptions.

INSERT 5

2500 kW for the Unit 3 EDGs and 2874 kW for the Unit 4 EDGs

BASES

LCO

Two qualified circuits between the offsite transmission network and the onsite Class 1E Electrical Power System and three separate and independent E DGs ~~for each train~~ ensure availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an anticipated operational occurrence (AOO) or a postulated DBA. 1

Qualified offsite circuits are those that are described in the U FSAR and are part of the licensing basis for the unit. 1

~~[~~ In addition, one required automatic load sequencer per train must be OPERABLE. ~~]~~ 2

Each offsite circuit must be capable of providing three phases of AC power, maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses.

INSERT 6

~~[Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. Offsite circuit #2 consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201, powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.~~] 2

INSERT 7

Each E DG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This will be accomplished within ~~[10]~~ 15 seconds. Each E DG must also be capable of accepting required loads within the assumed loading sequence intervals and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as E DG in standby with the engine hot and E DG in standby with the engine at ambient conditions. Additional E DG capabilities must be demonstrated to meet required Surveillance, e.g., capability of the E DG to revert to standby status on ~~an ECCS~~ a safety injection actuation signal while operating in parallel test mode. 1 2 1 1

Proper sequencing of loads, ~~[~~including tripping of nonessential loads,~~]~~ is a required function for E DG OPERABILITY. 2 1

The AC sources in one train must be separate and independent (to the extent possible) of the AC sources in the other train. For the E DGs, separation and independence are complete. 1

For the offsite AC sources, separation and independence are to the extent practical. ~~A circuit may be connected to more than one ESF bus, with fast transfer capability to the other circuit OPERABLE, and not violate separation criteria. A circuit that is not connected to an ESF bus is required to have OPERABLE fast transfer interlock mechanisms to at least two ESF buses to support OPERABILITY of that circuit.~~ 1

2 INSERT 6

For Unit 3, offsite circuit 1 consists of Startup transformer 3 that is supplied from Switchyard Bay 6 normally connected to the southwest 240 kV bus and the northeast 240 kV bus with each winding of the number 3 Startup transformer's dual winding secondary feeding either 4.16 kV bus 3A or 3B. For Unit 3, offsite circuit number 2 consists of 4 Startup transformer 4 that is supplied from Switchyard Bay 8 normally connected to both the southeast 240 kV bus and southwest 240 kV bus with one of the Startup transformer number 4's dual winding secondary feeding 4.16 kV bus 3A. For Unit 4, offsite circuit number 1 consists of Startup transformer number 4 that is supplied from Switchyard Bay 8 normally connected to both the southeast 240 kV bus and southwest 240 kV bus with each winding of the Startup transformer 4's dual winding secondary feeding either 4.16 kV bus 4A or 4B. For Unit 4, offsite circuit number 2 consists of Startup transformer 3 that is supplied from Switchyard Bay 6 normally connected to the southwest 240 kV bus and the northeast 240 kV bus with one of the Startup transformer's dual winding secondary feeding 4.16 kV bus 4A. Each Startup Transformer has the capability to supply backup power of approximately 2500 kw to the opposite unit's A-train 4.16 kV bus.

1 INSERT 7

When in MODES 1, 2, 3, or 4 three of the four EDGs are required to be OPERABLE in the following combinations.

- Unit 3 – EDG 3A and EDG 3B and either EDG 4A or EDG 4B
- Unit 4 – EDG 4A and EDG 4B and either EDG 3A or EDG 3B

When in MODES 1, 2, 3, or 4, a unit depends on one EDG and its associated train of busses from the opposite unit to satisfy the single active failure criterion for SI pumps and other shared equipment required during a LOCA with a loss of offsite power. Therefore, one EDG from the opposite unit is required to be OPERABLE along with the two EDGs associated with the applicable unit.

BASES

APPLICABILITY

The AC sources ~~[~~and sequencers~~]~~ are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources - Shutdown."

ACTIONS

1 E

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

E

INSERT 8

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~, for two offsite circuits inoperable, is entered. 3

F

~~REVIEWER'S NOTE~~
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~ 4

1 **INSERT 8**

Note 2 states that whenever one or more of the four EDG's is inoperable, ensure compliance with the EDG requirements specified in LCOs 3.5.2 and 3.8.2. Due to the existence of shared systems, there are certain conditions that require special provisions. These provisions are stipulated in the appropriate LCOs as needed. More specifically, LCOs 3.5.2 and 3.8.4 require that associated EDGs be OPERABLE in addition to requiring that SI pumps, battery chargers, and battery banks, respectively also be OPERABLE. This EDG requirement was placed in these LCOs due to the shared nature of these systems to ensure adequate EDG availability for the required components. A situation could arise where a unit in MODES 1, 2, 3, or 4 could be in full compliance with LCO 3.8.1 yet be using shared equipment that could be impacted by taking an EDG out of service on the opposite unit. In this situation, Required Action E.2 which verifies redundant train OPERABILITY, may not be applicable to one of the units. Thus, specific requirements for EDG OPERABILITY have been added to the appropriate LCOs of the shared systems (3.5.2 and 3.8.2). It is important to note that in these LCOs, the inoperability of a required EDG does NOT constitute inoperability of the other components required to be OPERABLE in the LCO. Specific ACTION Statements are included in 3.5.2 and 3.8.2 for those situations where the required components are OPERABLE (by the definition of OPERABILITY) but not capable of being powered by an OPERABLE EDG.

BASES

ACTIONS (continued)

A.2

a qualified

Required Action A.2, which only applies if the train cannot be powered from ~~an~~ offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical power train. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included. 1

E

The Completion Time for Required Action A.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. The train has no offsite power supplying it loads and

b. A required feature on the other train is inoperable.

If at any time during the existence of Condition A (one offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System coincident with one or more inoperable required support or supported features, or both, that are associated with the other train that has offsite power, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

E

The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1

BASES

ACTIONS (continued)

~~A.3~~

~~According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition A for a period that should not exceed 72 hours. [Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.] With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System.~~ 3

~~The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period~~.

INSERT 9

E ~~B~~.1

To ensure a highly reliable power source remains with an inoperable E DG, it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. 1

INSERT 10

~~-----REVIEWER'S NOTE-----~~
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~ 4
~~----------~~

E.3 ~~B.2~~ 3

Required Action E.3 ~~B.2~~ is intended to provide assurance that a loss of offsite power, during the period that a E DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. ~~This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven~~ 3 1 1

3 **INSERT 9**

B.1.1, B.1.2, and B.2

Condition B is modified by a Note stating that this Condition is only applicable for the associated unit when in MODE 1. When the associated unit is in MODES 2, 3, or 4, Condition C is applicable. According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition B for a period that should not exceed 72 hours. However, a unit with an inoperable Startup Transformer or associated circuit can either reduce THERMAL POWER to less than or equal to 30% RATED THERMAL POWER within 24 hours and remain operating at reduced power for up to 30 days until the Startup Transformer and associated circuit is restored to OPERABLE status or restore the inoperable Startup Transformer and associated circuit to OPERABLE status within 72 hours. An alternative to the 72-hour Completion Time is a Completion Time determined in accordance with the Risk Informed Completion Time Program.

The 30% RATED THERMAL POWER limit was chosen because at this power level the decay heat and fission product production has been reduced and the operators are still able to maintain automatic control of the Feedwater Trains and other unit equipment. At lower power levels, the operators must use manual control with the Feedwater Bypass lines. By NOT requiring a complete unit shutdown, the plant avoids a condition requiring natural circulation and avoids intentionally relying on engineered safety features for non-accident conditions.

The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

C.1

Condition C is modified by a Note stating that this Condition is only applicable for the associated unit when in MODES 2, 3, or 4. When the associated unit is in MODE 1, Condition B is applicable. Because of the shared dependence, Action Note states that this Required Action applies to both units simultaneously.

D.1

As each Startup Transformer only provides the limited equivalent power of approximately one EDG to the opposite unit's A train 4.16 kV bus, the Completion Time of 30 days has been applied before the opposite unit is required to be shutdown.

1 INSERT 10

E.2

When in MODES 1, 2, 3, or 4, a unit depends on one EDG and its associated train of busses from the opposite unit to satisfy the single active failure criterion for SI pumps and other shared equipment required during a LOCA with a loss of offsite power. Therefore, one EDG from the opposite unit is required to be OPERABLE along with the two EDGs associated with the applicable unit.

The allowed Completion Time of 2 hours provides an acceptable time for evaluating and repairing minor problems without allowing the plant to remain in an unacceptable condition for an extended period. Because of the shared dependence, Required Action E.2 is modified by a Note stating that this Required Action applies to both units simultaneously.

BASES

ACTIONS (continued)

~~auxiliary feedwater pumps, are not included~~. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG. E 1 1

The Completion Time for Required Action ~~B.2~~ E.3 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both: 3

a. An inoperable DG exists and E 1

b. A required feature on the other train (Train A or Train B) is inoperable.

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked. E 1

Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is Acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. E E 1 1

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. E 1

E.4 ~~B.3~~.1 and ~~B.3~~.2 3

Required Action ~~B.3~~.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG(s), the other DG(s) would be declared inoperable upon discovery and Condition E of LCO 3.8.1 would be entered. Once the failure is repaired, the common cause failure no longer exists, and E E 1

BASES

ACTIONS (continued)

Required Action ~~B.3~~E.4.1 is satisfied. If the cause of the initial inoperable
EDG cannot be confirmed not to exist on the remaining EDG(s), 1
performance of SR 3.8.1.2 suffices to provide assurance of continued
OPERABILITY of that EDG. 1

In the event the inoperable EDG is restored to OPERABLE status prior to 1
completing either ~~B.3~~E.4.1 or ~~B.3~~E.4.2, the ~~[~~plant corrective action program~~]~~ will 3 2
continue to evaluate the common cause possibility. This continued
evaluation, however, is no longer under the 24 hour constraint imposed 3
while in Condition ~~B~~E.

According to Generic Letter 84-15 (Ref. 7), ~~[~~24~~]~~ hours is reasonable to 2
confirm that the OPERABLE EDG(s) is not affected by the same problem 1
as the inoperable EDG.

<u>~~B.4~~ E.5</u> 3

INSERT 11

~~According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition B for a period that should not exceed 72 hours.~~

~~In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.~~ 1
~~[~~Alternatively, a Completion Time can be determined in accordance with
the Risk Informed Completion Time Program.~~]~~ 2

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

Required Action ~~C~~F.1, which applies when two offsite circuits are inoperable, is intended to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions. The Completion Time for this failure of redundant required features is reduced to 12 hours from that allowed for one train without offsite power (Required Action A.2). The rationale for the reduction to 12 hours is that Regulatory Guide 1.93 (Ref. 6) allows a Completion Time of 24 hours for two required offsite circuits inoperable, based upon the assumption that two complete safety trains are OPERABLE. When a concurrent redundant required feature failure exists, this assumption is not the case, and a shorter Completion Time of 12 hours is appropriate. These features are powered from redundant AC safety trains. ~~This includes motor driven auxiliary feedwater pumps. Single train features, such as turbine driven auxiliary pumps, are not included in the list~~. 1

1 **INSERT 11**

In Condition E, the remaining OPERABLE EDGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. An evaluation was performed to evaluate the risk associated with extending the Completion Time for a single inoperable EDG from 72 hours to 14 days from both a qualitative and quantitative perspective and found it to be acceptable (Ref. 12).

In accordance with Technical Specification Amendments 215/209 during MODES 1, 2, and 3, if an EDG is to be removed from service for maintenance for a period scheduled to exceed 72 hours, the following restrictions apply:

- If an EDG is unavailable, an EDG on the opposite unit will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore OPERABILITY.
- If the blackout crosstie is unavailable, an EDG will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore OPERABILITY.
- If an EDG is unavailable, the blackout crosstie will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore OPERABILITY.
- If a condition is entered in which both an EDG and the blackout crosstie are unavailable at the same time, restore the EDG or blackout crosstie to service as soon as possible.
- If an EDG is unavailable, the startup transformer will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore OPERABILITY.
- If the startup transformer is unavailable, an EDG will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore OPERABILITY.

In addition, positive measures in the form of administrative controls and guidelines do not allow maintenance to be planned on EDGs when adverse weather conditions (hurricanes and tornadoes) are expected, such as

- If a hurricane warning has been issued in an area which may impact the Florida Power & Light (FPL) grid, i.e., within the FPL service area, an EDG or the Blackout Crosstie should be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore OPERABILITY.
- If an EDG or the Blackout Crosstie is unavailable when a hurricane warning in an area that may impact the FPL grid is issued, the unavailable components will be restored to service as soon as possible.
- If a tornado watch has been issued for an area which includes the Turkey Point Plant site, and/or the substations and transmission lines serving Turkey Point Plant switchyard, restore the unavailable components to service as soon as possible.

1

INSERT 11 (cont.)

To address the potential fire risk implications during MODES 1, 2, and 3, if an EDG is to be removed from service for maintenance for a period scheduled to exceed 72 hours, the following actions will be completed:

- A plant fire protection walkdown of the areas that could impact EDG availability, offsite power availability or the ability to use the Station Blackout Crosstie prior to entering the extended allowed outage time (AOT).
- A thermographic examination of high-risk potential ignition sources in the Cable Spreading Room and the Control Room,
- Restriction of planned hot work in the Cable Spreading Room and Control Room during the extended AOT, and
- Establishment of a continuous fire watch in the Cable Spreading Room when in the extended AOT.

In addition to the predetermined restrictions, assessments performed in accordance with the provisions of the Maintenance Rule (a)(4) will ensure that any other risk significant configurations are identified before removing an EDG from service for pre-planned maintenance.

The Required Actions have been modified by a Note. The Note states that Required Actions E.2 and E.3 are not applicable for Unit 4 when the required Unit 3 EDG is declared inoperable by LCO 3.8.3 Condition F. LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," Condition F is associated with the Unit 3 temporary fuel storage system.

ACTIONS (continued)

The Completion Time for Required Action ~~C~~F.1 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action the Completion Time only begins on discovery that both: 3

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition ~~C~~F (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. 3

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~F for a period that should not exceed 24 hours. ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 3 2 3

Because of the normally high availability of the offsite sources, this level of degradation may appear to be more severe than other combinations of two AC sources inoperable that involve one or more EDGs inoperable. However, two factors tend to decrease the severity of this level of degradation: 1

a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure and

b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source.

With both of the required offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria.

BASES

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A.

~~D~~G.1 and ~~D~~G.2 3

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition ~~D~~G are modified by a Note to indicate that when Condition ~~D~~G is entered with no AC source to any train, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition ~~D~~G to provide requirements for the loss of one offsite circuit and one EDG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train. 3 3 1

~~According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition D for a period that should not exceed 12 hours. [Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.]~~

In Condition ~~D~~G, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition ~~C~~F (loss of both required offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The ~~12~~ 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ 3 3 1 2 2

~~E~~H.1 3

With Train A and Train B EDGs inoperable, there are no remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that 1

BASES

ACTIONS (continued)

associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Reference 6, with both E DGs inoperable, operation may continue for a period that should not exceed 2 hours. 1

~~[F~~ I.1 3

The sequencer(s) is an essential support system to ~~[~~both the offsite circuit and the E DG associated with a given ESF bus~~]~~. ~~[~~Furthermore, the sequencer is on the primary success path for most major AC electrically powered safety systems powered from the associated ESF bus.~~]~~ Therefore, loss of an ~~[~~ESF bus sequencer~~]~~ affects every major ESF system in the ~~[division]~~ train. The ~~[12]~~ 72 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining sequencer OPERABILITY. ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ This time period also ensures that the probability of an accident (requiring sequencer OPERABILITY) occurring during periods when the sequencer is inoperable is minimal. 1 2 2

~~This Condition is preceded by a Note that allows the Condition to be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads under any conditions. Implicit in this Note is the concept that the Condition must be retained if any sequencer failure mode results in the inability to start all or part of the safety loads when required, regardless of power availability, or results in overloading the offsite power circuit to a safety bus during an event and thereby causes its failure. Also implicit in the Note, is that the Condition is not applicable to any train that does not have a sequencer.]~~ 4

~~G~~ J.1 and ~~G~~ J.2 3

If the inoperable AC electric power sources cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

INSERT 12

1 **INSERT 12**

Condition J is modified by a Note stating that Condition J only applies to one Unit during a dual Unit shutdown. Due to the shared nature of numerous electrical components between Turkey Point Units 3 & 4, the inoperability of a component on an associated unit will often affect the operation of the opposite unit. These shared electrical components consist primarily of both Startup Transformers, three out of four 4.16 kV buses (A, C, and D), and associated 480 V Motor Control Centers, all four 125 VDC busses, all eight 120 VAC Vital panels and eight out of twelve Vital AC Inverters, four out of eight battery chargers, and all four battery banks. Depending on the components which is (are) determined inoperable, the resulting ACTION can range from the eventual shut down of the opposite unit long after the associated unit has been shut down (30 days) to an immediate shutdown of both units. Therefore, Conditions J, K, and L allow for an orderly consecutive shutdown of both units when the inoperability of a component(s) affects both units with equal severity.

BASES

ACTIONS (continued)

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 8). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 8, the ~~steam~~ turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective. 1

Required Action ~~G~~ J.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. 3

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

INSERT 13

~~H~~ M.1 3

Condition ~~H~~ M corresponds to a level of degradation in which all redundancy in the AC electrical power supplies has been lost. At this severely degraded level, any further losses in the AC electrical power system will cause a loss of function. Therefore, no additional time is justified for continued operation. The unit is required by LCO 3.0.3 to commence a controlled shutdown. INSERT 14 3

SURVEILLANCE REQUIREMENTS

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with ~~10 CFR 50, Appendix A,~~ 1967 draft AEC GDC ~~18~~ 39 (Ref. ~~9~~ 1). Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SRs for demonstrating the OPERABILITY of the E DGs are in accordance with the recommendations of Regulatory Guide 1.9 (Ref. 3), Regulatory Guide 1.108 (Ref. ~~10~~ 9), and Regulatory Guide 1.137 (Ref. ~~11~~ 10), as addressed in the U FSAR. 1 1 1

1 6 **INSERT 13**

K.1 and K.2

If the inoperable AC electric power sources cannot be restored to OPERABLE status within the required Completion Time and a dual unit shutdown is required, the units must be brought to a MODE in which overall plant risk is reduced. To achieve this status safely, the Units are shut down consecutively such that one unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours while the other Unit must be brought to at least MODE 3 within 12 hours and to MODE 4 within 18 hours.

Condition K is modified by two Notes. Note 1 states that Condition K only applies when a dual Unit shutdown is required. During a dual unit shutdown Condition J and Condition K are entered simultaneously based on the Required Actions and associated Completion Times that are not met. When a single unit is affected, the time to be in MODE 3 is 6 hours, Required Action J.1. When an ACTION statement requires a dual unit shutdown, the time to be in MODE 3 for the second Unit is 12 hours. This is to allow for the orderly shutdown of one unit at a time and not jeopardize the stability of the electrical grid by imposing a simultaneous dual unit shutdown. Note 2 states that only one Unit can enter Condition K ensuring a sequential shutdown to MODE 3 of the Units.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 8). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 8, the turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action K.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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

1 6 **INSERT 13 (cont.)**

L.1 and L.2

If two inoperable Offsite circuits cannot be restored to OPERABLE status within the required Completion Time a dual unit shutdown is required; the Units must be brought to a MODE in which overall plant risk is reduced. To achieve this status safely, the Units are shut down consecutively such that one unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours while the other Unit must be brought to at least MODE 3 within 18 hours and to MODE 4 within 24 hours.

Condition L is modified by two Notes. Note 1 states that Condition L only applies when a dual Unit shutdown is required. During a dual unit shutdown Condition J and Condition L are entered simultaneously based on the Required Actions and associated Completion Times that are not met. When a single unit is affected, the time to be in MODE 3 is 6 hours, Required Action J.1 and MODE 4 is 12 hours. When an ACTION statement requires a dual unit shutdown, the time to be in MODE 3 for one Unit is 18 hours. A consecutive shutdown is used because a unit without its associated transformer must perform a natural circulation cooldown. By placing one unit in MODE 4 before starting shutdown of the second unit, a dual unit natural circulation cooldown is avoided.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 8). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 8, the turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action L.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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

INSERT 14

This Required Action is modified by a Note stating that this Required Action applies to both units simultaneously.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of ~~[3740] V is 90%~~ 3950 V is 95% of the nominal 4160 V output voltage. This value~~, which is specified in ANSI C84.1 (Ref. 12),~~ allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating. 2 1

~~The specified maximum steady state output voltage of [4756] V is equal to the maximum operating voltage specified for 4000 V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 4000 V motors is no more than the maximum rated operating voltages. The specified minimum and maximum frequencies of the DG are 58.8 Hz and 61.2 Hz, respectively. These values are equal to ± 2% of the 60 Hz nominal frequency and are derived from the recommendations given in Regulatory Guide 1.9 (Ref. 3).~~ INSERT 15 1

SR 3.8.1.1

This SR ensures correct breaker alignment for each ~~[required]~~ offsite circuit to ensure that distribution buses and loads are connected to their ~~preferred~~ offsite power source, and that appropriate independence of offsite circuits is maintained. The SR also verifies the indicated availability of three-phase AC electrical power from each ~~[required]~~ offsite circuit to the onsite distribution network~~. [The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.~~ 2 1

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 4

1 **INSERT 15**

The steady state voltage and frequency limits of 3950V to 4350V and 60 ± 0.6 Hz are derived from the worst case EDG loading conditions established during the Extended Power Uprate (EPU) evaluation. The minimum voltage limit (3950V) of the EDG at the 4.16 kV buses, with line losses accounted for, will be above the minimum required running voltage of 3600V (90%) of all 4000V motors. The maximum voltage limit (4350V) of the EDG at the 4.16 kV buses is below the maximum required running voltage limit of 4400V (110%) of all 4000V motors.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~SR 3.8.1.2 and SR 3.8.1.7~~

~~These SRs help to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and to maintain the unit in a safe shutdown condition.~~

~~To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs are modified by a Note (Note 1 for SR 3.8.1.2 and Note for SR 3.8.1.7) to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup period prior to loading.~~

~~For the purposes of SR 3.8.1.2 and SR 3.8.1.7 testing, the DGs are started from standby conditions. Standby conditions for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.~~

~~[In order to reduce stress and wear on diesel engines, some manufacturers recommend a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. These start procedures are the intent of Note 2, which is only applicable when such modified start procedures are recommended by the manufacturer.]~~

~~SR 3.8.1.7 requires that the DG starts from standby conditions and achieves required voltage and frequency within 10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR, Chapter [15] (Ref. 5).~~

~~The 10 second start requirement is not applicable to SR 3.8.1.2 (see Note 2) when a modified start procedure as described above is used. If a modified start is not used, the 10 second start requirement of SR 3.8.1.7 applies.~~

~~Since SR 3.8.1.7 requires a 10 second start, it is more restrictive than SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2.~~

~~In addition to the SR requirements, the time for the DG to reach steady state operation, unless the modified DG start method is employed, is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance.~~

5

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[The 31 day Frequency for SR 3.8.1.2 is consistent with Regulatory Guide 1.9 (Ref. 3). The 184 day Frequency for SR 3.8.1.7 is a reduction in cold testing consistent with Generic Letter 84-15 (Ref. 7). These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.~~

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~------------------------------REVIEWER'S NOTE------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

SR 3.8.1.~~3~~2

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads greater than or equal to the equivalent of the maximum expected accident loads. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the DG is connected to the offsite source.

Although no power factor requirements are established by this SR, the DG is normally operated at a power factor between ~~[~~0.8 lagging~~]~~ and ~~[~~1.0~~]~~. The ~~[~~0.8~~]~~ value is the design rating of the machine, while the ~~[~~1.0~~]~~ is an operational limitation ~~[~~to ensure circulating currents are minimized~~]~~. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

~~[The 31 day Frequency for this Surveillance is consistent with Regulatory Guide 1.9 (Ref. 3).~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

4

five

This SR is modified by ~~four~~ Notes. Note 1 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 2 states that momentary transients, because of changing bus loads, do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test. Note 3 indicates that this Surveillance should be conducted on only one E DG at a time in order to avoid common cause failures that might result from offsite circuit or grid perturbations. Note 4 stipulates a prerequisite requirement for performance of this SR. A successful E DG start must precede this test to credit satisfactory performance. 1 1

Note 5 states that for Unit 3 to continue test until automatic transfer of fuel from the day tank to the skid mounted tank is demonstrated, and the cooling system is demonstrated OPERABLE 5

SR 3.8.1.~~4~~ 3

This SR provides verification that the level of fuel oil in the day tank ~~[and engine mounted tank]~~ Unit 3 skid tank is at or above the level at which fuel oil is automatically added. The level is expressed as an equivalent volume in gallons, and is selected to ensure adequate fuel oil for a minimum of ~~1 hour of DG operation at full load plus 10%~~ INSERT 16. 2

~~[The 31 day Frequency is adequate to assure that a sufficient supply of fuel oil is available, since low level alarms are provided and facility operators would be aware of any large uses of fuel oil during this period.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~

4

1

INSERT 16

15 hours for Unit 3 EDGs based on a historical LOOP scenario and 1 hour for Unit 4 EDGs.

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.~~5~~4 5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil day ~~[~~and ~~engine mounted]~~ Unit 3 skid tank tanks eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during E DG operation. Water may come from any of several sources, including condensation, groundwater, rainwater, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. ~~[The Surveillance Frequency of 31 days is established by Regulatory Guide 1.137 (Ref. 11). This SR is for preventative maintenance.~~ 2 1 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 4

The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance.

SR 3.8.1.~~6~~5 5

This Surveillance demonstrates that each required fuel oil transfer pump operates and transfers fuel oil from its associated storage tank to its associated day tank. This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer pump is OPERABLE, the fuel oil piping system is intact, the fuel delivery piping is not obstructed, and the controls and control systems for automatic fuel transfer systems are OPERABLE.

BASES

SURVEILLANCE REQUIREMENTS (continued)

INSERT 17

~~[The Frequency for this SR is variable, depending on individual system design, with up to a [92] day interval. The [92] day Frequency corresponds to the testing requirements for pumps as contained in the ASME Code (Ref. 12); however, the design of fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day [and engine mounted] tanks during or following DG testing. In such a case, a 31 day Frequency is appropriate. Since proper operation of fuel transfer systems is an inherent part of DG OPERABILITY, the Frequency of this SR should be modified to reflect individual designs.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 4

SR 3.8.1.~~7~~ 6 5

~~See SR 3.8.1.2.~~ INSERT 18

~~[~~ SR 3.8.1.~~8~~ 7 5

Transfer of each ~~[~~4.16 kV ESF bus~~]~~ power supply from the ~~normal offsite circuit~~ auxiliary transformer to the ~~alternate offsite circuit~~ startup transformer demonstrates the OPERABILITY of the ~~alternate~~ circuit distribution network to power the shutdown loads. 2 1
~~[The [18 month] Frequency of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

1

INSERT 17

This SR is modified by a Note. This Note allows for the use of a temporary system for storage and delivery of at least a 7 day supply of diesel fuel for one Unit 3 EDG. The capability of this temporary system to deliver fuel will maintain the OPERABILITY of the EDG for ten days. If ten days of operation are exceeded using the temporary fuel storage system, action statements for an inoperable but required Unit 3 EDG will require the shutdown of Unit 4 and suspension of the Unit 3 refueling process. This temporary fuel oil storage system provides for OPERABILITY of any EDG normally fed from the Unit 3 fuel oil storage system while the normal diesel fuel storage tank is having its accumulated sediment removed and is being cleaned and or repaired.

Prior to taking the Unit 3 fuel oil storage tank (FOST) out of service the levels of U3 Day Tanks and Skid Tanks as well as the U4 FOST's shall be controlled in accordance with the applicable U3 EDG Temporary Diesel Fuel Oil Supply Procedure.

The Unit 3 EDG 2000 gallon minimum day/skid tank fuel supply will enable the highest loaded EDG (i.e., 3B EDG) to operate for a minimum of 15 hours. Either of the Unit 3 fuel oil transfer pumps can be manually aligned to provide diesel oil flow to either or both of the diesel day tanks associated with EDGs 3A and 3B.

INSERT 18

5

This SR helps to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and to maintain the unit in a safe shutdown condition.

To minimize the wear on moving parts that do not get lubricated when the engine is not running, this SR is modified by a Note to indicate that all EDG starts for this Surveillance may be preceded by an engine prelube period and followed by a warmup period prior to loading.

The EDGs are started from standby conditions. Standby conditions for a EDG mean that the diesel engine oil is being continuously circulated via the standby pumps and temperature is being maintained consistent with manufacturer recommendations.

SR 3.8.1.6 requires that the EDG starts from standby conditions and achieves required voltage and frequency within 15 seconds. The 15 second start requirement supports the assumptions of the design basis LOCA analysis in the UFSAR, Chapter 14 (Ref. 5).

In addition to the SR requirements, the time for the EDG to reach steady state operation is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 4

This SR is modified by a Note. The reason for the Note is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction ~~from~~ to normally perform~~ing~~ the Surveillance ~~in MODE 1 or 2~~ while shutting down 1
is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.~~]~~ 2
Credit may be taken for unplanned events that satisfy this SR.

SR 3.8.1.~~9~~8 5

Each E DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the E DG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency and while maintaining ~~a specified~~ margin to the overspeed trip. ~~[~~For this unit, the single load for each E DG ~~and its horsepower rating~~ is ~~as follows:]~~ INSERT 19 This Surveillance may be accomplished by: 1 2

a. Tripping the E DG output breaker with the E DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus, or 1

b. Tripping its associated single largest post-accident load with the E DG solely supplying the bus. 1

1

INSERT 19

the component cooling water pump having an equivalent kW rating of 380 kW. To compensate for a worst-case EDG over-frequency of 1 % the minimum rejection load specified is increased to 392 kW.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Based on Regulatory Guide 1.9 (Ref. 3), ~~As required by IEEE-308 (Ref. 13),~~ the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower. 1

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The 2 ~~3~~ seconds specified is less than ~~equal to~~ 60% of a typical 5 second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the EDG. 1 SR 3.8.1.8~~9~~.a corresponds to the maximum frequency excursion, while SR 3.8.1.8~~9~~.b and SR 3.8.1.8~~9~~.c are steady state voltage and frequency values to which the system must recover following load rejection. ~~[The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 10).~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~

This SR is modified by three ~~two~~ Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with

BASES

SURVEILLANCE REQUIREMENTS (continued)

these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR.

INSERT 20

E

Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ ~~[0.9]~~ 0.86. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the Surveillance to be conducted at a power factor other than ≤ ~~[0.9]~~. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ ~~[0.9]~~ results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to ~~[0.9]~~ while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of ~~[0.9]~~ may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to ~~[0.9]~~ without exceeding the DG excitation limits.

INSERT 21

~~REVIEWER'S NOTE~~

~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~

~~a. Performance of the SR will not render any safety system or component inoperable,~~

~~b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~

~~c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.~~

1 **INSERT 20**

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

1 **INSERT 21**

Note 3 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized.

BASES

SURVEILLANCE REQUIREMENTS (continued)

9

SR 3.8.1.~~10~~ 5

E

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide for DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

~~[The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 10) and is intended to be consistent with expected fuel cycle lengths.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ 4

three

This SR has been modified by ~~two~~ Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with

SURVEILLANCE REQUIREMENTS (continued)

these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. INSERT 22 Note 2 ensures that the E DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ ~~[0.9]~~ 0.86. This power factor is representative of the actual inductive loading a E DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the Surveillance to be conducted at a power factor other than ≤ ~~[0.9]~~ 0.86. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ ~~[0.9]~~ 0.86 results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to ~~[0.9]~~ 0.86 while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the E DG excitation levels needed to obtain a power factor of ~~[0.9]~~ 0.86 may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the E DG. In such cases, the power factor shall be maintained as close as practicable to ~~[0.9]~~ 0.86 without exceeding the E DG excitation limits.

INSERT 23

~~-----REVIEWER'S NOTE-----~~
~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~

~~a. Performance of the SR will not render any safety system or component inoperable,~~

~~b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~

~~c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.~~

1 **INSERT 22**

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

1 **INSERT 23**

Note 3 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.~~11~~ 10 5

As required by Regulatory Guide 1.108 (Ref. ~~10~~ 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the E DG. It further demonstrates the capability of the E DG to automatically achieve the required voltage and frequency within the specified time. 1

The E DG autostart time of ~~[10]~~ 15 seconds is derived from requirements of the accident analysis to respond to a design basis large break LOCA. The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved. 1 2

The requirement to verify the connection and power supply of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the E DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the E DG systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. 1

~~[The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(1), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.~~

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~

4

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the E DGs during testing. For the purpose of this testing, the E DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment. Credit may be taken for unplanned events that satisfy this SR. INSERT 24 1 6

~~[~~ SR 3.8.1.~~12~~ 11 5

This Surveillance demonstrates that the E DG automatically starts and achieves the required voltage and frequency within the specified time (~~[10]~~ 15 seconds) from the design basis actuation signal (LOCA signal) and operates for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.~~12~~ 11.d and SR 3.8.1.~~12~~ 11.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power. 1 2

1

INSERT 24

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the E DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the E DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. 1

~~[The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 4

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the E DGs during testing. For the purpose of this testing, the E DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment. ~~]~~ Credit may be taken for unplanned events that satisfy this SR. INSERT 25 2

SR 3.8.1.~~13~~ 12 5

This Surveillance demonstrates that E DG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ESF actuation test signal. Noncritical automatic trips are all automatic trips except: 1

a. Engine overspeed; and 1

b. Generator differential current~~;~~. 1

~~[c. Low lube oil pressure;~~

~~d. High crankcase pressure; and~~

~~e. Start failure relay.]~~ 2

The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The E DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the E DG. 1 1

~~[The [18 month] Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

~~OR~~ 2

1

INSERT 25

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~

4

E The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. 1

INSERT 26

~~-----REVIEWER'S NOTE-----~~
~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~

~~a. Performance of the SR will not render any safety system or component inoperable,~~

~~b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~

~~c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.~~
~~-----~~

4

1

INSERT 26

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.~~14~~13 5

Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(3), requires demonstration that the EDGs can start and run continuously at full load 1 capability for an interval of not less than 24 hours, ≥ ~~[~~2~~]~~ hours of which is 2 at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the EDG. The EDG starts for this Surveillance can be performed either from 1 standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.~~2~~7, and for gradual loading, discussed in SR 3.8.1.~~3~~2, are applicable to this SR.

The load band is provided to avoid routine overloading of the EDG. 1 Routine overloading may result in more frequent teardown inspections in 1 accordance with vendor recommendations in order to maintain EDG OPERABILITY.

~~[The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~

This Surveillance is modified by three Notes. Note 1 states that 5 momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. ~~The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.~~ INSERT 27 ~~Credit may be taken for unplanned events that satisfy this SR~~. Note 3 ensures that the E DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ ~~[0.9]~~ 0.86. This power factor is representative of the actual inductive loading a E DG would see under design basis accident conditions. Under certain conditions, however, Note 3 allows the Surveillance to be conducted ~~as~~ at a power factor other than ≤ ~~[0.9]~~ 0.86. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ ~~[0.9]~~ 0.86 results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to ~~[0.9]~~ 0.86 while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the E DG excitation levels needed to obtain a power factor of ~~[0.9]~~ 0.86 may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the E DG. In such cases, the power factor shall be maintained close as practicable to ~~[0.9]~~ 0.86 without exceeding the E DG excitation limits. 1 2 1 1 2 2 2 1 2 1 2 1

SR 3.8.1.~~15~~14 5

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within ~~[10]~~ 15 seconds. The ~~[10]~~ 15 second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. 2

~~[The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(5).~~

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

1

INSERT 27

Note 2 indicates that diesel engine runs for this Surveillance may include warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used, so that mechanical stress and wear on the diesel engine are minimized.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~------------------------------REVIEWER'S NOTE------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~

This SR is modified by two Notes. Note 1 ensures that the test is
performed with the diesel sufficiently hot. The load band is provided to
avoid routine overloading of the EDG. Routine overloads may result in 1
more frequent teardown inspections in accordance with vendor
recommendations in order to maintain EDG OPERABILITY. The 1
requirement that the diesel has operated for at least ~~[~~2~~]~~ hours at full load 2
conditions prior to performance of this Surveillance is based on
manufacturer recommendations for achieving hot conditions. Momentary
transients due to changing bus loads do not invalidate this test. Note 2
allows all EDG starts to be preceded by an engine prelube period to 1
minimize wear and tear on the diesel during testing.

SR 3.8.1.~~16~~15 5

As required by Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(6), this
Surveillance ensures that the manual synchronization and automatic load
transfer from the EDG to the offsite source can be made and the EDG can 1
be returned to ready to load status when offsite power is restored. It also
ensures that the autostart logic is reset to allow the EDG to reload if a
subsequent loss of offsite power occurs. The EDG is considered to be in 1
ready to load status when the EDG is at rated speed and voltage, the
output breaker is open and can receive an autoclose signal on bus
undervoltage, and the load sequence timers are reset.

~~[The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~------------------------------REVIEWER'S NOTE------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~--]~~

SURVEILLANCE REQUIREMENTS (continued)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ 1, 2, 3, or 4 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. INSERT 28 6

~~[~~ SR 3.8.1.~~17~~16 5

Demonstration of the test mode override ensures that the E DG availability under accident conditions will not be compromised as the result of testing and the E DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the E DG running at rated speed and voltage with the E DG output breaker open. These provisions for automatic switchover are ~~required by IEEE-308 (Ref. 13), paragraph 6.2.6(2)~~ INSERT 29. 1 1 1

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.~~12~~11. The intent in the requirement associated with SR 3.8.1.~~17~~16.b is to show that the emergency loading was not affected by the E DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable. 1

This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

~~[The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.~~ 2

1

INSERT 28

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

1

INSERT 29

included in Regulatory Guide 1.108 (Ref. 9), Regulatory Position C.2.a.(8)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~----------]~~ 4

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment. ~~]~~ Credit may be taken for unplanned events that satisfy this SR. 6 2

INSERT 30

SR 3.8.1.~~18~~ 17 5

Under accident ~~[~~and loss of offsite power~~]~~ conditions loads are sequentially connected to the bus by the ~~[~~automatic load sequencer~~]~~. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the E DGs due to high motor starting currents. The ~~[~~10~~]~~% load sequence time interval tolerance ensures that sufficient time exists for the E DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses. 2 1 2 1

1

INSERT 30

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

SURVEILLANCE REQUIREMENTS (continued)

~~[The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~REVIEWER'S NOTE~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~]~~ 4

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ 1, 2, 3, or 4 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. INSERT 31 6

~~REVIEWER'S NOTE~~
~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~ 4

~~a. Performance of the SR will not render any safety system or component inoperable,~~

1 INSERT 31

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~ 4

~~c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.~~

~~---~~

SR 3.8.1.~~19~~ 18 5

In the event of a DBA coincident with a loss of offsite power, the E DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded. 1

This Surveillance demonstrates the E DG operation, as discussed in the Bases for SR 3.8.1.~~11~~ 10, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the E DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. 1 1

~~[The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of [18 months].~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-------------------------------REVIEWER'S NOTE-------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 4
~~---]~~

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the E DGs during testing. For the purpose of this testing, the E DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for E DGs. The reason for Note 2 is that the performance of the Surveillance would remove a 1 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 ~~1 or 2~~ is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment. Credit may be taken for unplanned events that satisfy this SR. INSERT 32 6

SR 3.8.1.19 ~~20~~ 5

This Surveillance demonstrates that the EDG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the EDGs are started simultaneously. 1 1

~~[The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 10).~~

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~----------]~~ 4

1 **INSERT 32**

In addition, because each unit requires three EDGs to be OPERABLE (two from the associated unit and one from the opposite unit) clarification is added stating that the MODE restriction on the performance of this test applies only to the associated units' EDGs.

BASES

SURVEILLANCE REQUIREMENTS (continued)

E This SR is modified by a Note. The reason for the Note is to minimize wear on the DG during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. 1

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 17~~. 1967 proposed GDC 39, Emergency Power for Engineered Safety Features 1
2. U FSAR, Chapter ~~[~~8~~]~~. 1 2
3. Regulatory Guide 1.9, Rev. ~~3~~ 2, December 1979. 1
4. U FSAR, Chapter ~~[~~6~~]~~. 1 2
5. U FSAR, Chapter ~~[15]~~ 14. 1 2
6. Regulatory Guide 1.93, Rev. 0, December 1974.
7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.
8. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.
9. ~~9. 10 CFR 50, Appendix A, GDC 18.~~ 1

~~10~~ 9. Regulatory Guide 1.108, Rev. 1, August 1977. 1

~~11~~ 10. Regulatory Guide 1.137, Rev. ~~[ ]~~ ~~[date]~~ 1, October 1979. 2

~~12~~ 11. ASME Code for Operation and Maintenance of Nuclear Power Plants.

~~13~~ 12. ~~IEEE Standard 308-1978.~~ "Turkey Point Unit 3 and Unit 4 License Amendment 215 and 209, dated August 8, 2001. 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1 BASES, AC SOURCES - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) Bases that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. Actions B, C, and D have been added to include actions contained in the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) that are not included in ISTS. These actions have been added and the subsequent Actions relabeled.

4. The Reviewer's Note is deleted because it is not meant to be retained in the plant specific Improved Technical Specifications (ITS).

5. ISTS includes two similar Surveillance Requirements (SRs)for Emergency Diesel Generator (EDG) starts, SR 3.8.1.2 and SR 3.8.1.7. The major difference between the two surveillances is that SR 3.8.1.7 includes a time requirement for the EDG to reach a voltage and frequency requirement. The ISTS Bases state that because ISTS SR 3.8.1.7 requires a 10 second start, it is more restrictive than ISTS SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2. The PTN CTS does not include an SR for an EDG start without a time requirement but only the timed EDG start. ISTS SR 3.8.1.2 has been deleted with the subsequent SRs renumbered.

6. Changes made to match ITS requirement.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.1, AC SOURCES - OPERATING

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 2

ITS 3.8.2, AC SOURCES - SHUTDOWN

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.8.2 3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

A02

LCO 3.8.2 a. One qualified circuit ~~startup transformer and associated circuits~~, or an alternate circuit, between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown" ~~4160 volt bus, A or B~~, and

LCO 3.8.2 b. One diesel generator with:

LCO 3.8.2 1) For Unit 3 (3A or 3B)

SR 3.8.2.1 A skid-mounted fuel tank and a day fuel tank, with an OPERABLE solenoid valve to permit gravity flow from the day tank to the skid mounted tank, with the two tanks together containing a minimum of 2000 gallons of fuel oil

LCO 3.8.2 For Unit 4 (4A or 4B)

SR 3.8.2.1 A day fuel tank containing a minimum volume of 230 gallons of fuel

See ITS 3.8.3

2) A fuel storage system containing a minimum volume of fuel of 38,000 gallons (Unit 3). 34,700 gallons (Unit 4)**

SR 3.8.2.1 3) An associated fuel transfer pump**

4) For Unit 3 only, lubricating oil storage containing a minimum volume of 120 gallons of lubricating oil

5) For Unit 3 only capability to transfer lubricating oil from storage to the diesel generator unit and

See ITS 3.8.3

6) Energized MCC bus (as identified by Specification 3.8.1.1.b.).

See ITS 3.8.10

Applicability APPLICABILITY: MODES 5* and 6*. During movement of irradiated fuel assemblies

M01

ACTION: Add proposed ACTIONS Note

Required Action A.1 Note NOTE: Enter the ACTION of LCO 3.8.3.2, "Onsite Power Distribution - Shutdown," with one required train de-energized as a result of inoperable offsite circuit.

Action A, Action B With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all ~~operations involving CORE ALTERATIONS~~, positive reactivity changes, movement of irradiated fuel~~, or crane operation with loads over the fuel storage pool,~~ ~~and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 2.2 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange~~,

L01

RA A.2.3 RA B.3 immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible ~~and increase RCS inventory as soon as possible~~.

L02

Add proposed Required Action A.1 and Completion Time

LA01

~~* CAUTION - If the opposite unit is in MODES 1, 2, 3, or 4 see Specification 3.8.1.1~~

See ITS 3.8.3

** A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement 4.8.1.1.2i.1 for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1.a and 4.8.1.1.2 (except for Specification 4.8.1.1.2a.5).

L03

Add proposed SR 3.8.2.1 Note

L04

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.8.1.2.a states that one startup transformer and associated circuits, or an alternate circuit, between the offsite transmission network and the 4160-volt bus, A or B, shall be OPERABLE. ITS 3.8.2 states that one qualified circuit, or an alternate circuit, between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by Limiting Condition for Operation (LCO) 3.8.10, "Distribution Systems – Shutdown" must be OPERABLE. This changes the CTS by defining the startup transformer and associated circuits as the "qualified circuit" and directing the user to ITS 3.8.10 instead of listing the buses the qualified circuit is to be connected to.

This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.1.2 is applicable during MODES 5 and 6. ITS 3.8.2 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies. In addition, a Note has been added to the ACTIONS of ITS 3.8.2 that states LCO 3.0.3 is not applicable. This changes the CTS by requiring the AC Sources to be OPERABLE under more conditions than is currently required.

The purpose of CTS 3.8.1.2 is to ensure that sufficient AC Sources are available to mitigate the consequences of an analyzed event during shutdown modes. This change provides an explicit requirement that the AC Sources must be OPERABLE during the movement of irradiated fuel assemblies. The movement of irradiated fuel assemblies may occur during MODE 5 or 6; however, the operations could also occur while the unit is MODE 1, 2, 3, or 4 if moving fuel only in the spent fuel pool. CTS 3.8.1.1 (ITS 3.8.1) does not provide the appropriate compensatory actions during movement of irradiated fuel assemblies. The movement of irradiated fuel assemblies should be suspended immediately when the AC Sources are not available consistent with the immediate actions in the CTS 3.8.1.2 Action. Entering LCO 3.0.3 while the unit is in MODE 5 or 6 provides no actions as LCO 3.0.3 is not applicable in MODE 5 or 6. Entering LCO 3.0.3 while in Mode 1, 2, 3, or 4 in lieu of ceasing movement of irradiated fuel would result in an unnecessary plant transient and would not place the unit in a safer condition. This change is acceptable because the proposed Applicability is consistent with the Applicability in the AC Distribution System – Shutdown Specification (CTS 3.8.2.2 and ITS 3.8.10). This change is designated as more restrictive because the Applicability of the Specification has been expanded.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 CTS 3.8.1.2 ACTION requires, in part, that with less than the minimum required AC electrical power sources OPERABLE, within 8 hours, depressurize and vent the Reactor Coolant System (RCS) through a greater than or equal to 2.2 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, increase RCS inventory as soon as possible. ISTS 3.8.2 does not include this Required Action. ITS LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," provides requirements for RCS pressure relief when in MODES 4, 5, or 6, with limitations including a Required Action to depressurize and establish an RCS vent of ≥ 2.2 square inches within 12 hours if the other pressure relief methods are incapable of limiting pressure. This changes the CTS by relying on ITS LCO 3.4.12 to provide the Required Actions and allowing a longer Completion Time to depressurize the RCS and establish a ≥ 2.2 square inch RCS vent.

The purpose of CTS 3.8.1.2 Action is to provide remedial actions to be taken in response to the loss of a required DC train while in MODE 5 or 6. One of these remedial actions is to depressurize and vent the RCS through at least a 2.2 square inch vent. This change is acceptable because the CTS 3.8.1.2 Action to depressurize and vent the RCS is duplicative of the ITS LCO 3.4.12 Required Action to depressurize and vent the RCS. In addition, ITS 3.4.12 Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of an event occurring during the allowed Completion Time. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.1.2 ACTION requires the suspension of certain activities when the required AC Source is inoperable. ITS 3.8.2 provides an alternate Required Action (ITS 3.8.2 Required Action A.1) that allows the declaration of affected required feature(s) with no offsite power available inoperable instead of requiring the specified activities to be suspended. This changes the CTS by allowing the affected required feature(s) with no offsite power available to be declared inoperable instead of suspending the specified activities.

The purpose of CTS 3.8.1.2 is to ensure the appropriate offsite circuit is OPERABLE. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of an event occurring during the repair period. This changes the CTS by allowing the affected required feature(s) with no offsite power available to be declared inoperable instead of suspending specified activities (i.e., movement of irradiated fuel assemblies). Because the ITS 3.8.2 circuit OPERABILITY requirements are proposed to require supplying power to all required electrical power distribution subsystems, if one or more subsystems are not powered by an offsite circuit, that circuit is inoperable. Conservative actions can be assured if all required equipment with offsite power is declared inoperable and the associated ACTIONS of the individual equipment is taken (ITS 3.8.2 Required Action A.1). This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements (SRs) of 4.8.1.1.1.a and 4.8.1.1.2 (except for Specification 4.8.1.1.2a.5). ITS SR 3.8.2.1 has included a similar allowance in the Note to SR 3.8.2.1; however, additional ITS SRs are exempt from being required to be performed. ITS SR 3.8.2.1 Note states the following SRs are not required to be performed: SR 3.8.1.2, SR 3.8.1.8 through SR 3.8.1.10, SR 3.8.1.12 through SR 3.8.1.15, and SR 3.8.1.17. ITS 3.8.1.2 is CTS 4.8.1.1.2a.5. This changes the CTS by not requiring the performance of CTS 4.8.1.1.2g.2 (ITS SR 3.8.1.8), CTS 4.8.1.1.2g.3 (ITS SR 3.8.1.9), CTS 4.8.1.1.2g.4 (ITS SR 3.8.1.10), CTS 4.8.1.1.2g.6)c (ITS SR 3.8.1.12), CTS 4.8.1.1.2g.7 (ITS SR 3.8.1.13), CTS 4.8.1.1.2g.7 (ITS SR 3.8.1.14), CTS 4.8.1.1.2g.9 (ITS SR 3.8.1.15), and CTS 4.8.1.1.2g.12 (ITS SR 3.8.1.17).

The purpose of CTS 3.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the new Surveillance Acceptance Criteria provides an acceptable level of equipment reliability. Currently CTS 4.8.1.1.2a.5 (ITS 3.8.1.2) is not required to be performed (however it must be met). CTS 4.8.1.1.2g.2 (ITS SR 3.8.1.8) is the EDG single largest load reject test, CTS 4.8.1.1.2g.3 (ITS SR 3.8.1.9) is the EDG full load reject test, CTS 4.8.1.1.2g.4 (ITS SR 3.8.1.10) is the EDG start on a loss of offsite power test, CTS 4.8.1.1.2g.6)c (ITS SR 3.8.1.12) demonstrates the EDG noncritical protective functions are bypassed on a loss of voltage signal concurrent with an Engineered Safety Feature (ESF) actuation test signal, CTS 4.8.1.1.2g.7 (ITS SR 3.8.1.13) is the EDG 24 hour run test, CTS 4.8.1.1.2g.7 (ITS SR 3.8.1.14) is the EDG hot restart test, CTS 4.8.1.1.2g.9 (ITS SR 3.8.1.15) ensures manual synchronization and automatic load transfer from the EDG to the offsite source can be made and the EDG can be returned to ready to load status when offsite power is restored, and CTS 4.8.1.1.2g.12 (ITS SR 3.8.1.17) is a test of the individual load sequence timers.

These tests normally require the EDG to be paralleled with offsite power. This condition (one of two required EDGs and the only required offsite source connected) presents a significant risk of a single fault resulting in station blackout. The NRC has previously recognized this in the exception stated in CTS 4.8.1.2. To consistently address this concern and to avoid potential conflict with the Technical Specifications, the Surveillances that would require an EDG to be connected to the offsite source or would require disconnection of the required offsite circuit and de-energization of required buses are excepted from performance requirements. The exception does not remove the requirement for the EDGs to be capable of performing the onsite power source function. The exception only removes the requirement to demonstrate the capability while that source of power is being relied on to meet the supporting LCO. This change is acceptable because the EDG must still be capable of supply required MODE 5 and 6 loads if needed, but actual SR performance is not required during periods when an EDG and the offsite circuit are required to be OPERABLE. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L04 *(Category 5 – Deletion of Surveillance Requirements)* CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of SRs 4.8.1.1.1.a and 4.8.1.1.2 (except for Specification 4.8.1.1.2a.5). ITS SR 3.8.2.1 is exempting additional SRs, providing a list of SR that are not applicable. ITS SR 3.8.2.1 states that for AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources - Operating," except SR 3.8.1.7, SR 3.8.1.11, SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19, are applicable. This changes the CTS by not requiring CTS 4.8.1.1.1.b (ITS SR 3.8.1.7), CTS 4.8.1.1.2g.5 (ITS SR 3.8.1.11), CTS .8.1.1.2g.10 (ITS SR 3.8.1.16), CTS 4.8.1.1.2g.a and b) (ITS SR 3.8.1.18), and CTS 4.8.1.1.2h (ITS SR 3.8.1.19) to be met.

The purpose of CTS 3.8.1.2 is to ensure the appropriate AC Sources are demonstrated OPERABLE. This change is acceptable because the SRs are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. This change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.1.b (ITS SR 3.8.1.7), manual transfer of AC power sources, CTS 4.8.1.1.2g.5 (ITS SR 3.8.1.11), the ESF actuation signal EDG start test, CTS 4.8.1.1.2g.10 (ITS SR 3.8.1.16), ESF actuation signal overrides the test mode, CTS 4.8.1.1.2g.a and b (ITS SR 3.8.1.18), ESF concurrent with loss of offsite power signal test, and CTS 4.8.1.1.2h (ITS SR 3.8.1.19) the simultaneous EDG start test. ITS SR 3.8.1.11 and ITS SR 3.8.1.17 are not required to be met because the ESF signal is not required to be OPERABLE in the MODE 5 or 6. The CTS and ITS also do not require the Emergency Core Cooling System (ECCS) subsystem(s) to be OPERABLE in MODE 5 and 6. The EDGs are required to support the equipment powered from the 4160 V buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the EDG to auto-start on an ESF actuation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the EDGs are only needed during a Design Basis Accident (DBA) if a loss of offsite power occurs concurrently. The EDGs are also required to start if a loss of offsite power occurs. The requirement to auto-start the required EDG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.10). Thus, under these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the EDGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal). This change is designated as less restrictive because Surveillances that are required in CTS will not be required in the ITS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - Shutdown

3.8.1.2 LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

3.8.1.2.a a. One qualified circuit , or an alternate circuit, between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown" and 1

3.8.1.2.b b. One emergency diesel generator (~~DG~~ EDG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10. 1

Applicability
DOC M01 APPLICABILITY: MODES 5 and 6,
During movement of ~~[recently]~~ irradiated fuel assemblies. 2

ACTIONS

--NOTE--

DOC M01 LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action A. One required offsite circuit inoperable.	------------------NOTE------------------ Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A. --	
	A.1 Declare affected required feature(s) with no offsite power available inoperable. OR	Immediately

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC L01		A.2.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately	2
		AND		
DOC L01		A.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately	
		AND		
Action		A.2.3 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately	
Action DOC L01	B. One required E DG inoperable.	B.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately	1 2
		AND		
DOC L01		B.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately	
		AND		
Action		B.3 Initiate action to restore required ~~DG~~ EDG to OPERABLE status.	Immediately	1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY	
4.8.1.2 SR 3.8.2.1	-----------------------------NOTE----------------------------- The following SRs are not required to be performed: SR 3.8.1.~~3~~2, SR 3.8.1.~~9~~8 through SR 3.8.1.~~11~~10, SR 3.8.1.~~13~~12 through SR 3.8.1.~~16~~15, and ~~[~~SR 3.8.1.~~18]~~17. ---		3 2
	For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources - Operating," except SR 3.8.1.~~8~~7, SR 3.8.1.~~12~~11, SR 3.8.1.~~17~~16, SR 3.8.1.~~19~~18, and SR 3.8.1.~~20~~19, are applicable.	In accordance with applicable SRs	3

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. Changes are made to match the change in Surveillance Requirement (SR) numbers from the SRs in Limiting Condition for Operation (LCO) 3.8.1.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.2 AC Sources - Shutdown

BASES

BACKGROUND

A description of the AC sources is provided in the Bases for LCO 3.8.1, "AC Sources - Operating."

APPLICABLE SAFETY ANALYSES

The OPERABILITY of the minimum AC sources during MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 2

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident ~~[involving handling recently irradiated fuel. Due to radioactive decay, AC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~. 2

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. because ~~The rationale for~~ this is ~~based on the fact that~~ many Design Basis Accidents (DBAs) that are analyzed in MODES 1, 2, 3, and 4 have no specific analyses in MODES 5 and 6. Worst case bounding events are deemed not credible in MODES 5 and 6 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and result in minimal consequences. ~~These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.~~ 4 4 1

During MODES 1, 2, 3, and 4, various deviations from the analysis assumptions and design requirements are allowed within the Required Actions. This allowance is in recognition that certain testing and maintenance activities must be conducted provided an acceptable level of risk is not exceeded. During MODES 5 and 6, performance of a

BASES

APPLICABLE SAFETY ANALYSES (continued)

significant number of required testing and maintenance activities is also required. In MODES 5 and 6, the activities are ~~generally~~ planned and administratively controlled. Relaxations from MODE 1, 2, 3, and 4 LCO requirements are acceptable during shutdown modes based on: 4

a. The ~~fact that~~ time in an outage is limited. This is a risk prudent goal as well as a utility economic consideration. 4

b. Requiring appropriate compensatory measures for certain conditions. These may include administrative controls, reliance on systems that do not necessarily meet typical design requirements applied to systems credited in operating MODE analyses, or both.

c. Prudent utility consideration of the risk associated with multiple activities that could affect multiple systems.

d. Maintaining, to the extent practical, the ability to perform required functions (even if not meeting MODE 1, 2, 3, and 4 OPERABILITY requirements) with systems assumed to function during an event.

In the event of an accident during shutdown, this LCO ensures the capability to support systems necessary to avoid immediate difficulty, assuming either a loss of all offsite power or a loss of all onsite emergency diesel generator (~~DG~~ EDG) power. 1

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

LCO

One offsite circuit capable of supplying the onsite Class 1E power distribution subsystem(s) of LCO 3.8.10, "Distribution Systems - Shutdown," ensures that all required loads are powered from offsite power. An OPERABLE ~~DG,~~ associated EDG associated with a distribution system train INSERT 1 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~~ EDG ensures the availability of sufficient AC sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~[involving handling recently irradiated fuel]~~). 1 1 2

The ~~qualified~~ offsite circuit must be capable of providing three phases of AC power, maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the Engineered Safety Feature (ESF) bus(es). ~~Qualified~~ offsite circuits are those that are described in the ~~FSAR~~ Bases for LCO 3.8.1 and are part of the licensing basis for the unit. 1 1

1

INSERT 1

(Unit 3 either 3A or 3B and Unit 4 either 4A or 4B)

BASES

LCO (continued)

INSERT 2

~~[Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. The second offsite circuit consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201 powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.]~~ 2

The ~~DG~~ EDG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This sequence must be accomplished within ~~[10]~~ 15 seconds. The ~~DG~~ EDG must be capable of accepting required loads within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as ~~DG~~ EDG in standby with the engine hot and ~~DG~~ EDG in standby at ambient conditions. 1 2 1 1

Proper sequencing of loads, including tripping of nonessential loads, is a required function for ~~DG~~ EDG OPERABILITY. 1

~~[~~ In addition, proper sequencer operation is an integral part of offsite circuit OPERABILITY since its inoperability impacts on the ability to start and maintain energized loads required OPERABLE by LCO 3.8.10. ~~]~~ 1 1

It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply all required trains.

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies provide assurance that: 2

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core,

b. Systems needed to mitigate a fuel handling accident ~~[involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~ are available, 2 2

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

2 INSERT 2

LCO 3.8.2 requires, in part, that a qualified circuit or an alternate circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown" be OPERABLE. The qualified circuit is one of the two startup transformers, one for each unit, connected to the 240 kV buses on their primary sides and have two secondary windings at 4.16 kV that are connected to 4.16 kV buses A or B. An alternate circuit is one that supplies power from the offsite transmission network to 4.16 kV bus A or B. The C bus transformers, through the C buses, serve the unit during startup, shutdown, and after a unit trip; or energizing the Auxiliary Transformer or Startup Transformer with the Main Transformer aligned for backfeed are an example of an alternate circuit that can be connected to bus A or B.

BASES

APPLICABILITY (continued)

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

A.1

An offsite circuit would be considered inoperable if it were not available to one required ESF train. Although two trains are required by LCO 3.8.10, the one train with offsite power available may be capable of supporting sufficient required features to allow continuation of ~~[recently]~~ irradiated fuel movement. By the allowance of the option to declare required features inoperable, with no offsite power available, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS. 2

A.2.1, A.2.2, A.2.3, B.1, B.2, and B.3

With the offsite circuit not available to all required trains, the option would still exist to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required EDG ~~DG~~ inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend movement of ~~[recently]~~ irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron 1 2

BASES

ACTIONS (continued)

concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability or the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems.

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

Pursuant to LCO 3.0.6, the Distribution System's ACTIONS would not be entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A are modified by a Note to indicate that when Condition A is entered with no AC power to any required ESF bus, the ACTIONS for LCO 3.8.10 must be immediately entered. This Note allows Condition A to provide requirements for the loss of the offsite circuit, whether or not a train is de-energized. LCO 3.8.10 would provide the appropriate restrictions for the situation involving a de-energized train.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, 3, and 4. SR 3.8.1.~~8~~7 is not required to be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.~~12~~11 and SR 3.8.1.~~19~~18 are not required to be met because the ESF actuation signal is not required to be OPERABLE. SR 3.8.1.~~17~~16 is not required to be met because the required OPERABLE ~~DG~~EDG(s) is not required to undergo periods of being synchronized to the offsite circuit. SR 3.8.1.~~20~~19 is excepted because starting independence is not required with the ~~DG~~EDG(s) that is not required to be operable. 3 3 1 3 1

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE ~~DG~~EDG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of SRs, and to preclude deenergizing a required 4160 V ESF bus or 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the EDG ~~DG~~. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the EDG ~~DG~~ and offsite circuit is required to be OPERABLE. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR. 1

REFERENCES None.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.2 BASES, AC SOURCES - SHUTDOWN

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) Bases that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. Changes have been made to be consistent with changes made to the Specifications.

4. Editorial/grammatical error corrected.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 3

ITS 3.8.3, DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 A02

LCO 3.8.3 3.8.1.1 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE~~:

a. Two startup transformers and their associated circuits, and

b. Three separate and independent diesel generators* including, See ITS 3.8.1

1) For Unit 3, two (3A and 3B); for Unit 4, one (3A or 3B) each with:

a) A separate skid-mounted fuel tank and a separate day fuel tank with an OPERABLE solenoid valve to permit gravity flow from the day tank to the skid mounted tank, and with the two tanks together containing a minimum of 2000 gallons of fuel oil.

SR 3.8.3.1 b) A common Fuel Storage System containing ~~a minimum volume of 38,000 gallons~~ ≥ a 7 day supply of fuel,** LA01

c) A separate fuel transfer pump,**

SR 3.8.3.2 d) Lubricating oil storage containing a minimum volume of ~~120 gallons~~ of lubricating oil, LA02 See ITS 3.8.9

~~e) Capability to transfer lubricating oil from storage to the diesel generator unit,~~ and

f) Energized MCC bus (MCC 3A vital section for EDG 3A, MCC 3K for EDG 3B).

2) For Unit 3, one (4A or 4B); for Unit 4, two (4A and 4B) each with: See ITS 3.8.1

a) A separate day fuel tank containing a minimum volume of 230 gallons of fuel,

SR 3.8.3.1 b) A separate Fuel Storage System containing ~~a minimum volume of 34,700 gallons~~ ≥ a 7 day supply of fuel, LA01

c) A separate fuel transfer pump, and

d) Energized MCC bus (MCC 4J for EDG 4A, MCC 4K for EDG 4B). See ITS 3.8.9

See ITS 3.8.1

*Whenever one or more of the four EDG's is out-of-service, ensure compliance with the EDG requirements specified in Specifications 3.5.2 and 3.8.2.1.

LCO 3.8.3 Note **A temporary Class III fuel storage system containing a minimum volume of 38, 000 gallons of fuel oil may be used for up to 10 days during the performance of ~~Surveillance Requirement 4.8.1.1.2i.1~~ tank cleaning for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively. A03

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

Applicability

APPLICABILITY: ~~MODES 1, 2, 3, and 4.~~ When associated EDG is required to be OPERABLE A02

ACTION:

See ITS 3.8.1

NOTE: LCO 3.0.4.b is not applicable to diesel generators.

a. With one of two startup transformers or an associated circuit inoperable:

1. Demonstrate the OPERABILITY of the other startup transformer and its associated circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter.

2. Within 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s), declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.

3. If the inoperable startup transformer is the associated startup transformer and became inoperable while the unit is in Mode 1:

   a) Reduce THERMAL POWER to ≤30% RATED THERMAL POWER within 24 hours, or

   b) Restore the inoperable startup transformer and associated circuits to OPERABLE status within the next 48 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

4. If THERMAL POWER is reduced to ≤30% RATED THERMAL POWER within 24 hours or if the inoperable startup transformer is associated with the opposite unit, restore the startup transformer and its associated circuits to OPERABLE status within 30 days of the loss of OPERABILITY, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours.

5. If the inoperable startup transformer is the associated startup transformer and became inoperable while the unit was in MODE 2, 3, or 4, restore the startup transformer and its associated circuits to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously.

Add proposed ACTIONS Note A04

Add proposed ACTION A L01

Add proposed ACTION B and SR 3.8.3.2 M01

Add proposed ACTION E and SR 3.8.3.4 M02

Add proposed ACTION F A05

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

See ITS 3.8.1

ACTION (Continued)

f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two startup transformers and their associated circuits by performing the requirements of Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore all required diesel generators to OPERABLE status within 14 days from time of initial loss or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Action D g. Following the addition of the new fuel oil* to the Diesel Fuel Oil Storage Tanks, with one or more diesel generators with new fuel oil properties outside the required Diesel Fuel Oil Testing Program limits, restore the stored fuel oil properties to within the required limits within 30 days.

Action C h. With one or more diesel generators with stored fuel oil total particulates outside the required Diesel Fuel Oil Testing Program limits, restore the fuel oil total particulates to within the required limits within 7 days.

SR 3.8.3.3 * The properties of API Gravity, specific gravity or an absolute specific gravity; kinematic viscosity; clear and bright appearance; and flash point shall be confirmed to be within the Diesel Fuel Oil Testing Program limits, prior to the addition of the new fuel oil to the Diesel Fuel Oil Storage Tanks.

ELECTRICAL POWER SYSTEMS
SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE*:

a. In accordance with the Surveillance Frequency Control Program by:

See ITS 3.8.1

1) Verifying the fuel volume in the day and skid-mounted fuel tanks (Unit 4-day tank only),

SR 3.8.3.1 2) Verifying the fuel volume in the fuel storage tank,

SR 3.8.3.2 3) Verifying the lubricating oil inventory in storage,

See ITS 3.8.1

4) Verifying the diesel starts and accelerates to reach a generator voltage and frequency of 3950-4350 volts and 60 $\pm$ 0.6 Hz. In accordance with the Surveillance Frequency Control Program, these conditions shall be reached within 15 seconds after the start signal from normal conditions. For all other starts, warmup procedures, such as idling and gradual acceleration as recommended by the manufacturer may be used. The diesel generator shall be started for this test by using one of the following signals:

a) Manual, or

b) Simulated loss-of-offsite power by itself, or

c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or

d) An ESF Actuation test signal by itself.

5) Verifying the generator is synchronized, loaded** to 2300 - 2500 kW (Unit 3), 2650-2850 kW (Unit 4)***, operates at this loaded condition for at least 60 minutes and for Unit 3 until automatic transfer of fuel from the day tank to the skid mounted tank is demonstrated, and the cooling system is demonstrated OPERABLE.

6) Verifying the diesel generator is aligned to provide standby power to the associated emergency buses.

See ITS 3.8.1

* All diesel generator starts for the purpose of these surveillances may be proceeded by a prelube period as recommended by the manufacturer.

** May include gradual loading as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

***Momentary transients outside these load bands do not invalidate this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

See ITS 3.8.1

b. Demonstrating that a fuel transfer pump starts automatically and transfers fuel from the storage system to the day tank, in accordance with the Surveillance Frequency Control Program;

c. In accordance with the Surveillance Frequency Control Program and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day and skid-mounted fuel tanks (Unit 4-day tank only);

SR 3.8.3.5 d. In accordance with the Surveillance Frequency Control Program by checking for and removing accumulated water from the fuel oil storage tanks;

SR 3.8.3.3 e. By verifying fuel oil properties of new fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

SR 3.8.3.3 f. By verifying fuel oil properties of stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

g. In accordance with the Surveillance Frequency Control Program, during shutdown (applicable to only the two diesel generators associated with the unit):

1) Deleted

2)* Verifying the generator capability to reject a load of greater than or equal to 392 kW without exceeding a frequency of 66.25 Hz. Within 2 seconds following the load rejection, the generator shall return to within 3950-4350 volts and frequency at 60 ± 0.6 Hz;

3)* Verifying the generator capability to reject a load of greater than or equal to 2500 kW (Unit 3), 2874 kW (Unit 4) without tripping. The generator voltage shall return to less than or equal to 4784 volts within 2 seconds following the load rejection;

4) Simulating a loss-of-offsite power by itself, and:

a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and

b. Verifying the diesel starts on the auto-start signal, energizes the emergency busses with any permanently

See ITS 3.8.1

* For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

See ITS 3.8.1

h. In accordance with the Surveillance Frequency Control Program or after any modifications which could affect diesel generator interdependence by starting all required diesel generators simultaneously and verifying that all required diesel generators provide 60 ± 0.6 Hz frequency and 3950-4350 volts in less than or equal to 15 seconds: and

~~i. In accordance with the Surveillance Frequency Control Program, by draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank.*~~

LA03

~~j. At least once per 10 years, for Unit 4 only, by performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda.~~

~~4.8.1.1.3 Reports - (Not Used)~~

tank cleaning A03

LCO 3.8.3 Note

* A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of ~~Surveillance Requirement 4.8.1.1.2i~~ for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively.

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 A02

LCO 3.8.3 3.8.1.2 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE~~:

a. One startup transformer and associated circuits, or an alternate circuit, between the offsite transmission network and the 4160 volt bus, A or B, and

b. One diesel generator with: See ITS 3.8.2

1) For Unit 3 (3A or 3B)

A skid-mounted fuel tank and a day fuel tank, with an OPERABLE solenoid valve to permit gravity flow from the day tank to the skid mounted tank, with the two tanks together containing a minimum of 2000 gallons of fuel oil

For Unit 4 (4A or 4B)

A day fuel tank containing a minimum volume of 230 gallons of fuel

SR 3.8.3.1 2) A fuel storage system containing ~~a minimum volume of fuel of 38,000 gallons (Unit 3), 34,700 gallons (Unit 4)**~~ ≥ a 7 day supply LA01

3) An associated fuel transfer pump** See ITS 3.8.2

SR 3.8.3.2 4) For Unit 3 only, lubricating oil storage containing a minimum volume of 120 gallons of lubricating oil

~~5) For Unit 3 only capability to transfer lubricating oil from storage to the diesel generator unit and~~ LA02

6) Energized MCC bus (as identified by Specification 3.8.1.1.b.). See ITS 3.8.10

Applicability APPLICABILITY: ~~MODES 5* and 6*.~~ When associated EDG is required to be OPERABLE A02

ACTION:

NOTE: Enter the ACTION of LCO 3.8.3.2, "Onsite Power Distribution - Shutdown," with one required train de-energized as a result of inoperable offsite circuit.

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 2.2 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible and increase RCS inventory as soon as possible.

See ITS 3.8.2

* CAUTION - If the opposite unit is in MODES 1, 2, 3, or 4 see Specification 3.8.1.1

tank cleaning A03

LCO 3.8.3 Note ** A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of ~~Surveillance Requirement 4.8.1.1.2i.1~~ for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively.

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS LCOs 3.8.1.1 and 3.8.1.2 state the requirements for the AC Sources during operating and shutdown conditions, respectively. These requirements are used to form the Limiting Condition for Operation (LCO) and Applicability for the ITS diesel fuel oil, lube oil, and starting air Specification. ITS LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," states that the stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required Emergency Diesel Generator (EDG). The Applicability for this requirement is when the associated EDG is required to be OPERABLE. This changes the CTS by combining the requirements for diesel fuel oil and diesel lube oil and starting air subsystem into one Specification.

This change is acceptable because the current requirements are translated into ITS form with no technical changes. Diesel fuel oil, lube oil, and starting air subsystems are support systems for each EDG. The CTS and ITS maintain this relationship between the EDGs and the Diesel Fuel Oil System, EDG Lube Oil System, and Starting Air Subsystem. This change is designated as administrative because it does not result in a technical change to the CTS.

A03 CTS 3.8.1.1b.1)b requires a common Fuel Storage System containing a minimum volume of 38,000 gallons of fuel for the Unit 3 EDGs. CTS 3.8.1.1b.1)b, footnote ** modifies this requirement by stating, "A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement 4.8.1.1.2i.1 for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively." CTS 4.8.1.1.2i and CTS 3.8.1.2b.2 are modified by a similar Footnote. Although CTS 3.8.1.1b.1b footnote ** and CTS 3.8.1.2b.2 footnote ** identify the referenced Surveillance Requirement (SR) as 4.8.1.1.2i.1, the correct SR is 4.8.1.1.2i that was changed under PTN License Amendment 263 and 258 (ML15166A320) but missed for these two footnotes. CTS 4.8.1.1.2i requires draining each fuel oil storage tank, removing the accumulated sediment, and cleaning the tank, and is proposed to be relocated (see DOC LA03). ITS 3.8.3 does not include this maintenance activity and is replacing the SR with the tank cleaning activity.

This change is acceptable because it does not change the technical requirements of the CTS. The CTS footnotes state that this allowance is for

SR 4.8.1.1.2i that is to drain, remove sediment, and clean. Draining and the removal of sediment are activities including in tank cleaning; therefore, the activity of tank cleaning encompasses draining and removing sediment. The ITS requirements are consistent with the CTS requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A04 CTS 3.8.1.1b requires three separate and independent EDGs to be operable and lists the subsystem parameters that must be included. CTS 3.8.1.2 states that one EDG must be OPERABLE and lists the subsystem parameters that must be included. ITS 3.8.3 Actions Table is modified by a Note indicating that separate Condition entry is allowed for each EDG. This changes the CTS by explicitly stating that the Action are directed towards a specific separate and independent EDG and have separate entry.

This is acceptable because the Required Actions for each Condition provide appropriate compensatory actions for each required EDG subsystem. Complying with the Required Actions for one EDG subsystem may allow for continued operation, and subsequent EDG subsystems are governed by separate Condition entry and application of associated Required Actions. This change is designated as administrative because the technical requirements of the specifications have not changed.

A05 CTS 3.8.1.1b requires three separate and independent EDGs to be operable and lists the subsystem parameters that must be included. CTS 3.8.1.2 states that one EDG must be OPERABLE and lists the subsystem parameters that must be included. CTS LCO 3.0.2 requires that upon discovery of a failure to meet an LCO, the actions shall be met. ITS 3.8.3 provides an additional LCO associated with EDG fuel oil, lube oil, and starting air with associated surveillances defining when the LCO is met and Actions to take when the LCO is not met. ITS 3.8.3 ACTION F is added to state under what condition associated with LCO 3.8.3 the associated EDG must be declared inoperable. This changes the CTS by provide a specific action for declaring the associated EDG inoperable.

This is acceptable because the Required Actions for each Condition provide appropriate compensatory actions for each required EDG subsystem. Complying with the Required Actions allows for continued operation while responding to a condition that is still within the EDGs ability to function. If the Completion Time is exceeded or the parameter is not within limits for other reasons the ability to restore the support feature or the feature's ability to function are in question and the associated EDG is declared inoperable immediately. Thus, as in CTS, upon discovery of failure to meet an LCO appropriate action are taken. This change is designated as administrative because the technical requirements of the specifications have not changed.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.1.1.b.1)d provides lube oil storage requirements for the Unit 3 EDGs and CTS 4.8.1.1.2.a.3 provides an SR to verify the lubricating oil inventory in storage for Unit 3 EDGs. The CTS does not provide EDG total lube oil inventory requirements for the Unit 3 EDGs and Unit 4 EDGs, or the lube oil contained in the EDG lube oil sump. ITS LCO 3.8.3, in part, requires the lube oil inventory to be within limits for each required EDG that includes the lube oil in the EDG lube oil sump. The Applicability for this requirement is when the associated EDG is required to be OPERABLE. ITS SR 3.8.3.2 requires a verification that the lube oil inventory is greater than a 7-day supply for each EDG, including the lube oil in storage and the lube oil in the EDG sump. ITS 3.8.3 ACTION B and ACTION F provide Actions if the limit of ITS SR 3.8.3.2 is not met. ITS 3.8.3 ACTION F provides similar requirements as are in CTS, declaring the EDG inoperable immediately if not within limits. ITS 3.8.3 ACTION B provides a Required Action to restore the lube oil inventory to greater than or equal to the 7-day supply if there is greater than or equal to a 6-day supply. This changes the CTS by adding a lube oil inventory requirement for the EDGs that includes both the inventory in the EDG's sump and the inventory in storage along with an appropriate ACTION and SR.

The purpose of the lube oil inventory requirement in ITS LCO 3.8.3 and SR 3.8.3.2 is to ensure a 7-day lube oil inventory for each EDG is on site. The proposed ITS SR 3.8.3.2 will ensure the 7-day inventory requirement is met. In addition, ITS 3.8.3 ACTION B will allow the 7-day limit to not be met for each EDG for up to 48 hours, provided sufficient lube oil inventory is available for 6 days. If the lube oil inventory is not restored within 48 hours, or if the 6-day limit is not met, then ACTION F requires the associated EDG to be declared inoperable immediately. Furthermore, as stated in the ITS 3.8.3 ACTIONS note, ITS 3.8.3 ACTION B can be separately entered for each EDG. This change is acceptable because a period of 48 hours to complete restoration of the required volume prior to declaring the EDG inoperable is reasonable based on the remaining capacity (> 6 days) and the low rate of usage. In addition, the total required inventory must be verified, not only the inventory in storage. This change is considered more restrictive because it adds a new requirement to maintain a 7-day lube oil inventory for Unit 4 EDGs and requires the verification of the total inventory of lube oil for Unit 3 EDGs.

M02 The CTS does not provide any starting air receiver pressure requirements. ITS LCO 3.8.3, in part, requires the required starting air receiver pressure to be within limits for each required EDG. The Applicability for this requirement is when the associated EDG is required to be OPERABLE. ITS SR 3.8.3.4 requires verification that the required starting air receiver pressure is > 210 psig for each EDG. ITS 3.8.3 ACTION E provides an ACTION if the limit of ITS SR 3.8.3.4 is not met. This changes the CTS by adding a starting air receiver pressure requirement, and an appropriate ACTION and SR.

The purpose of the starting air receiver pressure requirement in ITS LCO 3.8.3 and SR 3.8.3.4 is to ensure starting air for five diesel air starts for each EDG. The proposed ITS SR 3.8.3.4 value, 212 psig for Unit 3 and 195 psig for Unit 4, will ensure the five-diesel air start requirement is met. In addition, ITS 3.8.3 ACTION E will allow the five-diesel air start requirement to not be met for each EDG for up to 48 hours, provided the required starting air receiver pressure is sufficient for one EDG start (≥ 160 psig). If the required starting air receiver pressure is not restored within 48 hours, or if the required starting air receiver pressure is not sufficient for one start, then the associated EDG is required to be declared inoperable immediately. Furthermore, as stated in the ITS 3.8.3 ACTIONS Note, ITS 3.8.3 ACTION E can be separately entered for each EDG. Therefore, this change is acceptable because it provides additional assurance that the EDGs will be capable of performing their function. This change is considered more restrictive because it adds a new requirement to maintain a starting air receiver pressure for each EDG.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.1.1.b.1)b, CTS 3.8.1.1.b.2)b, and CTS 3.8.1.2.b.2 require a separate fuel storage system containing a minimum volume of 38,000 gallons of fuel for Unit 3 and 34,700 gallons of fuel for Unit 4. CTS 3.8.1.1.b.1)d requires lubricating oil storage containing a minimum volume of 120 gallons of lubricating oil for Unit 3 EDGs. ITS SR 3.8.3.1 and SR 3.8.3.2 require verifying that each fuel oil storage tank contains ≥ a 7-day supply of fuel oil and the lubricating oil inventory is ≥ a 7-day supply when the associated EDG is required to be OPERABLE. This changes the CTS by moving the specific values for the fuel oil and lube oil inventory to the Technical Specification Bases.

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS 3.8.1.1.b.1)b, CTS 3.8.1.1.b.2)b, CTS 3.8.1.2.b.2, and CTS 3.8.1.1.b.1)d is to ensure that the EDGs have sufficient fuel oil and lube oil to perform the associated specified safety function when the EDGs are required to be OPERABLE. ITS SR 3.8.3.1 and SR 3.8.3.2 will continue to ensure that sufficient fuel is contained in the fuel oil storage tank and a sufficient volume of lube oil is available for the EDGs to perform the associated specified safety function when the EDGs are required to be OPERABLE. In addition, this change is acceptable because these types of details will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. The program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as less restrictive removal of detail change because details are being moved from the Technical Specifications to the ITS Bases

LA02 *(Type 6 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS 3.8.1.1.b.1)3 requires that the Operability of a Unit 3 EDG includes the capability to transfer lubricating oil from storage to the EDG unit. ITS SR 3.8.3.2 requires verifying lubricating oil inventory is ≥ a 7-day supply. This changes the CTS by removal of an explicit LCO requirement for Unit 3 EDGs.

The removal of the confirmation of the capability to transfer lubricating oil from storage to the EDG unit from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement to verify the lubricating oil inventory is ≥ a 7-day supply. Inherent in the 7-day requirement is the capability to transfer lubricating oil from storage to the EDG unit. If a supply of lube oil cannot be transferred to the Unit 3 EDG, it cannot be included in the 7-day supply. Also, this change is acceptable because these types of procedural details will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because the verification of the capability to transfer lubricating oil from storage to the EDG unit is being removed from the Technical Specifications.

LA03 *(Type 6 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS 4.8.1.1.2.i requires that, in accordance with the Surveillance Frequency Control Program, to drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank. CTS 4.8.1.1.2.j requires at least once per 10 years, for Unit 4 only, to perform a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. ITS 3.8.3 does not include these requirements for the fuel oil storage tanks. This changes the CTS by moving these fuel oil storage tank requirements from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS 4.8.1.1.2.i is to ensure the cleanliness of the tanks. The purpose of CTS 4.8.1.1.2.j is to ensure the leak tightness of the tank. The criteria and Frequencies established in the ITS 5.5.11, "Diesel Fuel Oil Testing Program," and ITS SR 3.8.3.3 will ensure the diesel fuel oil is at a quality that will ensure proper operation of the EDG during a design basis accident (DBA). Also, this change is acceptable because the removed information will be adequately controlled in the TRM. Changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information is being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 and CTS 3.8.1.2 do not provide compensatory actions if the volume of fuel oil in a storage tank is less than the specified limit. Thus, if the minimum required volume is not met, the associated EDG must be declared inoperable and the actions of CTS 3.8.1.1 or CTS 3.8.1.2 must be entered, as appropriate. ITS 3.8.3 ACTION A allows a delay in declaring the associated EDG inoperable as long as the volume of stored fuel oil is greater than a six-day supply. ITS 3.8.3 Required Action A.1 allows 48 hours to restore the fuel oil volume to within limits. As stated in the ACTIONS Note, a separate entry into the ACTION is allowed for each EDG. If the Required Action and associated Completion Time are not met or if the fuel oil storage tank volume is less than a 6-day supply, the associated EDG must be declared inoperable immediately, as required by ITS 3.8.3 ACTION F. This changes the CTS by allowing the EDGs to not be declared inoperable with the fuel oil 7-day storage tank volume not within the specified Surveillance limit as long as the associated EDG has a 6-day supply of fuel oil in the storage tank.

The purpose of ITS 3.8.3 ACTION A is to allow time to restore the stored diesel fuel oil volume to within the specified limit for a given EDG. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to a degraded condition in order to minimize risk associated with continued operation while providing time to restore inventory. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features including the capacity and capability of remaining systems or features, reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The addition of ITS 3.8.3 ACTION A will allow each EDG to not be declared inoperable with the associated stored diesel fuel oil volume not within the specified Surveillance limit if the EDG has enough fuel oil for 6 days of operation. In this Condition, the 7-day fuel oil supply for the EDG is not available. However, the Condition is restricted to fuel oil volume reductions that maintain at least a 6-day supply. These circumstances may be caused by events such as full load operation required after an inadvertent start while at minimum required fuel oil level, or feed and bleed operations, which may be necessary due to increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the associated EDG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

DOC A02 LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required emergency diesel generator (~~DG~~ EDG). 1

INSERT 1

DOC A02 APPLICABILITY: When associated EDG ~~DG~~ is required to be OPERABLE. 1

ACTIONS

---NOTE---

DOC L01 Separate Condition entry is allowed for each EDG ~~DG~~. 1

CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC L01 A. One or more EDG ~~DG~~s with fuel level less than a ~~[~~7~~]~~ day supply and greater than a ~~[~~6~~]~~ day supply in storage tank.	A.1	Restore fuel oil level to within limits.	48 hours 1 2
DOC M01 B. One or more EDG ~~DG~~s with lube oil inventory less than a ~~[~~7~~]~~ day supply and greater than a ~~[~~6~~]~~ day supply.	B.1	Restore lube oil inventory to within limits.	48 hours 1 2 2
3.8.1.1 ACTION h C. One or more EDG ~~DG~~s with stored fuel oil total particulates not within limit.	C.1	Restore fuel oil total particulates to within limits.	7 days 1
3.8.1.1 ACTION g D. One or more EDG ~~DG~~s with new fuel oil properties not within limits.	D.1	Restore stored fuel oil properties to within limits.	30 days 1

CTS

1 **INSERT 1**

3.8.1.1.b.1)b) Footnote **, 3.8.1.2.b.2) Footnote **, 4.8.1.1.2.1 Footnote*

---NOTE---
The Unit 3 fuel oil storage system may be considered OPERABLE for 10 days when a temporary Class III fuel storage system containing ≥ 7 day supply of fuel oil is used during the performance of tank cleaning for the Unit 3 storage tank while Unit 3 is in MODE 5, 6, or defueled. If the diesel fuel oil system is not returned to service within 10 days, LCO 3.8.1 Required Actions E.1, E.4, and E.5 apply to Unit 4 and LCO 3.8.2 ACTIONS apply to Unit 3.

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC M02	E. One or more EDG ~~DG~~s with required starting air receiver pressure < 5 start air pressure ~~[225] psig~~ and ≥ 160 ~~[125]~~ psig.	E.1 Restore starting air receiver pressure to ≥ 5 start air pressure ~~[225] psig~~.	48 hours	1 2
3.8.1.1.b.1)b) Footnote **, 4.8.1.1.2.i Footnote *, 3.8.1.2 Action Footnote **	F. Required Action and associated Completion Time not met. <u>OR</u> One or more EDG ~~DG~~s with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated EDG ~~DG~~ inoperable.	Immediately	1 1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
3.8.1.1.b.1)b), 3.8.1.1.b.2)b), 4.8.1.1.2.a.2) 3.8.1.2.b.2)	SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ a ~~[~~7~~]~~ day supply of fuel.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
3.8.1.1b.1)d), 3.8.1.1b.2)b), 4.8.1.1.2a.3), 3.8.1.2b.4), 3.8.1.2b.5)	SR 3.8.3.2	Verify lubricating oil inventory is ≥ a ~~[~~7~~]~~ day supply.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2
4.8.1.1.2e, 4.8.1.1.2f	SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program	
DOC M02	SR 3.8.3.4	Verify each ~~DG~~ EDG air start receiver pressure is ≥ ~~[225] psig~~ 195 psig for Unit 3 and ≥ 185 psig for Unit 4.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	1 2 2
4.8.1.1.2d	SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	~~[[31] days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.3, DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

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

BASES

BACKGROUND

Each emergency diesel generator (~~DG~~ EDG) is provided with a storage tank having a fuel 1
oil capacity sufficient to operate that diesel for a period of ~~[~~7~~]~~ days while 2
the ~~DG~~ EDG is supplying maximum post loss of coolant accident load demand 1
discussed in the UFSAR, Section ~~[9.5.4.2]~~ 8.2 (Ref. 1) ~~[and Regulatory~~ 1 2
~~Guide 1.137 (Ref. 2)]~~. The maximum load demand is calculated using the
assumption that a minimum of any ~~two~~ EDG ~~DGs~~ is available. This onsite fuel 1
oil capacity is sufficient to operate the ~~DG~~ EDGs for longer than the time to
replenish the onsite supply from outside sources.

Fuel oil is transferred from storage tank to day tank by ~~either of two~~ one 1
transfer pump~~s~~ associated with each ~~storage~~ EDG ~~tank~~. Redundancy of
pumps and piping precludes the failure of one pump, or the rupture of any
pipe, valve or tank to result in the loss of more than one ~~DG~~ EDG. ~~All outside~~ 1
~~tanks, pumps, and piping are located underground~~.

For proper operation of the standby ~~DG~~ EDGs, it is necessary to ensure the 1
proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses
the recommended fuel oil practices as supplemented by ANSI N195
(Ref. 3). The fuel oil properties governed by these SRs are the water and
sediment content, the kinematic viscosity, specific gravity (or API gravity),
and impurity level.

The ~~DG~~ EDG lubrication system is designed to provide sufficient lubrication to 1
permit proper operation of its associated ~~DG~~ EDG under all loading conditions.
The system is required to circulate the lube oil to the diesel engine
working surfaces and to remove excess heat generated by friction during
operation. Each Unit 4 engine oil sump contains an inventory capable of 1
supporting a minimum of ~~[~~7~~]~~ days of operation. ~~[~~The onsite storage in 1 2
addition to the Unit 3 engine oil sump is sufficient to ensure ~~[~~7~~]~~ days of
continuous operation.~~]~~ This supply is sufficient to allow the operator to
replenish lube oil from outside sources.

Each ~~DG~~ EDG has an air start system with adequate capacity for five 1
successive start attempts on the ~~DG~~ EDG without recharging the air start
receiver(s). Each EDG has four air motors, two independent 100% capacity sets consisting of an upper and lower air motor with two sets of two air receivers. Air receiver tanks A & B provide an air supply to one set of air start motors and air receiver tanks C & D provide an air supply to the second set of air start motors.

BASES

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the U FSAR, Chapter ~~[~~6~~]~~ (Ref. 4), and in the U FSAR, Chapter ~~[15]~~ 14 (Ref. 5), assume Engineered Safety Feature (ESF) systems are OPERABLE. The ~~DG~~ EDGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems. 1 2 1

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

LCO

Stored diesel fuel oil is required to have sufficient supply for ~~[~~7~~]~~ days of full load operation. It is also required to meet specific standards for quality. Additionally, sufficient lubricating oil supply must be available to ensure the capability to operate at full load for ~~[~~7~~]~~ days. This requirement, in conjunction with an ability to obtain replacement supplies within ~~[~~7~~]~~ days, supports the availability of ~~DG~~ EDGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power. ~~DG~~ EDG day tank fuel requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources - Operating," and LCO 3.8.2, "AC Sources - Shutdown." 2 2 2 1 1

The starting air system is required to have a minimum capacity for five successive ~~DG~~ EDG start attempts without recharging the air start receivers. INSERT 1 1

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil, lube oil, and the starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil, lube oil, and starting air are required to be within limits when the associated ~~DG~~ EDG is required to be OPERABLE. 1

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each ~~DG~~ EDG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable ~~DG~~ EDG subsystem. Complying with the Required Actions for one inoperable ~~DG~~ EDG subsystem may allow for continued operation, and subsequent inoperable ~~DG~~ EDG subsystem(s) are governed by separate Condition entry and application of associated Required Actions. 1 1

1 **INSERT 1**

Each EDG's air start system contains two sets of two air receivers. The air receivers are sized to ensure that the system has sufficient capacity, with a pressure of 195/185 psig (Unit 3/Unit 4) in all four air receivers and four air start motors available or 212/195 psig (Unit 3/Unit 4) with only two air receivers and two air start motors available, for four unsuccessful attempts and one successful EDG starting attempt without the need for recharging. These values are for the receivers sizing criteria and are not the minimum pressure required to start the EDG. If either set of air receivers is out of service, the other set of air receivers with either set of air start motors or both sets of air start motors is capable of starting the associated EDG. Redundant air start subsystems are not required for operability of the EDG.

This LCO is modified by a Note that allows the use of a temporary Class III fuel oil storage and transfer system to maintain OPERABILITY of Unit 3 EDGs during performance of fuel oil storage tank cleaning for Unit 3 fuel oil storage tank (FOST). Use of this temporary system provides for storage and delivery of at least a 7-day supply of fuel oil for one Unit 3 EDG operation. This temporary system is allowed only for a period of 10 days once every 10 years during the performance of FOST cleaning. If 10 days of operation are exceeded using the temporary fuel oil storage system, the appropriate action statements for an inoperable but required Unit 3 EDG are entered.

BASES

ACTIONS (continued)

A.1

In this Condition, the ~~[~~7~~]~~ day fuel oil supply for a ~~DG~~ EDG is not available. 2 1
However, the Condition is restricted to fuel oil level reductions that
maintain at least a ~~[~~6~~]~~ day supply. The fuel oil level equivalent to a ~~[~~6~~]~~ day 1
supply is ~~[28,285] gallons~~ 32,600 gallons for Unit 3 and 30,000 gallons for Unit 4. These circumstances may be caused by 2
events, such as full load operation required after an inadvertent start
while at minimum required level, or feed and bleed operations, which may
be necessitated by increasing particulate levels or any number of other oil
quality degradations. This restriction allows sufficient time for obtaining
the requisite replacement volume and performing the analyses required
prior to addition of fuel oil to the tank. A period of 48 hours is considered
sufficient to complete restoration of the required level prior to declaring
the ~~DG~~ EDG inoperable. This period is acceptable based on the remaining 1
capacity (> ~~[~~6~~]~~ days), the fact that procedures will be initiated to obtain 2
replenishment, and the low probability of an event during this brief period.

B.1

In this Condition, the ~~[~~7~~]~~ day lube oil inventory i.e., sufficient lubricating oil 2
to support ~~[~~7~~]~~ days of continuous ~~DG~~ EDG operation at full load conditions is 1
not available. However, the Condition is restricted to lube oil volume
reductions that maintain at least a ~~[~~6~~]~~ day supply. The lube oil inventory
equivalent to a ~~[~~6~~]~~ day supply is ~~[425] gallons~~ 170 gallons for Unit 3 and 160 gallons for Unit 4. This restriction allows 2
sufficient time to obtain the requisite replacement volume. A period of
48 hours is considered sufficient to complete restoration of the required
volume prior to declaring the ~~DG~~ EDG inoperable. This period is acceptable 1
based on the remaining capacity (> ~~[~~6~~]~~ days), the low rate of usage, the 2
fact that procedures will be initiated to obtain replenishment, and the low
probability of an event during this brief period.

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.5. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and proper engine

BASES

ACTIONS (continued)

performance has been recently demonstrated (within 31 days), it is
prudent to allow a brief period prior to declaring the associated ~~DG~~ EDG 1
inoperable. The 7 day Completion Time allows for further evaluation,
resampling and re-analysis of the ~~DG~~ EDG fuel oil. 1

D.1

With the new fuel oil properties defined in the Bases for SR 3.8.3.4 not
within the required limits, a period of 30 days is allowed for restoring the
stored fuel oil properties. This period provides sufficient time to test the
stored fuel oil to determine that the new fuel oil, when mixed with
previously stored fuel oil, remains acceptable, or to restore the stored fuel
oil properties. This restoration may involve feed and bleed procedures,
filtering, or combinations of these procedures. Even if a ~~DG~~ EDG start and 1
load was required during this time interval and the fuel oil properties were
outside limits, there is a high likelihood that the ~~DG~~ EDG would still be capable 1
of performing its intended function.

E.1

With starting air receiver pressure ~~< [225] psig~~ < 212 psig (1 air start set available) or < 195 psig (2 air start sets available) for Unit 3 and < 195 psig (1 air start set available) or < 185 psig (2 air start sets available) for Unit 4, sufficient capacity for five 2
successive ~~DG~~ EDG start attempts does not exist. However, as long as the 1
receiver pressure is > ~~[125]~~ 160 psig, there is adequate capacity for at least 2
one start attempt, and the ~~DG~~ EDG can be considered OPERABLE while the 1
air receiver pressure is restored to the required limit. A period of 48 hours
is considered sufficient to complete restoration to the required pressure
prior to declaring the ~~DG~~ EDG inoperable. This period is acceptable based on 1
the remaining air start capacity, the fact that most ~~DG~~ EDG starts are
accomplished on the first attempt, and the low probability of an event
during this brief period. An EDG air start set consists of 2 air receivers and 2 air motors.

F.1

With a Required Action and associated Completion Time not met, or one
or more ~~DG~~ EDG's fuel oil, lube oil, or starting air subsystem not within limits 1
for reasons other than addressed by Conditions A through D, the
associated ~~DG~~ EDG may be incapable of performing its intended function and 1
must be immediately declared inoperable.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each EDG ~~DG~~'s operation for ~~[~~7~~]~~ days at full load. The fuel oil level equivalent to a ~~[~~7~~]~~ day supply is 38,000 gallons for Unit 3 and 34,700 gallons for Unit 4 ~~[33,000] gallons~~ when calculated in accordance with References 2 and 3. The required fuel storage volume is determined using the most limiting energy content of the stored fuel. Using the known correlation of diesel fuel oil absolute specific gravity or API gravity to energy content, the required diesel generator output, the corresponding fuel consumption rate, the onsite fuel storage volume required for ~~[~~7~~]~~ days of operation can be determined. SR 3.8.3.3 requires a new fuel to be tested to verify that the absolute specific gravity or API gravity is within the range assumed in the diesel fuel oil consumption calculations. The ~~[~~7~~]~~ day period is sufficient time to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location. 1 2

~~[The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and unit operators would be aware of any large uses of fuel oil during this period.~~

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ 3

SR 3.8.3.2

This Surveillance ensures that sufficient lube oil inventory is available to support at least ~~[~~7~~]~~ days of full load operation for each EDG ~~DG~~. The lube oil inventory equivalent to a ~~[~~7~~]~~ day supply is 197 gallons for Unit 3 and 185 gallons for Unit 4 ~~[500] gallons~~ and is based on the EDG ~~DG~~ manufacturer consumption values for the run time of the EDG ~~DG~~. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the EDG ~~DG~~, when the EDG ~~DG~~ lube oil sump does not hold adequate inventory for ~~[~~7~~]~~ days of full load operation without the level reaching the manufacturer recommended minimum level. 2 1 2 1 1 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run time are closely monitored by the unit staff.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 3
~~---]~~

SR 3.8.3.3

The tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057-~~[ ]~~ 81 (Ref. 6), 2

b. Verify in accordance with the tests specified in ASTM D975-~~[ ]~~ 81 (Ref. 6) that the sample has an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 or an API gravity at 60°F of ≥ 27° and ≤ 39° when tested in accordance with ASTM D1298-~~[ ]~~ 80 (Ref. 6), a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F, and 2 2

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-~~[ ]~~ 82 or a water and sediment content within limits when tested in accordance with ~~[~~ASTM ~~D2709-[ ]~~ D1796] (Ref. 6). 2 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-~~[ ]~~ 81 (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-~~[ ]~~ 79 (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-~~[ ]~~ 82, or ASTM D2622-~~[ ], or ASTM D4294-[ ]~~ (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on ~~DG~~ EDG operation. This Surveillance ensures the availability of high quality fuel oil for the ~~DG~~ EDGs. 2 1 1

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

~~Particulate concentrations should be determined in accordance with ASTM D5452-[ ] (Ref. 6). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. [For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be considered and tested separately.]~~ 1

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals.

SR 3.8.3.4

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each ~~DG~~ EDG is available. The system design requirements provide for a minimum of ~~[~~five~~]~~ engine start cycles without recharging. ~~[~~A start cycle is defined by the ~~DG~~ EDG vendor, but usually is measured in terms of time (seconds of cranking) or engine cranking speed.~~]~~ The pressure specified in this SR is intended to reflect the lowest value at which the ~~[~~five~~]~~ starts can be accomplished. 1 2 1 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~REVIEWER'S NOTE~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~]~~ 3

SR 3.8.3.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during EDG ~~DG~~ operation. Water may come from any of several sources, including condensation, ground water, rain water, and contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system~~. [The Surveillance Frequency of 31 days is established by Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

3

REFERENCES

1. U FSAR, Section ~~[9.5~~ 8.2 ~~4.2].~~ 1 2
2. Regulatory Guide 1.137.
3. ANSI N195, 1976.
4. U FSAR, Chapter ~~[~~6~~]~~. 1 2
5. U FSAR, Chapter ~~[15]~~ 14. 1 2
6. ASTM Standards: D4057-~~[ ]~~ 81; D975-~~[ ]~~ 81; D1298-~~[ ]~~ 80; D4176-~~[ ]~~ 82; ~~[D2709-[ ];]~~ D1796 D1552-~~[ ]~~ 79; D2622-~~[ ]~~ 82; ~~D4294-[ ]; D5452-[ ]~~. 2
7. ASTM Standards, D975-~~[ ]~~ 81, Table 1. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.3 BASES, DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.3, DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 4

ITS 3.8.4, DC SOURCES - OPERATING

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3/4.8.2 D.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.4 A02

LCO 3.8.4 3.8.2.1 The ~~following D.C. electrical sources~~ shall be OPERABLE:*#

~~a. 125-volt D.C. Battery Bank 3A or spare battery bank D-52 and associated full capacity charger(s)~~
~~1) 3A1 powered by motor control center (MCC) 3C with EDG 3A OPERABLE, or~~
~~2) 3A2 powered by MCC 4D with EDG 4A and 4B OPERABLE, or~~
~~3) 3A1 powered by MCC 3C with EDG 3A OPERABLE and 3A2 powered by MCC 4D with EDG 4A and 4B OPERABLE,~~

~~b. 125-volt D.C. Battery Bank 3B or spare battery bank D-52 and associated full capacity charger(s)~~
~~1) 3B1 powered by MCC 3B with EDG 3B OPERABLE, or~~
~~2) 3B2 powered by MCC 4D with EDG 4A and 4B OPERABLE, or~~
~~3) 3B1 powered by MCC 3B with EDG 3B OPERABLE and 3B2 powered by MCC 4D with EDG 4A and 4B OPERABLE,~~

~~c. 125-volt D.C. Battery Bank 4A or spare battery bank D-52 and associated full capacity charger(s)~~
~~1) 4A1 powered by MCC 4C with EDG 4A OPERABLE, or~~
~~2) 4A2 powered by MCC 3D with EDG 3A and 3B OPERABLE, or~~
~~3) 4A1 powered by MCC 4C with EDG 4A OPERABLE and 4A2 powered by MCC 3D with EDG 3A and 3B OPERABLE,~~

~~d. 125-volt D.C. Battery Bank 4B or spare battery bank D-52 and associated full capacity charger(s)~~
~~1) 4B1 powered by MCC 4B with EDG 4B OPERABLE, or~~
~~2) 4B2 powered by MCC 3D with EDG 3A and 3B OPERABLE, or~~
~~3) 4B1 powered by MCC 4B with EDG 4B OPERABLE and 4B2 powered by MCC 3D with EDG 3A and 3B OPERABLE.~~

LA01

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

ACTION:

Action C a. With one or more of the required battery chargers OPERABLE but not capable of being powered from its associated OPERABLE diesel generator(s), restore the capability within 72 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following 30~~ 18 hours. This ACTION applies to both units simultaneously.

Actions Note L01

Add proposed Required Action E L02

LCO 3.8.4 Note * All battery chargers required to satisfy the LCO shall be powered from separate MCCs.

LCO 3.8.4 Note # Inoperability of the required EDG's specified in the LCO requirements below does not constitute inoperability of the associated battery chargers or battery banks.

D.C. SOURCES

LIMITING CONDITION FOR OPERATION

A03

inoperable

one required

72 hours for Required Action A.3

L03

ACTION: (Continued)

Action A, Action B

b. With one of the required battery banks inoperable, or with ~~none of the~~ full-capacity charger~~s~~ ~~associated with a battery bank OPERABLE~~, restore all battery banks to OPERABLE status and at least one charger associated with each battery bank to OPERABLE status within two hours* or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in ~~COLD SHUTDOWN~~ within ~~the following 30~~ hours. This ACTION applies to both units simultaneously.

Actions Note

MODE 4

18

L01

Add proposed Required Action A.1 and A.2

L03

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and its associated full capacity charger(s) shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that:

1) The parameters in Table 4.8-2 meet the Category A limits, and

See ITS 3.8.6

SR 3.8.4.1

2) The total battery terminal voltage is greater than or equal to ~~129 volts on float charge and the battery charger(s) output voltage is ≥ 129 volts~~, and

minimum established float voltage

LA02

Action D

3) If two battery chargers are connected to the battery bank, verify each battery charger is supplying a minimum of 10 amperes, or demonstrate that the battery charger supplying less than 10 amperes will accept and supply the D.C. bus load independent of its associated battery charger.

b. In accordance with the Surveillance Frequency Control Program and within 7 days after a battery discharge with battery terminal voltage below 105 volts (108.6 volts for spare battery D-52), or battery overcharge with battery terminal voltage above 143 volts, by verifying that:

1) The parameters in Table 4.8-2 meet the Category B limits,

See ITS 3.8.6

2) The average electrolyte temperature of every sixth cell is above 60°F, and

3) There is no visible corrosion at either terminals or connectors, or verify battery connection resistance is:

See ITS 5.5.16

Battery 3B, 4A	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 29 ≤ 30 ≤ 125 ≤ 1958
Battery 3A, 4B, D-52	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 35 ≤ 40 ≤ 125 ≤ 2463

c. In accordance with the Surveillance Frequency Control Program by verifying that:

1) The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

Action B

*Can be extended to 24 hours if the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated diesel generator(s).

D.C. SOURCES

SURVEILLANCE REQUIREMENTS (Continued)

See ITS 5.5.16

2) The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material,

SR 3.8.4.2

3) Each 400 amp battery charger (associated with Battery Banks 3A and 4B) will supply at least 400 amperes at ≥ ~~129 volts~~ the minimum established float voltage for at least 8 hours, and each 300 amp battery charger (associated with Battery Banks 3B and 4A) will supply at least 300 amperes at ≥ ~~129 volts~~ for at least 8 hours, and LA03

Add proposed second option for SR 3.8.4.2 L04

4) Battery Connection resistance is:

Battery 3B, 4A	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 29 ≤ 30 ≤ 125 ≤ 1958
Battery 3A, 4B, D-52	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 35 ≤ 40 ≤ 125 ≤ 2463

See ITS 5.5.16

Add proposed SR 3.8.4.3 Note 2 A04

SR 3.8.4.3

d. In accordance with the Surveillance Frequency Control Program, ~~during shutdown~~**, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 12 months, during shutdown**, by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% [7% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of rated capacity from its average on previous performance tests, or is below 90% [93% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of the manufacturer's rating.

See ITS 3.8.6

f. In accordance with the Surveillance Frequency Control Program, during shutdown**, by verifying that the battery capacity is at least 80% [87% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of the manufacturer's rating when subjected to a performance discharge test.

SR 3.8.4.3 Note 1

~~Once per 60-month interval this~~ The modified performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1.d. L05

A04

SR 3.8.4.3 Note 2

**Except that the spare battery bank D-52, and any other battery out of service when spare battery bank D-52 is in service may be tested with simulated loads during operation.

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.8.2.1 requires, in part, a 125-volt DC battery bank and a full capacity charger for each of four direct current (DC) electrical sources. ITS Limiting Condition for Operation (LCO) 3.8.4 requires four trains of the electrical power subsystem shall be OPERABLE. This changes the CTS by changing the statement that the following DC electrical sources shall be OPERABLE, then listing the required sources and combining the requirements for the battery, battery charger, and battery charger power supply into one separate Specification stating four trains of the DC electrical power subsystem shall be OPERABLE.

The purpose, in part, of CTS 3.8.2.1 is to define LCO for required DC systems during plant operation. ITS LCO 3.8.4 retains the requirements of CTS 3.8.2.1 associated with required DC sources. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 3.8.2.1, ACTION b states, in part, a Condition where none of the full-capacity chargers associated with a battery bank are OPERABLE. ITS 3.8.4 ACTION A states, in part, a Condition where one required battery charger is inoperable. This changes the CTS by rewording how many battery chargers are required to be OPERABLE with the required number that are inoperable.

Each battery bank has two associated battery chargers. For a train to be considered OPERABLE at least one of these battery charges must be OPERABLE. In CTS, this condition is described as not being met if none of the two chargers are OPERABLE. In ITS, this condition is described as one "required" battery charger inoperable. The intent remains the same. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 4.8.2.1.d requires a battery service test for the batteries. The Surveillance specifies that the testing be performed during shutdown conditions and is modified by footnote **. Footnote ** provides an exception to the "during shutdown" condition stating that except that the spare battery bank D-52, and any other battery out of service when spare battery bank D-52 is in service may be tested with simulated loads during operation. ITS Surveillance Requirement (SR) 3.8.4.3 requires a similar verification of battery capacity and is modified by a similar Note. ITS SR 3.8.4.3, Note 2 states that for the battery service test the Surveillance shall not be performed on in-service batteries in MODE 1, 2, 3, or 4;

however, credit may be taken for unplanned events that satisfy this SR. This changes the CTS requirement by specifying conditions for when the associated vital batteries are tested.

The purpose of CTS 4.8.2.1.d is to verify the OPERABILITY of the DC Batteries. The addition of the Note limiting the conditions under which the Surveillance can be performed is acceptable because performance of the Surveillance on in-service batteries could cause perturbations to the electrical distribution system. Restricting performance of the Surveillance to a battery not in-service during MODES 1, 2, 3, and 4 minimizes challenges to continued steady state operation and, as a result, the unit's safety systems. In addition, providing a statement that credit may be taken if the surveillance is performed during unplanned event does not change the CTS because credit can be taken if it can be shown the unplanned event satisfied the surveillance. This change is designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.2.1 states that the DC electrical sources shall be OPERABLE and lists the details of what constitutes a DC electrical source. ITS LCO 3.8.4 states that Train A and Train B of the DC electrical power subsystem shall be OPERABLE. This changes the CTS by moving the details of what constitutes an OPERABLE DC electrical power train (battery and charger) from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements for the Vital 125 VDC subsystem trains. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. The program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 (*Type 1 – Removing Details of System Design and System Description, Including Design Limits*) CTS 4.8.2.1.a.2) requires verifying total battery terminal voltage to be greater than or equal to 129 volts on float charge and the battery charger(s) output voltage to be ≥ 129 volts. ITS SR 3.8.4.1 requires the verification that the battery terminal voltage is greater than or equal to the minimum established float voltage. This changes the CTS by moving the specific values of the minimum established float voltage from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements that the vital battery terminal voltage be greater than or equal to the minimum established float voltage. This change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA03 (*Type 1 – Removing Details of System Design and System Description, Including Design Limits*) CTS 4.8.2.1.c.3 requires that each 400 amp battery charger (associated with Battery Banks 3A and 4B) will supply at least 400 amperes at ≥ 129 volts for at least 8 hours, and each 300 amp battery charger (associated with Battery Banks 3B and 4A) will supply at least 300 amperes at ≥ 129 volts for at least 8 hours. ITS SR 3.8.4.2 requires the verification that each battery charger supplies ≥ 400 amps (battery chargers associated with Battery Banks 3A and 4B) and ≥ 300 amps (battery chargers associated with Battery Banks 3B and 4A) at greater than or equal to the minimum established float voltage for ≥ 8 hours. This changes the CTS by moving the specific values of the minimum established float voltage from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements that the battery charger voltage be greater than or equal to the minimum established float voltage. This change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 (*Category 4 – Relaxation of Required Action*) CTS 3.8.2.1, ACTION a, states that with one or more of the required battery chargers OPERABLE but not capable of being powered from its associated OPERABLE EDG(s), restore the capability within 72 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.8.4 ACTION C, similarly, states that with one or more required battery charger not capable of being powered from its associated EDG(s), restore the capability within 72 hours or in accordance with the Risk Informed Completion Time Program. CTS 3.8.2.1, ACTION b, states that with one of the required battery banks inoperable, or with none of the full-capacity chargers associated with a battery bank OPERABLE, restore all battery banks to OPERABLE status and at least one charger associated with each battery bank to OPERABLE status within two hours* or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.8.4 ACTION A states, in part, that with one required battery charger on one train inoperable to restore battery charger to OPERABLE status within 72 hours or in accordance with the Risk Informed Completion Time Program (see DOC L02 for change from 2 hours to 72 hours). ITS 3.8.4 Action B states that with one battery on one train inoperable to restore battery to OPERABLE status within 2 hours or within 24 hours if the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated EDG(s) or in accordance with the Risk Informed Completion Time Program. ITS ACTION F states that with the Required Action and associated Completion Time not met to be in MODE 3 within 12 hours and MODE 4 within 18 hours and includes a Note stating that LCO 3.0.4.a is not applicable when entering MODE 4. This changes the CTS by permitting a Required Action end state of HOT SHUTDOWN (MODE 4) rather that an end state of COLD SHUTDOWN (MODE 5).

One purpose of CTS 3.8.2.1, ACTIONs a and b is to provide an end state, a condition that the reactor must be placed in, if the Required Actions, allowing remedial measures to be taken in response to the degraded conditions with continued operation, are not met. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification Limiting Condition for Operation (LCO) is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources and the ability to remove decay heat such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven auxiliary feedwater (AFW) pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific TS conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 TS end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." This proposed change is consistent with NRC approved TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003), noticed for availability by the NRC in the Federal Register (77 FR 27814) on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated TSTF-432-A Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 (*Category 4 - Relaxation of Required Action*) CTS 3.8.2.1 ACTION b states that with one of the required battery banks inoperable, or with none of the full-capacity chargers associated with a battery bank OPERABLE, restore all battery banks to OPERABLE status and at least one charger associated with each battery bank to OPERABLE status within two hours* or in accordance with the Risk Informed Completion Time Program. ITS 3.8.4 ACTION E provides the actions for one DC electrical power train inoperable for reasons other than those covered by ITS 3.8.4 ACTIONs A, B, C, or D. Thus ITS 3.8.4 ACTION E covers both battery and chargers in one train concurrently inoperable. The required DC electrical power source must be restored to OPERABLE status within 2 hours. This changes the CTS by allowing a battery and required charger in the same train to be inoperable concurrently.

This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a Design Basis Accident (DBA) occurring during the repair period. This change allows a battery and required charger on the same train to be inoperable at the same time. This is allowed because the remaining DC electrical power source (i.e., train) remains OPERABLE and is fully redundant to the inoperable train. The remaining DC source can still perform the associated specified safety function. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 (Category 4 – Relaxation of Required Action) CTS 3.8.2.1 ACTION b states, in part, that with none of the full-capacity chargers associated with a battery bank OPERABLE, restore and at least one charger associated with each battery bank to OPERABLE status within two hours or commence a unit shutdown. ITS 3.8.4 ACTION A has been added to provide Actions for the condition with one required battery chargers inoperable. ITS 3.8.4 Required Action A.1 requires the restoration of the battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours. ITS 3.8.4 Required Action A.2 requires the verification that the battery float current is ≤ 2 amps once per 12 hours. ITS 3.8.4 Required Action A.3 requires the restoration of the battery chargers to OPERABLE status within 72 hours. This changes the CTS by extending the time a required battery charger may be inoperable.

The purpose of CTS 3.8.2.1 is to ensure that the two trains of DC electrical power system can supply the associated loads during a design bases accident.

This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with the safe operation under the specified Condition, considering the OPERABLE status of the redundant systems and features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The proposed ITS 3.8.4 ACTION A provides up to a 72-hour restoration time for an inoperable required battery charger. However, this time is contingent on a focused and tiered approach to assuring adequate battery capability is maintained. The priority for the operator is to minimize the battery discharge, which is required to be terminated within 2 hours (ITS 3.8.4 Required Action A.1). Presuming that the battery discharge (if occurring) can be terminated, and that the DC bus remains energized (as required by a separate LCO), there is reasonable basis for extending the restoration time for an inoperable charger beyond the 2-hour limit. The second tiered Action proposes 12 hours to establish that the battery has sufficient capacity to perform its assumed duty cycle (which may involve some recharging of lost capacity that occurred during the initial hours). Given the choice of a unit shutdown in this condition (as currently required) versus a 12-hour determination (at the end of which it is reasonable to assume the battery can be shown to have its assumed capacity) followed by a 72-hour restoration period, is an acceptable relaxation. Because the focus of this allowance is that the battery capacity be preserved and assured, the means of accomplishing this may be a spare battery charger employed within the initial 2 hours, or the degraded charger that continues to float the battery. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04 (*Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria) CTS 4.8.2.1.c.3*) requires, in part, each 400 amp battery charger (associated with Battery Banks 3A and 4B) will supply at least 400 amperes at ≥ 129 volts for at least 8 hours, and each 300 amp battery charger (associated with Battery Banks 3B and 4A) will supply at least 300 amperes at ≥ 129 volts for at least 8 hours. ITS SR 3.8.4.2 includes a similar test. In addition, the SR provides an alternative test method. This test method requires verification that each battery charger can recharge the battery to the fully charge state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state. This changes the CTS by allowing an alternate test method that is not currently allowed.

The purpose of CTS 4.8.2.1.c.3 is to verify the required 125 V DC battery chargers can recharge the respective batteries following a loss of offsite power event. This change is acceptable because the relaxed SR acceptance criteria are adequate to verify the equipment used to meet the LCO can perform its required functions. This alternate test provides an acceptable method for determining charger capability by recharging a discharge battery within 24 hours while supplying the required loads. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L05 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.1.d requires, in part, a verification of the station battery capacity when the battery is subjected to a service test. CTS 4.8.2.1.f allows substitution of a performance discharge test in lieu of the battery service test once per 60-month interval. ITS SR 3.8.4.3 is modified by Note 1 which allows the modified performance discharge test in SR 3.8.6.6 to be performed in lieu of the service test in SR 3.8.4.3. This changes the CTS by allowing a modified performance discharge test to be substituted for a service test for any performance of the Surveillance, instead of the current once per 60 months.

This change is acceptable because the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. The modified performance discharge test is a test of the battery capacity and its ability to support a high rate, short duration load (usually the highest rate of the duty cycle). As stated in the Bases for ITS SR 3.8.6.6, the battery terminal voltage for the modified performance discharge test must remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test. This modified test has been shown to be as effective in determining battery capacity as the standard service test. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

Four Trains of

3.8.2.1 LCO 3.8.4 ~~The Train A and Train B~~ DC electrical power subsystems shall be OPERABLE. 1

INSERT 1

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

ACTIONS

INSERT 2

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action B A. One ~~[or two]~~ required battery charger~~[s]~~ on one ~~subsystem~~ train inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage. AND A.2 Verify battery float current ≤ ~~[~~2~~]~~ amps. AND A.3 Restore required battery charger~~[s]~~ to OPERABLE status.	2 hours Once per ~~[~~12~~]~~ hours ~~[~~72~~]~~ hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~
Action B [B. One ~~[or two]~~ batter[y]~~[ies~~ on one ~~subsystem]~~ train inoperable.	B.1 Restore batter[y]~~[ies]~~ to OPERABLE status.	~~[~~2~~]~~ hours ~~]~~ INSERT 3 ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~

INSERT 4

2 3 1 3 3 1 3 3 2 3 3 4

2 **INSERT 1**

---NOTES---

3.8.2.1 Note * and #

1. All battery chargers required to satisfy the LCO shall be powered from separate MCCs.

2. Inoperability of the required EDG's does not constitute inoperability of the associated battery chargers or battery banks.

----

2 **INSERT 2**

Action a., Action b.

--NOTE--

These ACTIONS apply to both units simultaneously.

----

2 **INSERT 3**

OR

Action b footnote *

24 hours if the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated EDG(s).

4 **INSERT 4**

Action a.	C. One or more required battery chargers OPERABLE but not capable of being powered from its associated EDG(s).	C.1	Restore the capability of being powered from its associated EDG(s).	72 hours OR In accordance with the Risk Informed Completion Time Program
4.8.2.1.a.3)	D. One of two battery chargers connected to the same battery bank supplying < 10 amps	D.1	Demonstrate that the battery charger supplying < 10 amps will accept and supply the DC bus load independent of its associated battery charger.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC xxx ~~C~~ E. One DC electrical power ~~subsystem~~ train inoperable for reasons other than Condition A ~~[or B]~~ , B, C, or D.	~~C~~ E.1 Restore DC electrical power ~~subsystem~~ train to OPERABLE status.	~~[~~2~~]~~ hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	4 3 1 3 3
DOC xxx ~~D~~ F. Required Action and Associated Completion Time not met.	~~D~~ F.1 Be in MODE 3. AND ~~D~~ F.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	~~6~~ 12 hours ~~12~~ 18 hours	4 5 4 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY	
4.8.2.1.a.2) SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 3

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.8.2.1.c.3) DOC L04	SR 3.8.4.2	Verify each battery charger supplies ≥ INSERT 5 ~~[400] amps~~ at greater than or equal to the minimum established float voltage for ≥ ~~[~~8~~]~~ hours. OR Verify each battery charger can recharge the battery to the fully charged state within ~~[~~24~~]~~ hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 3
4.8.2.1.d	SR 3.8.4.3	-----------------------------NOTES----------------------------- 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not ~~normally~~ be performed on in-service batteries in MODE 1, 2, 3, or 4. ~~However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.~~ Credit may be taken for unplanned events that satisfy this SR. --- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	~~[[18] months~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	6 3 3

2 **INSERT 5**

4.8.2.1.c.3) 400 amps (battery chargers associated with Battery Banks 3A and 4B) and ≥ 300 amps (battery chargers associated with Battery Banks 3B and 4A)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.4, DC SOURCES - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes made to reflect the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS).

3. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

4. ITS 3.8.4 ACTIONS C and D have been added that reflects the PTN CTS. Due to these additions the subsequent ACTIONS have been arranged in sequence.

5. ITS 3.8.4 ACTIONS apply to both units simultaneously. The PTN CTS licensing basis is that if a dual unit shut down is required, 18 hours are allowed to sequentially shut both units down. The Completion Times of ITS 3.8.4 ACTION F have been adjusted to allow an additional 6 hours for the sequential shut down.

6. No portion of the battery service test can be performed on in-service batteries in MODES 1, 2, 3, or 4 without making the battery inoperable. The battery service test is normally performed by removing a battery from service and placing the spare battery in-service. Furthermore, the battery service test is not performed in steps, where only part of the test can be performed. Therefore, this part of the Note has been deleted.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources - Operating

BASES

BACKGROUND

The station DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment and preferred AC vital bus power (via inverters). As required by ~~10 CFR 50, Appendix A,~~ GDC ~~17~~ 39 (Ref. 1), the DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3) as described in the UFSAR (Ref. 4). 1 1

INSERT 1

~~The [125/250] VDC electrical power system consists of two independent and redundant safety related Class 1E DC electrical power subsystems ([Train A and Train B]). Each subsystem consists of [two] 125 VDC batteries [(each battery [50]% capacity)], the associated battery charger(s) for each battery, and all the associated control equipment and interconnecting cabling.~~ 1

~~[The 250 VDC source is obtained by use of the two 125 VDC batteries connected in series. Additionally there is [one] spare battery charger per subsystem, which provides backup service in the event that the preferred battery charger is out of service. If the spare battery charger is substituted for one of the preferred battery chargers, then the requirements of independence and redundancy between subsystems are maintained.]~~

During normal operation, the ~~[~~125~~/250]~~ VDC load is powered from the battery chargers with the batteries floating on the system. In case of loss of normal power to the battery charger, the DC load is automatically powered from the station batteries. 2

~~The~~ ~~[~~Train A and Train B~~]~~ of the DC electrical power subsystem~~s~~ provide the control power for its associated Class 1E AC power load group, ~~[~~4.16~~]~~ kV switchgear, and ~~[~~480~~]~~ V load centers. The DC electrical power subsystem~~s~~ also provides DC electrical power to the inverters, which in turn power the AC vital buses. 1 2 1

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System - Operating," and LCO 3.8.10, "Distribution Systems - Shutdown."

1

INSERT 1

The DC power system contains five safety related 125V batteries and four DC distribution panels. Two battery banks (Train A and Train B) are associated with each unit, one 1800 Ampere-Hour (AH) and one 1200 AH, and a spare 1945 AH battery bank that can be substituted, to allow for testing or maintenance, for any of the other four battery banks. Each 1800 AH battery bank has two safety related full capacity 400 ampere solid-state battery chargers associated with it, while each 1200 AH battery bank has two safety related full capacity 300 ampere solid-state battery chargers associated with it. The spare battery bank is normally isolated from the vital DC buses and maintained in a fully charged condition by a non-safety related battery charger. Each battery has been sized to support operation of its required loads for 2 hours without terminal voltage falling below its minimum required value.

One of the two safety related battery chargers associated with each battery is powered by a vital motor control center (MCC) of the same train and unit of its associated battery. The second safety related battery charger for each battery is powered by the vital swing MCC of the opposite unit.

BASES

BACKGROUND (continued)

Each 125~~/250~~ VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each ~~subsystem~~ train is located in an area separated physically and electrically from the other ~~subsystem~~ train to ensure that a single failure in one ~~subsystem~~ train does not cause a failure in a redundant ~~subsystem~~ train. ~~[There is no sharing between redundant Class 1E subsystems, such as batteries, battery chargers, or distribution panels.]~~ 1 1 2

Each battery has adequate storage capacity to meet the duty cycle(s) discussed in the FSAR, Chapter ~~[~~8~~]~~ (Ref 4). The battery is designed with additional capacity above that required by the design duty cycle to allow for temperature variations and other factors. 2

The batteries for Train A and Train B DC electrical power subsystem~~s~~ are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The minimum design voltage limit is ~~[~~105~~/210~~ V~~]~~. 2

The battery cells are of flooded lead acid construction with a nominal specific gravity of ~~[~~1.215~~]~~. This specific gravity corresponds to an open circuit battery voltage of approximately ~~120~~ 124 V for a ~~[58]~~ 60 cell battery (i.e., cell voltage of ~~[~~2.065~~]~~ volts per cell (Vpc)). The open circuit voltage is the voltage maintained when there is no charging or discharging. ~~Once fully charged with its open circuit voltage ≥ [2.065] Vpc, the battery cell will maintain its capacity for [30] days without further charging per manufacturer's instructions~~. Optimal long term performance however, is obtained by maintaining a float voltage ~~[2.20 to 2.25]~~ 2.17 to 2.25 Vpc. This provides adequate over-potential, which limits the formation of lead sulfate and self discharge. The nominal float voltage of ~~[2.22]~~ 2.21 Vpc corresponds to a total float voltage output of ~~[128.8]~~ 132.6 V for a ~~[58]~~ 60 cell battery as discussed in the ~~FSAR, Chapter [8]~~ Vital AC/DC Design Basis Document (Ref. ~~4~~ 5). 1 2 3 2 1 2

Each Train A and Train B DC electrical power subsystem battery charger has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient excess capacity to restore the battery from the design minimum charge to its fully charged state within ~~[~~24~~]~~ hours while supplying normal steady state loads discussed in the U FSAR, Chapter ~~[~~8~~]~~ (Ref. 4). 1 2

The battery charger is normally in the float-charge mode. Float-charge is the condition in which the charger is supplying the connected loads and the battery cells are receiving adequate current to optimally charge the battery. This assures the internal losses of a battery are overcome and the battery is maintained in a fully charged state.

BASES

BACKGROUND (continued)

When desired, the charger can be placed in the equalize mode. The equalize mode is at a higher voltage than the float mode and charging current is correspondingly higher. The battery charger is operated in the equalize mode after a battery discharge or for routine maintenance. Following a battery discharge, the battery recharge characteristic accepts current at the current limit of the battery charger (if the discharge was significant, e.g., following a battery service test) until the battery terminal voltage approaches the charger voltage setpoint. Charging current then reduces exponentially during the remainder of the recharge cycle. Lead-calcium batteries have recharge efficiencies of greater than 95%, so once at least 105% of the ampere-hours discharged have been returned, the battery capacity would be restored to the same condition as it was prior to the discharge. This can be monitored by direct observation of the exponentially decaying charging current or by evaluating the amp-hours discharged from the battery and amp-hours returned to the battery.

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the U FSAR, Chapter ~~[~~6~~]~~ (Ref. ~~5~~ 6) and Chapter ~~[15]~~ 14 (Ref. ~~6~~ 7), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the ~~DG~~ EDGs, emergency auxiliaries, and control and switching during all MODES of operation. 2 1

1

The OPERABILITY of the DC sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining the DC sources OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite AC power ~~or all onsite AC power~~ and 1

b. A worst-case single failure.

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

LCO

The DC electrical power ~~subsystems~~ train, each ~~subsystem~~ train consisting of ~~[two] batteries, battery charger [for each battery]~~ INSERT 2 and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the ~~subsystem~~ train are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. Loss of any DC electrical power ~~subsystem~~ train does not prevent the minimum safety function from being performed (Ref. 4). 1 2

1

1

2 **INSERT 2**

one battery and two battery charges with only one battery charger required to be OPERABLE

BASES

LCO (continued)

train

An OPERABLE DC electrical power ~~subsystem~~ requires all required batteries and respective chargers to be operating and connected to the associated DC bus(es). INSERT 3

1

APPLICABILITY

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure safe unit operation and to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided, and containment integrity and other vital functions are maintained in the event of a postulated DBA.

The DC electrical power requirements for MODES 5 and 6 are addressed in the Bases for LCO 3.8.5, "DC Sources - Shutdown."

ACTIONS

A.1, A.2, and A.3

train required

Condition A represents one ~~subsystem~~ with one ~~[or two]~~ battery charger~~s~~ inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or equal to the minimum established float voltage within 2 hours. This time provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring the battery terminal voltage to greater than or equal to the minimum established float voltage provides good assurance that, within ~~[~~12~~]~~ hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability. 1 2

2

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~A plant that cannot meet the 12 hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).~~
~~---~~

4

1 **INSERT 3**

For a train to be considered OPERABLE requires the following alignments.

a. Train 3A requires 125 VDC Battery Bank 3A or spare battery bank D-52 and associated full capacity charger(s) 3A1 powered by motor control center (MCC) 3C with EDG 3A OPERABLE and/or 3A2 powered by MCC 4D with EDG 4A and 4B OPERABLE.
b. Train 3B requires 125 VDC Battery Bank 3B or spare battery bank D-52 and associated full capacity charger(s) 3B1 powered by MCC 3B with EDG 3B OPERABLE, and/or 3B2 powered by MCC 4D with EDG 4A and 4B OPERABLE.
c. Train 4A requires 125 VDC Battery Bank 4A or spare battery bank D-52 and associated full capacity charger(s) 4A1 powered by MCC 4C with EDG 4A OPERABLE, and/or 4A2 powered by MCC 3D with EDG 3A and 3B OPERABLE.
d. Train 4B requires 125 VDC Battery Bank 4B or spare battery bank D-52 and associated full capacity charger(s) 4B1 powered by MCC 4B with EDG 4B OPERABLE, and/or 4B2 powered by MCC 3D with EDG 3A and 3B OPERABLE.

The LCO is modified by two Notes. Note 1 states that all battery chargers required to satisfy the LCO must be powered from separate MCCs. Note 2 states that inoperability of the required EDG's specified above does not constitute inoperability of the associated battery chargers or battery banks.

The minimum number of battery chargers required to be OPERABLE is based on: 1) a minimum of one battery charger per bus with each powered from a separate 480 volt MCC is required to satisfy the single failure criteria when assuming the failure of a MCC, this restriction prohibits the use of two chargers powered from the same bus for meeting the minimum requirements; and 2) to satisfy the single failure criteria, when assuming a loss-of-offsite power with the loss of an EDG, an additional restriction is stipulated which requires each battery charger to have its associated diesel generators OPERABLE. This requires both EDGs associated with a swing bus battery charger to be OPERABLE.

Provisions for requiring the OPERABILITY of the EDG associated with the battery charger is explicitly specified above. This is because conditions exist where the affected unit would not enter the applicable ACTION statement without this provision. For example, with Unit 3 in MODE 1 and Unit 4 in MODE 5, the OPERABILITY of both EDG 4A and 4B is not required. One could postulate conditions where battery chargers 4A1, 3A2, 3B2, or 4B1 could be used without having an associated OPERABLE EDG, unless specific provisions were made to preclude these conditions.

The Unit 3 DC battery chargers 3A2 and 3B2 are powered from Unit 4 via swing MCC 4D, and the Unit 4 DC battery chargers 4A2 and 4B2 are powered from Unit 3 via swing MCC 3D. Inoperability of the swing capability could impact both units if any of the swing battery chargers is credited for satisfying the LCO. Both EDGs are required to be OPERABLE for a swing battery charger. An inoperable swing function prevents one EDG from supporting that battery charger, and restoration is required within 72 hours or in accordance with the Risk Informed Completion Time Program per ACTION C.

BASES

ACTIONS (continued)

A discharged battery having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within ~~[~~12~~]~~ hours, avoiding a premature shutdown 2
with its own attendant risk.

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting mode, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit mode that is necessary during the recovery period following a battery discharge event that the DC system is designed for.

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within ~~[~~12~~]~~ hours (Required Action A.2). 2

Required Action A.2 requires that the battery float current be verified as less than or equal to ~~[~~2~~]~~ amps. This indicates that, if the battery had been 2
discharged as the result of the inoperable battery charger, it is now fully capable of supplying the maximum expected load requirement. The ~~[~~2~~]~~ amp value is based on returning the battery to ~~[~~95~~]~~% charge and assumes a ~~[~~5~~]~~% design margin for the battery. If at the expiration of the initial ~~[~~12~~]~~ hour period the battery float current is not less than or equal to 2
~~[~~2~~]~~ amps this indicates there may be additional battery problems and the battery must be declared inoperable.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Any licensee wishing to adopt Completion Time greater than 72 hours for Required Action A.3 will need to demonstrate that the longer Completion Time is appropriate for the plant in accordance with the guidance in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," and RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis."~~ 4

BASES

ACTIONS (continued)

~~Alternatively, a 7 day Completion Time can be justified by an acceptable method, such as a regulatory commitment that an alternate means to charge the batteries will be available that is capable of being supplied power from a power source that is independent of the offsite power supply. Otherwise, the 72 hour Completion Time must be adopted.~~ 4

Required Action A.3 limits the restoration time for the inoperable battery charger to ~~[~~72~~]~~ hours. ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g., balance of plant non-Class 1E battery charger). The ~~[~~72~~]~~ hour Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status. 2 2 2

B.1

~~REVIEWER'S NOTES~~

~~1. The 2 hour Completion Times of Required Actions B.1 and C.1 are in brackets. Any licensee wishing to request a longer Completion Time will need to demonstrate that the longer Completion Time is appropriate for the plant in accordance with the guidance in RG 1.177 and RG 1.174.~~

~~2. Condition B is included if Required Action B.1 (one [or two] batter[y][ies on one subsystem] inoperable) and Required Action C.1 (one DC electrical power subsystem inoperable for reasons other than Condition A [or B]) would have different Completion Times. If the plant design supports different Completion Times when a battery is inoperable but the charger is OPERABLE, then Condition B is used. If not, Condition B is deleted and only Condition C is used.~~ 4

Condition B represents one train ~~subsystem~~ with one ~~[or two]~~ batter~~[~~y~~][ies]~~ inoperable. With one ~~[or two]~~ batter~~[~~y~~][ies]~~ inoperable, the DC bus is being supplied by the OPERABLE battery charger~~[s]~~. Any event that results in a loss of the AC bus supporting the battery charger~~[s]~~ will also result in loss of DC to that train ~~subsystem~~. Recovery of the AC bus, especially if it is due to a loss of offsite power, will be hampered by the fact that many of the components necessary for the recovery (e.g., emergency diesel generator control and field flash, AC load shed and emergency diesel generator output circuit breakers, etc.) likely rely upon the batter~~[~~y~~][ies]~~. In addition 1 2 1 1 2

BASES

ACTIONS (continued)

the energization transients of any DC loads that are beyond the capability
of the battery charger~~[s]~~ and normally require the assistance of the 2
batter~~[y][ies]~~ will not be able to be brought online. The ~~[~~2~~]~~ hour limit
allows sufficient time to effect restoration of an inoperable battery given
that the majority of the conditions that lead to battery inoperability (e.g.,
loss of battery charger, battery cell voltage less than ~~[~~2.07~~]~~ V, etc.) are 2
identified in Specifications 3.8.4, 3.8.5, and 3.8.6 together with additional
specific Completion Times. INSERT 4 ~~[~~Alternatively, a Completion Time can be 2
determined in accordance with the Risk Informed Completion Time
Program.~~]~~ 2

INSERT 5

~~C~~ E.1 5

Condition ~~C~~ E represents one ~~subsystem~~ train with a loss of ability to completely 5 1
respond to an event, and a potential loss of ability to remain energized
during normal operation. It is therefore, imperative that the operator's
attention focus on stabilizing the unit, minimizing the potential for
complete loss of DC power to the affected ~~subsystem~~ train. The 2 hour limit is 1
consistent with the allowed time for an inoperable DC distribution
subsystem. ~~[~~Alternatively, a Completion Time can be determined in 2
accordance with the Risk Informed Completion Time Program.~~]~~

If one of the required DC electrical power ~~subsystems~~ train is inoperable for 1
reasons other than Condition A or B (e.g., inoperable battery charger and
associated inoperable battery), the remaining DC electrical power
~~subsystem~~ train has the capacity to support a safe shutdown and to mitigate 1
an accident condition. Since a subsequent worst- case single failure
could, however, result in the loss of the minimum necessary DC electrical
~~subsystems~~ trains to mitigate a worst case accident, continued power operation 1
should not exceed 2 hours. The 2 hour Completion Time is based on
Regulatory Guide 1.93 (Ref. ~~7~~ 8) and reflects a reasonable time to assess
unit status as a function of the inoperable DC electrical power ~~subsystem~~ train 1
and, if the DC electrical power ~~subsystem~~ train is not restored to OPERABLE
status, to prepare to effect an orderly and safe unit shutdown.

~~D~~ F.1 and ~~D~~ F.2 5

If the inoperable DC electrical power ~~subsystem~~ train cannot be restored to 1
OPERABLE status within the required Completion Time, the units must be
brought to a MODE in which overall plant risk is reduced. To achieve this
status, the units must be brought to at least MODE 3 within ~~6~~ 12 hours and to 5
MODE 4 within ~~12~~ 18 hours.

5 INSERT 4

The allowable Completion Time can be extended to 24 hours if the opposite unit is in MODE 5, 6, or defueled to allow for required battery maintenance without requiring both units to be shutdown.

5 INSERT 5

C.1

Condition C represents one or more required battery charger not capable of being powered from its associated EDG(s). To satisfy the single failure criteria, when assuming a loss-of-offsite power with the loss of an EDG, an additional restriction is stipulated which requires each battery charger to have its associated EDGs OPERABLE. This requires both EDGs associated with a swing bus battery charger to be OPERABLE.

The 72 hour Completion Time reflects a reasonable time to assess unit status as a function of the degraded DC electrical power train and, if the DC electrical power train is not restored, to prepare to effect an orderly and safe unit shutdown.

D.1

Condition D represents one of two battery chargers connected to the same battery bank supplying < 10 amps. A battery charger may be considered acceptable when supplying less than 10 amps provided: 1) the battery charger's ability to independently accept and supply the D.C. bus has been verified within the previous 7 days and, 2) D.C. output voltage is ≥ minimum established float voltage volts. Under normal operating conditions, each battery charger is expected to supply loads more than 10 amps and have an output voltage greater than or equal to the minimum established float voltage. Ten amperes represent the minimum current which can be readily observed to establish OPERABILITY. Therefore, verification of a battery charger to supply a minimum of 10 amperes and maintain an output voltage greater than or equal to minimum established float voltage is expected to be a normal method of verifying battery charger OPERABILITY. If a current value from a battery charger is less than 10 amperes, it will be tested to demonstrate its ability to accept and supply the DC loads independent of its associated battery charger.

The 7 day Completion Time reflects a reasonable time to demonstrate the charger's ability to accept and supply the DC loads.

BASES

ACTIONS (continued)

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. ~~8~~ 9). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 8, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective. 1

Required Action ~~D~~ F.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. 1

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly sequential manner and without challenging plant systems. ~~The Completion Time to bring the unit to MODE 5 is consistent with the time required in Regulatory Guide 1.93 (Ref. 7).~~ 1

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state while supplying the continuous steady state loads of the associated DC ~~subsystem~~ train. On float charge, battery cells will receive adequate current to optimally charge the battery. The 1 voltage requirements are based on the nominal design voltage of the battery and are consistent with the minimum float voltage established by the battery manufacturer (~~[2.20]~~ 2.17 Vpc times the number of connected cells or ~~[127.6]~~ 130.2 V for a ~~58~~ 60 cell battery at the battery terminals). This voltage maintains the battery plates in a condition that supports maintaining the grid life. ~~[The 7 day Frequency is consistent with manufacturer recommendations.~~ 2 1 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~OR~~ 2

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 4

SR 3.8.4.2

10 This SR verifies the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. ~~9~~), the battery charger supply is recommended to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied. 1

INSERT 6 This SR provides two options. One option requires that each battery charger be capable of supplying ~~[400] amps~~ at the minimum established float voltage for ~~[~~8~~]~~ hours. The ampere requirements are based on the output rating of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. ~~The time period is sufficient for the charger temperature to have stabilized and to have been maintained for at least [2] hours.~~ 2 6

The other option requires that each battery charger be capable of recharging the battery after a service test coincident with supplying the largest coincident demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur). This level of loading may not normally be available following the battery service test and will need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing criteria since the battery recharge is affected by float voltage, temperature, and the exponential decay in charging current. The battery is recharged when the measured charging current is ≤ ~~[~~2~~]~~ amps. 2

2

INSERT 6

400 amps (battery chargers associated with Battery Banks 3A and 4B) and ≥ 300 amps (battery chargers associated with Battery Banks 3B and 4A)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[The Surveillance Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these [18 month] intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

SR 3.8.4.3

A battery service test is a special test of the battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in Reference 4.

~~[The Surveillance Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 9) and Regulatory Guide 1.129 (Ref. 10), which state that the battery service test should be performed during refueling operations, or at some other outage, with intervals between tests not to exceed [18 months].~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--~~]

BASES

SURVEILLANCE REQUIREMENTS (continued)

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test.

The reason for Note 2 is that performing the Surveillance on an in-service battery would perturb the electrical distribution system and challenge safety systems. ~~This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment.~~ Credit may be taken for unplanned events that satisfy this SR. 5

REFERENCES

1. ~~10 CFR 50, Appendix A,~~ 1967 proposed GDC 39, Emergency Power for Engineered Safety Features ~~GDC 17~~. 1

2. Regulatory Guide 1.6, March 10, 1971.

3. IEEE-308-~~[1978]~~ 1971. 2

4. U FSAR, Chapter ~~[~~8~~]~~. 1 2

5. 5610-003-DB-002, "Vital AC/DC System Design Basis Document, Volume 15.

~~5~~ 6. U FSAR, Chapter ~~[~~6~~]~~. 1 2

~~6~~ 7. U FSAR, Chapter ~~[15]~~ 14. 1 2

~~7~~ 8. Regulatory Guide 1.93, December 1974. 1

~~8~~ 9. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010. 1

~~9~~ 10. Regulatory Guide 1.32, February 1977. 1

~~10. Regulatory Guide 1.129, December 1974.~~ 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.4 BASES, DC SOURCES - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.
3. These battery design values have been deleted because this type of information is not necessary to provide sufficient background for this Specification.
4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.
5. Changes have been made to be consistent with changes made to the Specifications.
6. Removed information related to the basis for the time that a battery charger is required to be capable of supplying its rated amps at the minimum established float voltage, as the Turkey Point Nuclear Generating Station (PTN) current licensing basis does not include time for the charger temperature to stabilize.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.4, DC SOURCES - OPERATING

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 5

ITS 3.8.5, DC SOURCES - SHUTDOWN

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

D.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

A02

trains of the DC electrical power subsystem

LA01

LCO 3.8.5 3.8.2.2 ~~As a minimum,~~ three ~~125 volt battery banks~~, ~~each with at least one associated full capacity charger capable of being powered by an OPERABLE diesel generator,~~ shall be OPERABLE.

M01

Applicability APPLICABILITY: MODES 5* and 6*. , During movement of irradiated fuel assemblies.

M01

ACTION: Add proposed Actions Note

Add proposed Action A

L01

Action B With one or more of the required 125 volt battery banks or required associated full-capacity chargers inoperable or not capable of being powered from an OPERABLE diesel generator, immediately suspend all operations involving ~~CORE ALTERATIONS, positive reactivity changes~~, or movement of irradiated fuel; initiate corrective action to restore the required battery banks and associated full-capacity chargers to OPERABLE status as soon as possible~~, and within 8 hours, depressurize and vent the Reactor Coolant System through at least a 2.2 square inch vent~~.

L02

Add proposed Required Actions B.1 and B.2.2

L03

SURVEILLANCE REQUIREMENTS

Add proposed SR 3.8.5.1 Note

L04

SR 3.8.5.1 4.8.2.2 The above required 125 volt battery banks and associated full-capacity chargers shall be demonstrated OPERABLE in accordance with Specification 4.8.2.1.

LA02

~~*CAUTION - If the opposite unit is in MODES 1, 2, 3 or 4, see the corresponding Limiting Condition for Operation 3.8.2.1.~~

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

ADMINISTRATIVE CHANGES

A01 In the conversion of Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.8.2.2 requires, in part, three 125 volt battery banks, each with at least one associated full capacity charger capable of being powered by an OPERABLE Emergency Diesel Generator (EDG). ITS Limiting Condition for Operation (LCO) 3.8.5 requires three trains of the DC electrical power subsystem to be OPERABLE. This changes the CTS by combining the individual components, battery bank, charger, and EDG requirements into one separate Specification.

The change is acceptable because no changes are made to CTS requirements. The change in format from the CTS to the ITS maintains the technical requirements. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.2.2 is applicable in MODES 5 and 6. ITS 3.8.5 is applicable in MODES 5 and 6 and during movement of irradiated fuel assemblies. A Note has been added to the ACTIONS which states that LCO 3.0.3 is not applicable. This changes the CTS by adding the Applicability of during movement of irradiated fuel assemblies and adds the Note to the ACTIONS stating that LCO 3.0.3 is not applicable.

This change is acceptable because the proposed requirements are necessary to ensure the DC electrical power sources are OPERABLE to support equipment required to be OPERABLE during movement of irradiated fuel assemblies. Movement of fuel normally occurs during MODES 5 and 6, however, it can also occur outside of containment in other plant MODES (MODES 1, 2, 3, and 4) or other conditions (i.e., reactor defueled). This Specification is needed to ensure the appropriate DC electrical power source requirements are specified during fuel handling and ensure the appropriate actions are taken (i.e., stop fuel movement) when the minimum electrical supplies are not available. This change adds a clarification Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable and would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with the ITS 3.8.5 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary since defaulting to LCO 3.0.3 would require the reactor to be shut down but would not require suspension of activities with a potential for releasing radioactive materials. This change is designated as more restrictive because the ITS requires the equipment to be OPERABLE during movement of irradiated fuel assemblies both inside and outside of the containment, not only in MODES 5 and 6.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.2.2 states, in part, three 125 volt battery banks, each with at least one associated full capacity charger capable of being powered by an OPERABLE EDG, shall be OPERABLE. ITS LCO 3.8.5 requires three trains of the DC electrical power subsystem to be OPERABLE. This changes the CTS by moving the details of a train of the DC electrical power subsystem from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the OPERABILITY requirements for electrical power trains. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. The program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 ACTION states, in part, that with one or more of the required associated full-capacity chargers inoperable or not capable of being powered from an OPERABLE EDG, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel; initiate corrective action to restore the required battery banks and associated full-capacity chargers to OPERABLE status as soon as possible. ITS 3.8.5 Required Action A.1 requires the restoration of the battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours. ITS 3.8.5 Required Action A.2 requires the verification that the battery float current is ≤ 2 amps once per 12 hours. ITS 3.8.5 Required Action A.3 requires the restoration of the battery chargers to OPERABLE status within 72 hours. This changes the CTS by extending the time a required battery charger may be inoperable.

The purpose of CTS 3.8.2.2 is to ensure that the three trains of DC electrical power system can supply the associated loads. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with the safe operation under the specified Condition, considering the OPERABLE status of the redundant systems and features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a Design Basis Accident (DBA) occurring during the repair period. The proposed ITS 3.8.5 ACTION A provides up to a 72-hour restoration time for an inoperable required battery charger. However, this time is contingent on a focused and tiered approach to assuring adequate battery capability is maintained. The priority for the operator is to minimize the battery discharge, which is required to be terminated within 2 hours (ITS 3.8.5 Required Action A.1). Presuming that the battery discharge (if occurring) can be terminated, and that the DC bus remains energized (as required by a separate LCO), there is reasonable basis for extending the restoration time for an inoperable charger beyond the 2-hour limit. The second tiered action proposes 12 hours to establish that the battery has sufficient capacity to perform its assumed duty cycle (which may involve some recharging of lost capacity that occurred during the initial hours). Given the choice of a unit shutdown in this condition (as currently required) versus a 12-hour determination (at the end of which it is reasonable to assume the battery can be shown to have its assumed capacity) followed by a 72-hour restoration period, is an acceptable relaxation. Because the focus of this allowance is that the battery capacity be preserved and assured, the means of accomplishing this may be a spare battery charger employed within the initial 2 hours, or the degraded charger that continues to float the battery. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.2.2 ACTION requires that with one or more of the required 125 volt battery banks or required associated full-capacity chargers inoperable or not capable of being powered from an OPERABLE EDG, the Reactor Coolant System (RCS) must be depressurized and vented within 8 hours through a 2.2 square inch vent. ISTS 3.8.5 does not include this Required Action. ITS LCO 3.4.12, "Overpressure Mitigation System," provides requirements for RCS pressure relief when in MODES 4, 5, or 6 to depressurize and establish an RCS vent of ≥ 2.2 square inches within 12 hours if the other pressure relief methods are incapable of limiting pressure. This changes the CTS by relying on ITS LCO 3.4.12 to provide the Required Actions and allowing a longer Completion Time to depressurize the RCS and establish a ≥ 2.2 square inch RCS vent.

The purpose of CTS 3.8.2.2 ACTION is to provide remedial actions to be taken in response to the loss of a required DC train while in MODE 5 or 6. One of these remedial actions is to depressurize and vent the RCS through at least a 2.2 square inch vent, which is being proposed for deletion. This change is acceptable because the CTS 3.8.2.2 action to depressurize and vent the RCS is duplicative of the ITS LCO 3.4.12 Required Action to depressurize and vent the RCS. In addition, ITS 3.4.12 Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of an event occurring during the allowed Completion Time.

This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 ACTION states, in part, that with one or more of the required 125 volt battery banks or required associated full-capacity chargers inoperable or not capable of being powered from an OPERABLE EDG, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel. ITS Required Actions B.1, B.2.1, and B.2.2 provide Actions to be performed under similar conditions. These ITS Required Actions state to declare affected required feature(s) inoperable, or to suspend movement of irradiated fuel assemblies and suspend operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN (SDM) or boron concentration. This changes the CTS Actions by deleting the requirement to suspend CORE ALTERATIONS and to clarify to only suspend positive reactivity additions when it could result in loss of required SDM or boron concentration.

The purpose of the CTS 3.8.2.2 ACTION is to minimize the possibility of an event that may need the DC source to mitigate the consequences of the event. CORE ALTERATIONS is defined in CTS 1.9, in part, as "the movement of any fuel, sources, reactivity control components, or other components affecting reactivity, within the reactor vessel with the head removed and fuel in the vessel." CORE ALTERATIONS only occur when the reactor vessel head is removed and only applies in MODE 6. There is only one accident considered during MODE 6 that involves CORE ALTERATIONS: a fuel handling accident. According to the Standard Review Plan, a fuel handling accident is initiated by the dropping of an irradiated fuel assembly, either in the containment or in the fuel building. Suspension of CORE ALTERATIONS, except for suspension of movement of irradiated fuel, will not prevent or impair the mitigation of a fuel handling accident. CTS 3/4.9.3 requires that the reactor be subcritical for at least 72 hours during movement of irradiated fuel in the reactor vessel and if the reactor is subcritical for less than 72 hours to suspend all operations involving movement of irradiated fuel in the reactor vessel. This decay time (72 hours) is consistent with the assumptions used in the safety analyses, and ensures that the release of fission product radioactivity, subsequent to a fuel handling accident, results in radiological doses that are well within the values specified in 10 CFR 50.67 (Accident Source Term) and Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors." In addition, CTS 3/4.9.3 bases states that recently irradiated fuel is defined as fuel that has occupied part of a critical reactor core within the previous 72 hours. In addition, the limitations on crane travel were removed from CTS by the installation of a single-failure-proof crane.

CTS 3.8.2.2 ACTION also requires that with less than the above minimum required DC electrical power sources OPERABLE, immediately suspend all operations involving positive reactivity changes while ITS Required Actions B.2.2 requires only suspending operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. This change is acceptable because it allows for positive reactivity additions that do not result in loss of required SDM or boron concentration (e.g., water addition or temperature change) assuring continued safe operation. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04 *(Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.2.2 requires that the required 125 volt battery banks and associated full-capacity chargers be demonstrated OPERABLE in accordance with Specification 4.8.2.1. ITS Surveillance Requirement (SR) 3.8.5.1 requires SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3 to be applicable. However, a Note has been added that states ITS SRs 3.8.4.2 and 3.8.4.3 are not required to be performed. This changes the CTS by allowing certain SRs not to be performed.

The reason for the Note is to preclude requiring the OPERABLE DC sources from being discharged below their capability to provide the required power supply or otherwise rendered inoperable during the performance of SRs. It is the intent that these SRs must still be capable of being met, but actual performance is not required. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources - Shutdown

3.8.2.2

LCO 3.8.5

~~[DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."]~~

~~[One~~ Three trains of the DC electrical power subsystem shall be OPERABLE.~~]~~

~~-----REVIEWER'S NOTE-----~~
~~This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only one DC electrical power subsystem to be OPERABLE. Action A the bracketed optional wording in Condition B are also eliminated for this case. The first option above is adopted for plants that have a CTS requiring the same level of DC electrical power subsystem support as is required for power operating conditions.~~
~~----------~~

1

Applicability
DOC M01

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

ACTIONS

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

DOC M01

LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~[~~A. One ~~[or two]~~ required battery charger~~[s~~ on one ~~subsystem]~~ train inoperable. (DOC L01) AND The redundant ~~subsystem~~ required batter~~y~~ies and charger~~[s]~~ OPERABLE.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage. AND A.2 Verify battery float current ≤ ~~[~~2~~]~~ amps. AND	2 hours (2) Once per ~~[~~12~~]~~ hours (3) (2)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3 Restore battery charger~~[s]~~ to OPERABLE status.	~~[~~72~~]~~ hours ~~]~~
Action B. One ~~[~~or more~~]~~ required DC electrical power trains ~~subsystem[s]~~ inoperable ~~[~~for reasons other than Condition A. DOC L03 OR Required Actions and associated Completion Time of Condition A not met~~]~~.	B.1 Declare affected required feature(s) inoperable. OR B.2.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies. AND B.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND B.2.3 Initiate action to restore required DC electrical power trains ~~subsystems~~ to OPERABLE status.	Immediately Immediately Immediately Immediately

2
2
3 2
2
3

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.8.2.2 DOC L04 SR 3.8.5.1	------------------------------NOTE------------------------------ The following SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3. --- For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.2 SR 3.8.4.3	In accordance with applicable SRs

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.5, DC SOURCES - SHUTDOWN

1. The first bracketed optional Improved Standard Technical Specification (ISTS) Limiting Condition for Operation (LCO) 3.8.5 and "Reviewers Note" have been deleted because the current licensing basis requires three DC electrical power battery banks and associated equipment to be OPERABLE not the four required during power operation. The second bracketed option was selected for use even though more than one DC electrical power system train is required to be OPERABLE because of its similarity to the Current Technical Specifications (CTS). ISTS 3.8.5 ACTION A has been retained because three DC electrical power trains are specified in the LCO.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.5 DC Sources - Shutdown

BASES

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

APPLICABLE SAFETY ANALYSES

U The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter ~~[~~6~~]~~ (Ref. 1) and Chapter ~~[15]~~ 14 (Ref. 2), assume that Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators, emergency auxiliaries, and control and switching during all MODES of operation. 2 1

The OPERABILITY of the DC subsystem~~s~~ is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. 2

The OPERABILITY of the minimum DC electrical power sources during MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 1

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident ~~[involving handling recently irradiated fuel. Due to radioactive decay, DC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~. 1

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many DBAs that are analyzed in MODES ~~[~~1, 2, 3, and 4~~]~~ have no specific analyses in MODES ~~[~~5 and 6~~]~~ because the energy contained within the reactor pressure 1

BASES

APPLICABLE SAFETY ANALYSES (continued)

boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case DBAs which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an Industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

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

LCO

Three trains of the ~~The~~ DC electrical power subsystem~~s~~, ~~[~~each required ~~]~~ ~~[the required]~~ train ~~[subsystem~~ consisting of ~~two batteries, one battery charger per battery~~ INSERT 1, and the corresponding control equipment and interconnecting cabling within the subsystem, ~~[are]~~ ~~[is]~~ required to be OPERABLE ~~to support [required] [one] subsystem[s] of the distribution systems [required OPERABLE by LCO 3.8.10, "Distribution Systems - Shutdown."]~~ This ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~[~~involving handling recently irradiated fuel~~]~~). 2 1 2 1 1

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, provide assurance that: 1

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core,

1 **INSERT 1**

one 125 volt battery bank, at least one associated full capacity charger capable of being powered by an OPERABLE diesel generator

BASES

APPLICABILITY (continued)

b. Required features needed to mitigate a fuel handling accident ~~[involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~ are available, 1

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

The DC electrical power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.4.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

<u>A.1, A.2, and A.3</u>

~~-----REVIEWER'S NOTE-----~~
~~ACTION A is included only when plant-specific implementation of LCO 3.8.5 includes the potential to require both subsystems of the DC System to be OPERABLE. If plant-specific implementation results in LCO 3.8.5 requiring only one subsystem of the DC System to be OPERABLE, then ACTION A is omitted and ACTION B is renumbered as ACTION A.~~
~~----------~~ 3

Condition A represents one train ~~subsystem~~ with one required ~~[or two]~~ battery charger~~s~~ inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or equal to the minimum established float voltage within 2 hours. This time provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring 2 1

BASES

ACTIONS (continued)

the battery terminal voltage to greater than or equal to the minimum established float voltage provides good assurance that, within ~~[~~12~~]~~ hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability.

~~----------REVIEWER'S NOTE----------~~
~~A plant that cannot meet the 12 hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).~~ 3
~~--~~

A discharged battery having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus, there is good assurance of fully recharging the battery within ~~[~~12~~]~~ hours, avoiding a premature shutdown 1
with its own attendant risk.

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting mode, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit mode that is necessary during the recovery period following a battery discharge event that the DC system is designed for.

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within ~~[~~12~~]~~ hours (Required Action A.2). 1

Required Action A.2 requires that the battery float current be verified as less than or equal to ~~[~~2~~]~~ amps. This indicates that, if the battery had been 1
discharged as the result of the inoperable battery charger, it has now

BASES

ACTIONS (continued)

been fully recharged. If at the expiration of the initial ~~[~~12~~]~~ hour period the battery float current is not less than or equal to ~~[~~2~~]~~ amps this indicates there may be additional battery problems and the battery must be declared inoperable. 1

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Any licensee wishing to adopt a Completion Time greater than 72 hours for Required Action A.3 will need to demonstrate that the Completion Time is appropriate for the plant in accordance with the guidance in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." Otherwise, the 72 hour Completion Time must be adopted.~~ 3
~~---~~

Required Action A.3 limits the restoration time for the inoperable battery charger to ~~[~~72~~]~~ hours. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g., balance of plant non-Class 1E battery charger). The ~~[~~72~~]~~ hour Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status. 1 1

<u>B.1, B.2.1, B.2.2, and B.2.3</u>

~~[If two subsystems are required by LCO 3.8.10, the remaining subsystem with DC power available may be capable of supporting sufficient systems to allow continuation of [recently] irradiated fuel movement].~~ By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCO ACTIONS. In many instances this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend movement of ~~[~~recently~~]~~ irradiated fuel assemblies, and operations involving positive reactivity additions) that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM. 1 1

BASES

ACTIONS (continued)

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC electrical power subsystem[s] and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required DC electrical power subsystems should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

SR 3.8.5.1 requires performance of all Surveillances required by SR 3.8.4.1 through SR 3.8.4.3. Therefore, see the corresponding Bases for LCO 3.8.4 for a discussion of each SR.

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DC sources from being discharged below their capability to provide the required power supply or otherwise rendered inoperable during the performance of SRs. It is the intent that these SRs must still be capable of being met, but actual performance is not required.

REFERENCES

1. U FSAR, Chapter [6]. 2 1
2. U FSAR, Chapter ~~[15]~~ 14. 2 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.5 BASES, DC SOURCES - SHUTDOWN

1. The Improved Standard Technical Specification (ISTS) contain bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.5, DC SOURCES - SHUTDOWN

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 6

ITS 3.8.6, BATTERY PARAMETERS

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3/4.8.2 D.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 A02

3.8.2.1 The following D.C. electrical sources shall be OPERABLE:*#

a. 125-volt D.C. Battery Bank 3A or spare battery bank D-52 and associated full capacity charger(s)
   1) 3A1 powered by motor control center (MCC) 3C with EDG 3A OPERABLE, or
   2) 3A2 powered by MCC 4D with EDG 4A and 4B OPERABLE, or
   3) 3A1 powered by MCC 3C with EDG 3A OPERABLE and 3A2 powered by MCC 4D with EDG 4A and 4B OPERABLE,

b. 125-volt D.C. Battery Bank 3B or spare battery bank D-52 and associated full capacity charger(s)
   1) 3B1 powered by MCC 3B with EDG 3B OPERABLE, or
   2) 3B2 powered by MCC 4D with EDG 4A and 4B OPERABLE, or
   3) 3B1 powered by MCC 3B with EDG 3B OPERABLE and 3B2 powered by MCC 4D with EDG 4A and 4B OPERABLE,

c. 125-volt D.C. Battery Bank 4A or spare battery bank D-52 and associated full capacity charger(s)
   1) 4A1 powered by MCC 4C with EDG 4A OPERABLE, or
   2) 4A2 powered by MCC 3D with EDG 3A and 3B OPERABLE, or
   3) 4A1 powered by MCC 4C with EDG 4A OPERABLE and 4A2 powered by MCC 3D with EDG 3A and 3B OPERABLE,

See ITS 3.8.4

d. 125-volt D.C. Battery Bank 4B or spare battery bank D-52 and associated full capacity charger(s)
   1) 4B1 powered by MCC 4B with EDG 4B OPERABLE, or
   2) 4B2 powered by MCC 3D with EDG 3A and 3B OPERABLE, or
   3) 4B1 powered by MCC 4B with EDG 4B OPERABLE and 4B2 powered by MCC 3D with EDG 3A and 3B OPERABLE.

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

Add proposed LCO 3.8.6 Applicability A02

ACTION:

Add proposed ACTIONS Note A03

a. With one or more of the required battery chargers OPERABLE but not capable of being powered from its associated OPERABLE diesel generator(s), restore the capability within 72 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously.

See ITS 3.8.4

Add proposed ACTIONS A, B, C, D, E, and F L01

---

* All battery chargers required to satisfy the LCO shall be powered from separate MCCs.

See ITS 3.8.4

\# Inoperability of the required EDG's specified in the LCO requirements below does not constitute inoperability of the associated battery chargers or battery banks.

D.C. SOURCES

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

See ITS 3.8.4

b. With one of the required battery banks inoperable, or with none of the full-capacity chargers associated with a battery bank OPERABLE, restore all battery banks to OPERABLE status and at least one charger associated with each battery bank to OPERABLE status within two hours* or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and its associated full capacity charger(s) shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that:

SR 3.8.6.1 SR 3.8.6.2 1) The parameters in Table 4.8-2 meet the Category A limits, and

See ITS 3.8.4

2) The total battery terminal voltage is greater than or equal to 129 volts on float charge and the battery charger(s) output voltage is ≥ 129 volts, and

3) If two battery chargers are connected to the battery bank, verify each battery charger is supplying a minimum of 10 amperes, or demonstrate that the battery charger supplying less than 10 amperes will accept and supply the D.C. bus load independent of its associated battery charger.

b. In accordance with the Surveillance Frequency Control Program ~~and within 7 days after a battery discharge with battery terminal voltage below 105 volts (108.6 volts for spare battery D-52), or battery overcharge with battery terminal voltage above 143 volts,~~ by verifying that: L02

SR 3.8.6.3 SR 3.8.6.5 1) The parameters in Table 4.8-2 meet the Category B limits,

SR 3.8.6.4 2) The average electrolyte temperature of every sixth cell is above 60°F, and

See ITS 5.5.16

3) There is no visible corrosion at either terminals or connectors, or verify battery connection resistance is:

Battery 3B, 4A	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 29 ≤ 30 ≤ 125 ≤ 1958
Battery 3A, 4B, D-52	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 35 ≤ 40 ≤ 125 ≤ 2463

c. In accordance with the Surveillance Frequency Control Program by verifying that:

1) The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

*Can be extended to 24 hours if the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated diesel generator(s).

See ITS 3.8.4

D.C. SOURCES

See ITS 5.5.16

SURVEILLANCE REQUIREMENTS (Continued)

2) The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material,

3) Each 400 amp battery charger (associated with Battery Banks 3A and 4B) will supply at least 400 amperes at ≥ 129 volts for at least 8 hours, and each 300 amp battery charger (associated with Battery Banks 3B and 4A) will supply at least 300 amperes at ≥ 129 volts for at least 8 hours, and

See ITS 3.8.4

4) Battery Connection resistance is:

See ITS 5.5.16

Battery	Connection	Limit (Micro-Ohms)
Battery 3B, 4A	inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	≤ 29 ≤ 30 ≤ 125 ≤ 1958
Battery 3A, 4B, D-52	Connection inter-cell / termination inter-cell (brace locations) transition cables or total battery connections	Limit (Micro-Ohms) ≤ 35 ≤ 40 ≤ 125 ≤ 2463

See ITS 3.8.4

d. In accordance with the Surveillance Frequency Control Program, during shutdown**, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

Add proposed SR 3.8.6.6 Note A04

SR 3.8.6.6, second Frequency

e. At least once per 12 months, ~~during shutdown**~~, by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% [7% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of rated capacity from its average on previous performance tests, or is below 90% [93% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of the manufacturer's rating~~.

LA01

Add proposed SR 3.8.6.6 Note A04

SR 3.8.6.6, first Frequency

f. In accordance with the Surveillance Frequency Control Program, ~~during shutdown**~~, by verifying that the battery capacity is at least 80% [87% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of the manufacturer's rating when subjected to a performance discharge test. Once per 60-month interval this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1.d.

See ITS 3.8.4

Add proposed SR 3.8.6.6 third Frequency L03

Add proposed SR 3.8.6.6 Note A04

SR 3.8.6.6 Note

~~**Except that the spare battery bank D-52, and any other battery out of service when spare battery bank D-52 is in service may be tested with simulated loads during operation.~~

TABLE 4.8-2

BATTERY SURVEILLANCE REQUIREMENTS

L01 L04 L05 LA02 L06

		CATEGORY A~~(1)~~	CATEGORY B~~(2)~~	
	PARAMETER	LIMITS FOR EACH DESIGNATED PILOT CELL	LIMITS FOR EACH CONNECTED CELL	ALLOWABLE~~(3)~~ VALUE FOR EACH CONNECTED CELL
SR 3.8.6.3	Electrolyte Level	~~>Minimum level indication mark, and < ¼" above maximum level indication mark~~	~~>Minimum level indication mark, and < ¼" above maximum level indication mark~~ Greater than or equal to the minimum established design limits	~~Above top of plates, and not overflowing~~
SR 3.8.6.2, SR 3.8.6.5	Float Voltage	≥ ~~2.13~~ 2.07 volts	≥ 2.13 volts(6)	≥ 2.07 volts
SR 3.8.6.1	~~Specific Gravity (4)~~	~~≥ 1.200~~(5)	~~≥ 1.195~~	~~Not more than 0.020 below the average of all connected cells~~
			~~Average of all Connected cells > 1.205~~	~~Average of all connected cells ≥ 1.195(5)~~

See ITS 5.5.16

L07

TABLE NOTATIONS

~~(1) For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.~~

~~(2) For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.~~

~~(3) Any Category B parameter not within its allowable value indicates an inoperable battery.~~

L01

~~(4) Corrected for electrolyte temperature and level.~~ L07

SR 3.8.6.1 (5) Or battery charging current is less than 2 amps when on charge.

(6) Corrected for average electrolyte temperature. See ITS 5.5.16

D.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6

A02

3.8.2.2 As a minimum, three 125 volt battery banks, each with at least one associated full capacity charger capable of being powered by an OPERABLE diesel generator, shall be OPERABLE.

See ITS 3.8.5

APPLICABILITY: ~~MODES 5* and 6*.~~

Add proposed LCO 3.8.6 Applicability

A02

ACTION:

Add proposed ACTIONS Note

A03

With one or more of the required 125 volt battery banks or required associated full-capacity chargers inoperable or not capable of being powered from an OPERABLE diesel generator, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel; initiate corrective action to restore the required battery banks and associated full-capacity chargers to OPERABLE status as soon as possible, and within 8 hours, depressurize and vent the Reactor Coolant System through at least a 2.2 square inch vent.

See ITS 3.8.5

Add proposed ACTIONS A, B, C, D, E, and F

L01

SURVEILLANCE REQUIREMENTS

4.8.2.2 The above required 125 volt battery banks and associated full-capacity chargers shall be demonstrated OPERABLE in accordance with Specification 4.8.2.1.

See ITS 3.8.5

*CAUTION - If the opposite unit is in MODES 1, 2, 3 or 4, see the corresponding Limiting Condition for Operation 3.8.2.1.

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.8.2.1 is applicable during MODES 1, 2, 3, and 4. CTS 3.8.2.2 is applicable during MODES 5 and 6. ITS Limiting Condition for Operation (LCO) 3.8.6 requires the Battery parameters for Train A and Train B batteries to be within limits when the associated DC electrical power trains are required to be OPERABLE. This changes the CTS by replacing the actual MODES with the phrase "When the associated DC electrical power trains are required to be OPERABLE."

The purpose of ITS 3.8.6 is to provide battery parameter requirements for safety related batteries. This change combines CTS 3.8.2.1 and CTS 3.8.2.2 requirements for the 125 VDC battery parameters into one Specification. There are no technical changes because of this change since it converts the requirements into the format of the ITS. The proposed LCO states that the required battery's parameters shall be within limits. The proposed Applicability ensures the battery parameter requirements are met when the associated battery is required to be OPERABLE. Any technical changes to the battery parameters are discussed in a Discussion of Change (DOC) specifically associated with that change. Any changes to the LCO and Applicability of the 125 VDC batteries are discussed in the DOCs for ITS 3.8.4 and ITS 3.8.5. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 3.8.2.1 contains a table that describes battery degradation levels where separate actions are taken for each battery depending on the level of degradation. ITS 3.8.6 ACTIONS Note states that separate condition entry is allowed for each battery. This changes the CTS by explicitly stating the intent of CTS.

The purpose of ITS 3.8.6 is to provide battery parameter requirements for safety related batteries. As in CTS, exceeding the battery parameter limits in ITS 3.8.6 is indicative of a degradation of battery capacity but the battery may still be capable of performing its specified safety function (i.e., OPERABLE). Compliance with the Required Actions within the associated Completion Times provides assurance that there is still sufficient battery capacity to perform its specified safety function without considering the battery inoperable. As in CTS, if the battery parameter condition degrades such that the parameter is outside the Conditions allowed or the Required Actions are not accomplished within the associated Completion Time the battery is considered inoperable and the appropriate Condition(s) entered for the equipment the battery supports. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 4.8.2.1.e and CTS 4.8.2.1.f require a battery discharge test for the batteries. The Surveillance specifies that the testing be performed during shutdown conditions and is modified by footnote **. Footnote ** provides an exception to the "during shutdown" condition stating that except for the spare battery bank D-52, and any other battery out of service when spare battery bank D-52 is in service may be tested with simulated loads during operation. ITS Surveillance Requirement (SR) 3.8.6.6 requires a similar verification of battery capacity and is modified by a similar Note. ITS SR 3.8.6.6, Note states that for the battery discharge test the Surveillance shall not be performed on in-service batteries in MODE 1, 2, 3, or 4; however, credit may be taken for unplanned events that satisfy this SR. This changes the CTS requirement by specifying conditions for when the associated batteries are tested.

The purpose of CTS 4.8.2.1.e and CTS 4.8.2.1.f is to verify the OPERABILITY of the DC Batteries. The addition of the Note limiting the conditions under which the Surveillance can be performed is acceptable because performance of the Surveillance on in-service batteries could cause perturbations to the electrical distribution system. Restricting performance of the Surveillance to a battery not in-service during MODES 1, 2, 3, and 4 minimizes challenges to continued steady state operation and, as a result, the unit's safety systems. In addition, providing a statement that credit may be taken if the Surveillance is performed during unplanned event does not change the CTS because credit can be taken if it can be shown the unplanned event satisfied the Surveillance. This change is designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

<u>MORE RESTRICTIVE CHANGES</u>

None

<u>RELOCATED SPECIFICATIONS</u>

None

<u>REMOVED DETAIL CHANGES</u>

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.2.1.e states, in part, that degradation is indicated when the battery capacity drops more than 10% [7% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of rated capacity from its average on previous performance tests, or is below 90% [93% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of the manufacturer's rating. ITS 3.8.6 does not include this description of degradation. This changes the CTS by removing the description of what is indicative of battery degradation.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to perform a performance discharge test of battery capacity to any battery that shows signs of degradation or has reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of service life expected for the application that continues to assure protection of public health and safety. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.2.1.b.1 requires verifying that the parameters in Table 4.8-2 meet the Category B. CTS Table 4.8-2 includes the electrolyte level Category B limits for each connected cell that must be verified of that the battery electrolyte level is > the minimum level indication mark, and ≤ ¼ inch above maximum level indication mark in accordance with the Surveillance Frequency Control Program (SFCP). ITS SR 3.8.6.3 requires a similar Surveillance and specifies the acceptance criteria as "greater than or equal to the minimum established design limits." The minimum established design limits for battery electrolyte level will be placed in the ITS Bases. This changes the CTS by moving the specified limits for this SR to the ITS Bases.

The removal of these details related to SR limits from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. This Category B value of CTS Table 4.8.2 represent appropriate monitoring levels and appropriate preventive maintenance levels for long-term battery quality and extended battery life. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. Furthermore, the battery and its preventive maintenance and monitoring program are under the regulatory requirements of 10 CFR 50.65. This relocation will continue to assure that the battery is maintained at current levels of performance, and that operators appropriately focus on monitoring the battery parameters for degradation. This change is designated as a less restrictive removal of detail change because the Surveillance limits are being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.1 and CTS 3.8.2.2 provide ACTIONS and associated Completion Times for when a 125 V battery is inoperable due to battery parameters not within limits. In addition, CTS Table 4.8.2 provides in the form of Notes (1), (2), and (3), ACTIONS and associated Completions Times when Category A or Category B parameter limits or allowable values are exceeded. In lieu of these current Actions under these conditions, ITS 3.8.6 ACTIONS provide compensatory Required Actions and associated Completion Times when battery parameters are not within limits. This changes the CTS by replacing the current ACTIONS with new compensatory ACTIONS for battery parameters not within limits.

The purpose of CTS 3.8.2.1 and CTS 3.8.1.2 ACTIONS are to provide a finite period for continued operation when a battery is inoperable due to battery parameters not within limits. ITS 3.8.6 ACTIONS also allow a certain amount of time to restore battery parameters to within limits before declaring the associated battery inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to correct degraded conditions. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features including the capacity and capability of remaining systems or features, time for repairs or replacement, and the low probability of a Design Basis Accident (DBA) occurring during the Completion Time. ACTIONS have been added to allow a short period to restore parameters to within limits. ITS 3.8.6 ACTION A covers the condition of one or more batteries with one or more battery cells float voltage less than the specified limit and requires the performance of SR 3.8.4.1 (Verify battery terminal voltage is greater than or equal to the minimum established float voltage) within 2 hours, the performance of SR 3.8.6.1 (Verify each battery float current is ≤ 2 amps) within 2 hours, and restoration of the affected cell voltage to within limits within 24 hours. ITS 3.8.6 ACTION B covers the condition of one or more batteries with float current not within the specified limit and requires the performance of SR 3.8.4.1 within 2 hours and restoration of the battery float current to within limits within 12 hours. ITS 3.8.6 ACTION C covers the condition of one or more batteries with one or more cells electrolyte level less than minimum established design limits and requires the restoration of electrolyte level to above top of plates within 8 hours, verification that there is no evidence of leakage within 12 hours, and restoration of electrolyte level to greater than or equal to the minimum established design limits within 31 days. ITS 3.8.6 ACTION C NOTE requires Required Action C.2 to be completed if electrolyte level was below the top of plates. Because with electrolyte level below the top of the plates there is a potential for dryout and plate degradation, this Note requires verification of no evidence of leakage even if the level is increased above the top of the plates allowing the Condition to be exited. ITS 3.8.6 Required Action C.1 NOTE states that Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of the plates allowing 31 days to restore electrolyte level to greater than or equal to the minimum established design level. ITS 3.8.6 ACTION D covers the condition of one or more batteries with pilot cell electrolyte temperature less than the minimum established design limits and requires the restoration of battery pilot cell temperature to greater than or equal to minimum established design limits within 12 hours. ITS 3.8.6 ACTION E covers the condition of one or more batteries in redundant trains with battery parameters not within limits and requires restoration of the battery parameters for two batteries to within limits within 2 hours. ITS 3.8.6 ACTION F covers the conditions when a Required Action and associated Completion Time of any of the above ACTIONS cannot be met, if one or more batteries with one or more battery cells float voltage and float current are not within limits, or if battery parameters are not within limits for any reason other than Condition A, B, C, D, or E; and requires the immediate declaration that the associated battery is inoperable. The allowances are considered acceptable because only a short period is allowed with battery parameters not within limits. In addition, when one or more batteries in redundant trains have battery parameters not within limit, only 2 hours is allowed to restore at least two battery's parameters before declaring the battery(ies) inoperable. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 7 – Relaxation of Surveillance Frequency)* CTS 4.8.2.1.b requires the performance of several Surveillances within 7 days after a battery discharge (battery terminal voltage below 105 volts (108.6 volts for spare battery D-52), or battery overcharge with battery terminal voltage above 143 volts. ITS 3.8.6 does not require these Surveillances to be performed after a battery discharge or overcharge. This changes the CTS by not including a specific Surveillance Requirement to perform these tests after a discharge or overcharge.

The purpose of the CTS 4.8.2.1.b Frequency is to ensure the batteries remain OPERABLE after a severe battery discharge or overcharge. This change is acceptable because other proposed Surveillance Requirements continue to ensure an acceptable level of equipment reliability. ITS SR 3.8.6.1 requires verification that each battery float current is ≤ 2 amps every 7 days. The float current requirements are based on the float current indicative of a charged battery. Therefore, this Surveillance will detect a discharge condition of the battery. In addition, ITS 5.5.14, "Battery Monitoring and Maintenance Program," requires a program for battery maintenance based on the recommendations of IEEE 450-2010. The requirement to perform these battery preventative maintenance activities are consistent with IEEE 450-2010, and as such, will be maintained in the plant procedures implementing ITS 5.5.15. This change is designated as less restrictive because Surveillances will be performed less frequently under ITS than under CTS.

L03 *(Category 7 – Relaxation of Surveillance Frequency)* CTS 4.8.2.1.e requires an increased Frequency (Annually) from that in CTS 4.8.2.1.f, in accordance with the SFCP (60 months), for battery performance tests if the battery shows signs of degradation or has reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of its expected service life. ITS SR 3.8.6.6 provides two Frequencies when a battery has reached 85% of its expected service life based on whether the battery's remaining capacity is less than 100% or not. If the battery's remaining capacity is less than 100% of the manufactures rating the required discharge test is performed every 12 months (annually). If the battery's remaining capacity is greater than or equal to 100% of the manufacture's rating, then the required discharge test is performed every 24 months. This changes the CTS by relaxing the Frequency of required discharge tests when the battery has reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of its expected service life.

The purpose of CTS 4.8.2.3.2.e is to verify the battery capacity is acceptable on batteries that show signs of degradation or have reached 85% of the service life. ITS 3.8.6.6 provides an alternative Frequency if the battery that has reached 85% of its service life but has not shown signs of degradation and has a capacity of greater than or equal to 100% of the manufacture's rating. This relaxed frequency is acceptable because the battery has not shown signs of degradation, retains greater than or equal to the manufacturer's rated capacity, and is being tested at a more frequent periodicity than a battery that has not reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of the service life expected. Also, IEEE 450-2010 states that if the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two-year intervals is acceptable until the battery shows signs of degradation. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L04 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.1.a.1 requires verifying the battery parameters in Table 4.8.2 meet Category A limits In accordance with the SFCP. CTS Table 4.8.2 Category A contains the parameter 'Electrolyte Level' with the limit for each designated pilot cell set at "> Minimum level indication mark, and ≤ 1/4" above maximum level indication mark." CTS 4.8.2.1.b.1 requires verifying the parameters in Table 4.8-2 meet Category B limits in accordance with the SFCP. CTS Table 4.8.2 Category B contains the parameter 'Electrolyte Level' with the limit for each connected cell set at "> Minimum level indication mark, and ≤ 1/4" above maximum level indication mark." In addition, the Category B electrolyte level Allowable Value for each connected cell (which includes the pilot cells) is above the top of plates, and not overflowing. ITS SR 3.8.6.3 requires verifying each battery connected cell electrolyte level is greater than or equal to minimum established design limits in accordance with the SFCP. This changes the CTS by deleting the requirement to verify the pilot cells electrolyte level is within limits in accordance with the SFCP.

The purpose of CTS Category A limit on pilot cell electrolyte level and its related Frequency is to represent appropriate monitoring levels and appropriate preventive maintenance levels for long-term battery quality and extended battery life. The definition of LCO presented in 10 CFR 50.36 states that LCOs are "the lowest functional capability or performance levels of equipment required for safe operation of the facility." As such, the Category A value for cell electrolyte level does not reflect the 10 CFR 50.36 criteria for LCOs. ITS 5.5.14, "Battery Monitoring and Maintenance Program," requires a program providing controls for battery restoration and maintenance that shall be in accordance with IEEE 450-2010 as endorsed by Regulatory Guide (RG) 1.129, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," Revision 3, with exceptions and other provisions. IEEE 450-2010 contains, in part, guidance on monitoring electrolyte level with the intention of providing recommended maintenance, test schedules, and testing procedures that can be used to optimize the life and performance of permanently installed, vented lead-acid storage batteries used for standby power applications. These values and actions associated with restoration are being replaced by a licensee-controlled program, required and described in Technical Specification Section 5.5, "Programs and Manuals," and titled the "Battery Monitoring and Maintenance Program." This provides adequate assurance that necessary battery parameter values will continue to be controlled and actions will be implemented if the battery parameter values are not met. Furthermore, the battery and its preventive maintenance and monitoring program are under the regulatory requirements of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L05 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.1.b.1 requires verifying the battery parameters in Table 4.8.2 meet Category B limits in accordance with the SFCP. CTS Table 4.8.2 Category B contains the parameter 'Electrolyte Level' with an Allowable Value for each connected cell of "Above top of plates, and not overflowing." In addition, Note (3) states that with any Category B parameter not within its Allowable Value indicates an inoperable battery. ITS SR 3.8.6.3 requires verifying each battery connected cell electrolyte level is greater or equal to minimum established design limits in accordance with the SFCP. ITS 3.8.6 Required Action C.1 requires restoration of battery's electrolyte level to above the top of the plates within 8 hours or Condition F is entered with a Required Action to declare the associated battery inoperable immediately. This changes the CTS by relaxing the requirement of immediately declaring the battery inoperable and allows 8 hours to restore the battery parameter to within limits before declaring the battery inoperable.

The purpose of CTS Category B Allowable Value on each connected cell for electrolyte level and its related Frequency is to ensure that the plates suffer no physical damage and maintain adequate electron transfer capability to ensure the battery can perform its specified safety function and maintain a margin of safety. Electrolyte level cannot decrease to below the top of the plates or be overflowing unless it has exceeded the limits prescribed in ITS SR 3.8.6.3. If battery electrolyte level is found outside the minimum established design limits ITS 3.8.6 Condition C is entered with Required Action C.1 requiring restoring electrolyte level to above the top of the plates within 8 hours or declaring the battery inoperable. With electrolyte level below the top of the plates there is a potential for dryout and plate degradation. ITS 5.5.14, Battery Monitoring and Maintenance Program," requires a program providing controls for battery restoration and maintenance that shall be in accordance with IEEE 450-2010 as endorsed by Regulatory Guide 1.129, Revision 3, with exceptions and other provisions. IEEE 450-2010 contains, in part, guidance on monitoring electrolyte level with the intention of providing recommended maintenance, test schedules, and testing procedures that can be used to optimize the life and performance of permanently installed, vented lead-acid storage batteries used for standby power applications. New Required Actions C.1 and C.2 restore the electrolyte level and ensure that the cause of the loss of electrolyte level is not due to a leak in the battery cell jar. These changes, with the additional requirements in the Battery Monitoring and Maintenance Program, are adequate to ensure that minimum electrolyte levels are maintained. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L06 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.1.a.1 requires verifying the battery parameters in Table 4.8.2 meet Category A limits in accordance with the SFCP. CTS Table 4.8.2 Category A contains the parameter 'Float Voltage' with a limit for each designated pilot cell of "≥ 2.13 volts." ITS SR 3.8.6.2 requires the verification that each pilot cell voltage is ≥ 2.07 V. ITS 3.8.6 ACTION A addresses the condition in which one or more batteries with one or more battery cells float voltage less than 2.07 V. Once

ACTION A has been entered, the battery cell is considered degraded and the Required Actions are to perform SR 3.8.4.1 and SR 3.8.6.1 within 2 hours. This changes the CTS by reducing the acceptance criteria for pilot cell voltage limits from ≥ 2.13 V to ≥ 2.07 V.

The purpose of the proposed Surveillance limit in ITS SR 3.8.6.2 is to ensure the cell voltages are greater than or equal to the short-term absolute minimum voltage. A cell voltage of 2.07 V or below under float conditions may indicate internal cell problems while prolonged operation of cells below 2.13 V has the potential to reduce the life expectancy of cells. This change is acceptable because it has been determined that the relaxed SR acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by reducing the acceptance criteria for pilot cell voltage limits from ≥ 2.13 V to ≥ 2.07 V. At this lower voltage, the cell can still perform its function. The battery is considered OPERABLE when the battery voltage on float is greater than or equal to the minimum establish voltage of ITS SR 3.8.4.1. This change is acceptable since ITS 5.5.14, "Battery Monitoring and Maintenance Program," has been added and requires actions to be taken to restore battery cells with float voltage < 2.13 V. This program will help ensure the cell voltage will not approach the limit of 2.07 V and that the minimum established voltage of ITS SR 3.8.4.1 is maintained. This change is designated as less restrictive because less stringent SRs are being applied in the ITS than were applied in the CTS.

L07 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.1.a.1 requires the verification that the pilot cell specific gravity is within the Category A limits of Table 4.8-2, as modified by footnote (4) and CTS 4.8.2.1.b.1 requires the verification that the connected cell specific gravity is within the Category B limits of Table 4.8-2, as modified by footnote (4). As indicated in CTS Table 4.8-2 (footnote (4)), the specific gravity limit must be corrected for electrolyte temperature and level. ITS 3.8.6 does not include these Surveillances. This changes the CTS by deleting the Surveillances to verify battery cell specific gravity.

The purpose of CTS 4.8.2.1.a.1, and 4.8.2.1.b.1 is to ensure the state of charge of each battery cell. This change is acceptable because the deleted SRs are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. While the specified Surveillances have been deleted, the alternative Surveillances of CTS Table 4.8-2, footnote (5) to verify battery float current is < 2 amps is retained in ITS as SR 3.8.6.1, with modifications to the acceptance criteria to reflect the information provided by the battery manufacturer. IEEE 450-2010 states that the most accurate indicator of return to full charge is a stabilized charging or float current. Specific gravity readings may not be accurate when the battery is on charge following a discharge. Therefore, ITS SR 3.8.6.1 gives a better indication of the overall battery condition. This change is designated as less restrictive because Surveillances which are required in CTS will not be required in ITS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

DOC A02 LCO 3.8.6 Battery parameters for ~~Train A and Train B batteries~~ the 125 VDC electrical power subsystem shall be within limits. 1

DOC A02 APPLICABILITY: When associated DC electrical power ~~subsystems~~ trains are required to be OPERABLE. 1

ACTIONS

--NOTE--

DOC A03 Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L01 A. One ~~[or two]~~ or more required batter~~[y]~~[ies ~~on one subsystem]~~ with one or more battery cells float voltage < ~~[~~2.07~~]~~ V.	A.1 Perform SR 3.8.4.1.	2 hours 2
	<u>AND</u>	
	A.2 Perform SR 3.8.6.1.	2 hours 2
	<u>AND</u>	
	A.3 Restore affected cell voltage ≥ ~~[~~2.07~~]~~ V.	24 hours 2
DOC L01 B. One ~~[or two]~~ or more required batter~~[y]~~[ies ~~on one subsystem]~~ with float current > ~~[~~2~~]~~ amps.	B.1 Perform SR 3.8.4.1.	2 hours 2
	<u>AND</u>	
	B.2 Restore battery float current to ≤ ~~[~~2~~]~~ amps.	~~[~~12~~]~~ hours 2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L01 C. -----------NOTE------------- Required Action C.2 shall be completed if electrolyte level was below the top of plates. -------------------------------- One ~~[or two]~~ or more required batter~~[y][~~ies ~~on one subsystem]~~ with one or more cells electrolyte level less than minimum established design limits.	-----------------NOTE------------------ Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates. ---	
	C.1 Restore electrolyte level to above top of plates.	8 hours 2
	AND	
	C.2 Verify no evidence of leakage.	12 hours
	AND	
	C.3 Restore electrolyte level to greater than or equal to minimum established design limits.	31 days
DOC L01 D. One ~~[or two]~~ or more required batter~~[y][~~ies ~~on one subsystem]~~ with pilot cell electrolyte temperature less than minimum established design limits.	D.1 Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours 2
DOC L01 E. One or more required batteries in redundant ~~subsystems~~ trains with battery parameters not within limits.	E.1 Restore battery parameters for batteries in ~~one subsystem~~ two trains to within limits.	2 hours 1

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC L01	F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One ~~[or two]~~ or more required batter~~[y][~~ies ~~on one subsystem]~~ with one or more battery cells float voltage < ~~[~~2.07~~]~~ V and float current > ~~[~~2~~]~~ amps. INSERT 1	F.1	Declare associated battery inoperable.	Immediately

2 2 2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.8.2.1.a.1)	SR 3.8.6.1	------------------------------NOTE------------------------------ Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. --- Verify each required battery float current is ≤ ~~[~~2~~]~~ amps.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~

2 2

3 **INSERT 1**

DOC L01 OR

Battery parameters not within limits for any reason other than Condition A, B, C, D, or E.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.8.2.1.a.1)	SR 3.8.6.2	Verify each battery pilot cell float voltage is ≥ ~~[~~2.07~~]~~ V.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2
4.8.2.1.b.1)	SR 3.8.6.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2
4.8.2.1.b.2)	SR 3.8.6.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	~~[31 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2
4.8.2.1.b.1)	SR 3.8.6.5	Verify each battery connected cell float voltage is ≥ ~~[~~2.07~~]~~ V.	~~[92 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	2 2

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.2.1.e, 4.8.2.1.f SR 3.8.6.6	on in-service batteries -----------------------------NOTE----------------------------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced~~. Credit may be taken for unplanned events that satisfy this SR. --- INSERT 2 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~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ AND 12 months when battery shows degradation, or has reached ~~[85]~~ INSERT 3 % of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached ~~[85]~~ INSERT 3 % of the expected life with capacity ≥ 100% of manufacturer's rating

4 2 2 2 2

DOC L03

1

INSERT 2

80% (87% for Batteries 4B and D52 (Spare) when used in place of Battery 4B)

1

INSERT 3

85% (75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.6, BATTERY PARAMETERS

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. ISTS Surveillance Requirement (SR) 3.8.6.6 requires a battery performance discharge or modified performance discharge test to be performed and provides acceptance criteria. However, no ACTION is provided in the ISTS 3.8.6 ACTIONS for when this SR is not met. Therefore, in the ISTS, Limiting Condition for Operation (LCO) 3.0.3 would be entered. To preclude an LCO 3.0.3 entry, ISTS 3.8.6 Condition F has been modified to cover other reasons the battery parameters may not be met other than the conditions listed, e.g., when SR 3.8.6.6 is not met. ITS 3.8.6 ACTION F will require the associated battery to be declared inoperable. This is also consistent with the current Technical Specification requirements.

4. The Note modifying ISTS SR 3.8.6.6 has be changed to reflect that no portion of the battery performance discharge or modified performance discharge test can be performed on an in-service battery in MODES 1, 2, 3, or 4 without making the battery inoperable. This test is normally performed by removing the battery from service and placing the spare vital battery in-service. Furthermore, the test is not performed in steps, where only part of the test can be performed.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Parameters

BASES

BACKGROUND

This LCO delineates the limits on battery float current as well as electrolyte temperature, level, and float voltage for the DC power subsystem batteries. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources - Operating," and LCO 3.8.5, "DC Sources - Shutdown." In addition to the limitations of this Specification, the ~~[licensee controlled program]~~ Battery Monitoring and Maintenance Program also implements a program specified in Specification 5.5.~~16~~ 14 for monitoring various battery parameters. 4 1

The battery cells are of flooded lead acid construction with a nominal specific gravity of ~~[~~1.215~~]~~. This specific gravity corresponds to an open circuit battery voltage of approximately ~~120~~ 124 V for ~~[58]~~ 60 cell battery (i.e., cell voltage of ~~[~~2.065~~]~~ volts per cell (Vpc)). The open circuit voltage is the voltage maintained when there is no charging or discharging. ~~Once fully charged with its open circuit voltage ≥ [2.065] Vpc, the battery cell will maintain its capacity for [30] days without further charging per manufacturer's instructions.~~ Optimal long term performance however, is obtained by maintaining a float voltage ~~[2.20~~ 2.17 to 2.25~~]~~ Vpc. This provides adequate over-potential which limits the formation of lead sulfate and self discharge. ~~The nominal float voltage of [2.22] Vpc corresponds to a total float voltage output of [128.8] V for a [58] cell battery as discussed in the FSAR, Chapter [8] (Ref. 2)~~. 1 2 1 2

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter ~~[~~6~~]~~ (Ref. 3) and Chapter ~~[15]~~ 14 (Ref. 4), assume Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the ~~DGs~~ emergency diesel generators, emergency auxiliaries, and control and switching during all MODES of operation. 2 1 3

The OPERABILITY of the DC subsystem~~s~~ is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one ~~subsystem~~ train of DC sources OPERABLE during accident conditions, in the event of: 3 3

a. An assumed loss of all offsite AC power ~~or all onsite AC power~~ and 3

b. A worst-case single failure.

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

BASES

LCO

Battery parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Battery parameter limits are conservatively established, allowing continued DC electrical system function even with limits not met. Additional preventative maintenance, testing, and monitoring performed in accordance with the ~~[licensee controlled program]~~ Battery Monitoring and Maintenance Program is conducted as specified in Specification 5.5.~~16~~14. 4 1

APPLICABILITY

The battery parameters are required solely for the support of the associated DC electrical power subsystem~~s~~. Therefore, battery parameter limits are only required when the DC power source is required to be OPERABLE. Refer to the Applicability discussion in Bases for LCO 3.8.4 and LCO 3.8.5. 3

ACTIONS

A.1, A.2, and A.3

With one or more cells in one or more batteries ~~in one subsystem~~ 4
< ~~[~~2.07~~]~~ V, the battery cell is degraded. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage (SR 3.8.4.1) and of the overall battery state of charge by monitoring the battery float charge current (SR 3.8.6.1). This assures that there is still sufficient battery capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of one or more cells in one or more batteries < ~~[~~2.07~~]~~ V, and continued operation is permitted for a limited period up to 24 hours. 1 1

Since the Required Actions only specify "perform," a failure of SR 3.8.4.1 or SR 3.8.6.1 acceptance criteria does not result in this Required Action not met. However, if one of the SRs is failed the appropriate Condition(s), depending on the cause of the failures, is entered. If SR 3.8.6.1 is failed then there is not assurance that there is still sufficient battery capacity to perform the intended function and the battery must be declared inoperable immediately.

B.1 and B.2

One or more batteries ~~in one subsystem~~ with float current > ~~[~~2~~]~~ amps indicates that a partial discharge of the battery capacity has occurred. This may be due to a temporary loss of a battery charger or possibly due to one or more battery cells in a low voltage condition reflecting some loss of capacity. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage. If the terminal voltage is found to be less than the minimum established float voltage there are two possibilities, the battery charger is inoperable or is 4 1

BASES

ACTIONS (continued)

operating in the current limit mode. Condition A addresses charger inoperability. If the charger is operating in the current limit mode after 2 hours that is an indication that the battery has been substantially discharged and likely cannot perform its required design functions. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within ~~[~~12~~]~~ hours (Required Action B.2). The battery must therefore be declared 1
inoperable.

If the float voltage is found to be satisfactory but there are one or more battery cells with float voltage less than ~~[~~2.07~~]~~ V, the associated "OR" 1
statement in Condition F is applicable and the battery must be declared inoperable immediately. If float voltage is satisfactory and there are no cells less than ~~[~~2.07~~]~~ V there is good assurance that, within ~~[~~12~~]~~ hours, the 1
battery will be restored to its fully charged condition (Required Action B.2) from any discharge that might have occurred due to a temporary loss of the battery charger.

~~-----REVIEWER'S NOTE-----~~
~~A plant that cannot meet the 12 hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).~~ 5
~~----------~~

A discharged battery with float voltage (the charger setpoint) across its terminals indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within ~~[~~12~~]~~ hours, avoiding a premature shutdown with its own attendant 1
risk.

If the condition is due to one or more cells in a low voltage condition but still greater than ~~[~~2.07~~]~~ V and float voltage is found to be satisfactory, this 1
is not indication of a substantially discharged battery and ~~[~~12~~]~~ hours is a reasonable time prior to declaring the battery inoperable.

BASES

ACTIONS (continued)

Since Required Action B.1 only specifies "perform," a failure of SR 3.8.4.1 acceptance criteria does not result in the Required Action not met. However, if SR 3.8.4.1 is failed, the appropriate Condition(s), depending on the cause of the failure, is entered.

C.1, C.2, and C.3

With one or more batteries ~~in one subsystem~~ with one or more cells 4
electrolyte level above the top of the plates, but below the minimum established design limits, the battery still retains sufficient capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of electrolyte level not met. Within 31 days the minimum established design limits for electrolyte level must be re-established.

With electrolyte level below the top of the plates there is a potential for dryout and plate degradation. Required Actions C.1 and C.2 address this potential (as well as provisions in Specification 5.5.~~16~~14, Battery Monitoring and Maintenance Program). 4
They are modified by a Note that indicates they are only applicable if electrolyte level is below the top of the plates. Within 8 hours level is required to be restored to above the top of the plates. The Required Action C.2 requirement to verify that there is no leakage by visual inspection and the Specification 5.5.~~16~~14.b item to initiate 4
action to equalize and test in accordance with manufacturer's recommendation are taken from IEEE Standard 450. They are performed following the restoration of the electrolyte level to above the top of the plates. Based on the results of the manufacturer's recommended testing the batter~~[~~y~~][ies]~~ may have to be declared inoperable and the affected cell~~[~~s~~]~~ replaced. 1

D.1

With one or more batteries ~~in one subsystem~~ with pilot cell temperature 4
less than the minimum established design limits, 12 hours is allowed to restore the temperature to within limits. A low electrolyte temperature limits the current and power available. Since the battery is sized with margin, while battery capacity is degraded, sufficient capacity exists to perform the intended function and the affected battery is not required to be considered inoperable solely as a result of the pilot cell temperature not met.

BASES

ACTIONS (continued)

E.1

With one or more batteries in redundant ~~subsystems~~ trains with battery parameters not within limits there is not sufficient assurance that battery capacity has not been affected to the degree that the batteries can still perform their required function, given that redundant batteries are involved. With redundant batteries involved this potential could result in a total loss of function on multiple systems that rely upon the batteries. The longer Completion Times specified for battery parameters on non-redundant batteries not within limits are therefore not appropriate, and the parameters must be restored to within limits on at least one ~~subsystem~~ train within 2 hours. 4

F.1

With one or more batteries with any battery parameter outside the allowances of the Required Actions for Condition A, B, C, D, or E, sufficient capacity to supply the maximum expected load requirement is not assured and the corresponding battery must be declared inoperable. Additionally, discovering one or more batteries ~~in one subsystem~~ with one or more battery cells float voltage less than ~~[~~2.07~~]~~ V and float current greater than ~~[~~2~~]~~ amps, or failure of SR 3.6.6 indicates that the battery capacity may not be sufficient to perform the intended functions. The battery must therefore be declared inoperable immediately. 4 1 4

SURVEILLANCE REQUIREMENTS

SR 3.8.6.1

Verifying battery float current while on float charge is used to determine the state of charge of the battery. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a charged state. The float current requirements are based on the float current indicative of a charged battery. Use of float current to determine the state of charge of the battery is consistent with IEEE-450 (Ref. 1). ~~[The 7 day Frequency is consistent with IEEE-450 (Ref. 1).~~

~~OR~~ 1

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 5

This SR is modified by a Note that states the float current requirement is not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. When this float voltage is not maintained the Required Actions of LCO 3.8.4 ACTION A are being taken, which provide the necessary and appropriate verifications of the battery condition. Furthermore, the float current limit of ~~[~~2~~]~~ amps is established based on the nominal float voltage value and is not directly applicable when this voltage is not maintained.

SR 3.8.6.2 and SR 3.8.6.5

Optimal long term battery performance is obtained by maintaining a float voltage greater than or equal to the minimum established design limits provided by the battery manufacturer, which corresponds to ~~[130.5]~~ 130.2 V at the battery terminals, or ~~[2.25]~~ 2.17 Vpc. This provides adequate over-potential, which limits the formation of lead sulfate and self discharge, which could eventually render the battery inoperable. Float voltages in this range or less, but greater than ~~[~~2.07~~]~~ Vpc, are addressed in Specification 5.5.~~16~~ 14. SRs 3.8.6.2 and 3.8.6.5 require verification that the cell float voltages are equal to or greater than the short term absolute minimum voltage of ~~[~~2.07~~]~~ V. ~~[The Frequency for cell voltage verification every 31 days for pilot cell and 92 days for each connected cell is consistent with IEEE-450 (Ref. 1).~~ 1 4 1

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~-----]~~ 5

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.6.3

The limit specified for electrolyte level ensures that the plates suffer no physical damage and maintains adequate electron transfer capability. ~~[The Frequency of 31 days is consistent with IEEE-450 (Ref. 1).~~ 1

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 5

SR 3.8.6.4

This Surveillance verifies that the pilot cell temperature is greater than or equal to the minimum established design limit (i.e., ~~[40]~~ 60°F). Pilot cell electrolyte temperature is maintained above this temperature to assure the battery can provide the required current and voltage to meet the design requirements. Temperatures lower than assumed in battery sizing calculations act to inhibit or reduce battery capacity. ~~[The Frequency of 31 days is consistent with IEEE-450 (Ref. 1).~~ 1

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 5

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.6.6

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

Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.6.6; however, only the modified performance discharge test may be used to satisfy the battery service test requirements of SR 3.8.4.3.

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

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

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 1) and IEEE-485 (Ref. 5). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% [87% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements. Furthermore, the battery is sized to meet the assumed duty cycle loads when the battery design capacity reaches this ~~[~~80~~]~~% [87% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] limit. 3 1 3

~~[The Surveillance Frequency for this test is normally 60 months.~~ 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~OR~~ 1

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~--]~~

If the battery shows degradation, or if the battery has reached 85% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] 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% [75% for Batteries 4B and D52 (Spare) when used in place of Battery 4B] of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's ratings. Degradation is indicated, according to IEEE-450 (Ref. 1), 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. 1). 3 3 1

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from ~~normally~~ performing the Surveillance in MODE ~~1 or 2~~ 1, 2, 3, or 4 is further amplified to allow the performance of this Surveillance on batteries that are not in-service. ~~portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment~~. Credit may be taken for unplanned events that satisfy this SR. 4

BASES

REFERENCES

1. IEEE-450-2010. 3
2. UFSAR, Chapter 8. 3
3. UFSAR, Chapter ~~[~~6~~]~~. 3 1
4. UFSAR, Chapter ~~[15]~~ 14. 3 1
5. IEEE-485-~~[1983], June 1983~~ 1997. 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.6 BASES, BATTERY PARAMETERS

1. The Improved Standard Technical Specification (ISTS) contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis

2. These battery design values have been deleted because this type of information is not necessary to provide sufficient background for this Specification.

3. Changes are made (additions, deletions, and/or changes) to the ISTS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. Changes have been made to reflect changes made to other Specifications.

5. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.6, BATTERY PARAMETERS

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 7

ITS 3.8.7, INVERTERS - OPERATING

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3/4.8.3 ONSITE POWER DISTRIBUTION

A01

OPERATING

LIMITING CONDITION FOR OPERATION

A01

required inverters shall be OPERABLE

LCO 3.8.7 3.8.3.1 The following electrical busses* shall be energized in the specified manner with the tie breakers open between redundant busses within the unit** and between the busses of Units 3 and 4.

See ITS 3.8.9

a. One train of A.C. Busses consisting of:

1) 4160-Volt Bus A,
2) 480-Volt Load Center Busses A, C and H***, and
3) 480-Volt Motor Control Center Busses A (Unit 4 only),C and D***,

b. One train of A.C. Busses consisting of:

1) 4160-Volt Bus B
2) 480-Volt Load Center Busses B, D and H***, and
3) 480-Volt Motor Control Center Busses B and D***

See ITS 3.8.9

c. One opposite unit train of AC busses consisting of either:

1) 4160-Volt Bus A, 480-Volt Load Center Busses A, C and H***, and 480-Volt Motor Control Center Busses A (Unit 4 only), C and D***, or
2) 4160-Volt Bus B, 480-Volt Load Center Busses B, D and H***, and 480-Volt Motor Control Center Busses B and D***.

See ITS 3.8.9

d. 120 Volt AC Vital Panel 3P06 and 3P21 energized from ~~its associated inverter connected to D.C. Bus 3B.****~~

LA01

e. 120 Volt AC Vital Panel 4P06 and 4P21 energized from ~~its associated inverter connected to D.C. Bus 3B.****~~

f. 120 Volt AC Vital Panel 3P07 and 3P22 energized from ~~its associated inverter connected to D.C. Bus 3A.****~~

g. 120 Volt AC Vital Panel 4P07 and 4P22 energized from ~~its associated inverter connected to D.C. Bus 3A.****~~

h. 120 Volt AC Vital Panel 3P08 and 3P23 energized from ~~its associated inverter connected to D.C. Bus 4B.****~~

i. 120 Volt AC Vital Panel 4P08 and 4P23 energized from ~~its associated inverter connected to D.C. Bus 4B.****~~

---

* For Motor Control Center busses, vital sections only.

See ITS 3.8.9

** With the opposite unit in MODE 5, 6, or defueled, its 480-Volt Load Center can be cross-tied under conditions specified in Specification 3.8.3.2.a.

*** Electrical bus can be energized from either train of its unit and swing function to opposite train must be OPERABLE for the Unit(s) in MODES 1, 2, 3, and 4.

LA01

~~****A back-up inverter may be used to replace the normal inverter provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.~~

ONSITE POWER DISTRIBUTION

LIMITING CONDITION FOR OPERATION (Continued)

See ITS 3.8.9

LA01

j. 120 Volt AC Vital Panel 3P09 and 3P24 energized from ~~its associated inverter connected to D.C. Bus 4A.****~~

k. 120 Volt AC Vital Panel 4P09 and 4P24 energized from ~~its associated inverter connected to D.C. Bus 4A.****~~

l. 125 Volt D.C. Bus 3D01 energized from an associated battery charger and from Battery Bank 3A or spare battery bank D-52,

m. 125 Volt D.C. Bus 3D23 energized from an associated battery charger and from Battery Bank 3B or spare battery bank D-52,

n. 125 Volt D.C. Bus 4D01 energized from an associated battery charger and from Battery Bank 4B or spare battery bank D-52, and

o. 125 Volt D.C. Bus 4D23 energized from an associated battery charger and from Battery Bank 4A or spare battery bank D-52

See ITS 3.8.9

Applicability

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

ACTION:

NOTE: Enter applicable ACTIONS of LCO 3.8.2.1, “D.C. Sources - Operating,” for DC trains made inoperable by inoperable AC power distribution system.

See ITS 3.8.9

a. With one of the required trains (3.8.3.1a., b., and c) of A.C. emergency busses not fully energized (except for the required LC’s and MCC’s associated with the opposite unit), reenergize the train within 8 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any of the required LC’s and/or MCC’s associated with the opposite unit inoperable, restore the inoperable LC or MCC to OPERABLE status in accordance with Table 3.8-1 or Table 3.8-2 as applicable or place the unit in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION A

See ITS 3.8.9

c. With one A.C. vital panel either not energized from its associated inverter, ~~or~~ with the inverter not connected to its associated D.C. bus: (1) Reenergize the A.C. vital panel within 2 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours; and (2) reenergize the A.C. vital panel from an inverter connected to its associated D.C. bus

Add proposed Required Action A.1 Note

A02

LA01

~~****A back-up inverter may be used to replace the normal inverter, provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.~~

ONSITE POWER DISTRIBUTION

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

ACTION A
ACTION B

within 24 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in ~~COLD SHUTDOWN~~ MODE 4 within ~~the following~~ ~~30~~ 18 hours. This ACTION applies to both units simultaneously.

Add proposed Required Action B.2 Note

L01

d. With one D.C. bus not energized from its associated battery bank or associated charger, reenergize the D.C. bus from its associated battery bank within 2 hours* or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously.

See ITS 3.8.9

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

4.8.3.1 The specified busses shall be determined energized and aligned in the required manner by verifying correct breaker alignment and indicated voltage on the buses in accordance with the Surveillance Frequency Control Program.

* Can be extended to 24 hours if the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated diesel generator(s).

See ITS 3.8.9

DISCUSSION OF CHANGES
ITS 3.8.7, INVERTERS - OPERATING

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS LCO 3.8.2.1 ACTION c states, in part, that with one AC Vital Bus either not energized from its associated Inverter, or with the inverter not connected to its associated DC Bus, re-energize the AC Vital Bus from its associated inverter connected to its associated DC Bus within 24 hours. ITS Limiting Condition for Operation (LCO) 3.8.7 ACTION A states with one inverter inoperable, restore the Inverter to OPERABLE status within 24 hours. Required Action A is modified by a note that states, "Enter applicable Condition and Required Actions of LCO 3.8.9, 'Distribution Systems - Operating,' with any AC vital bus de-energized." This changes the CTS by adding a note that references the requirements for ITS LCO 3.8.9.

This change is acceptable because it does not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS LCO 3.8.7 Condition A is for one required inverter inoperable and LCO 3.8.9 must be entered if an AC Vital bus is inoperable. The ITS Condition A note provides no specific technical requirements and acts only as a reminder to enter LCO 3.8.9 if an AC Vital bus has become de-energized. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.3.1 states, in part, that the following electrical busses* shall be energized in the specified manner, listing the 120 volt AC Vital Panels as Items d through k, with the manner of energization being the associated inverter connected to the specified DC bus (e.g., its associated inverter connected to DC

Bus 3B). In addition, footnote **** states that a back-up inverter may be used to replace the normal inverter provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time. ITS 3.8.7 does not contain this level of detail information. This changes the CTS by moving the level of detail of inverter designators and alignment to the DC bus and details that a back-up inverter may be used to replace the normal inverter to the ITS Bases.

The removal of these details related to system design from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change, because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.8.3.1 ACTION c requires, in part, that with the inverter not connected to its associated DC bus, to reenergize the A.C. vital panel from an inverter connected to its associated DC bus within 24 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.8.7 ACTION B requires that with the Required Action and associated Completion Time (Restore inverter to OPERABLE status within 24 hours or in accordance with the Risk Informed Completion Time Program) of Condition A not met, to be in MODE 3 in 12 hours and MODE 4 in 18 hours. In addition, a Note is added to prevent the use of ITS LCO 3.0.4.a. This changes the CTS by requiring a less restrictive end state in the required actions, MODE 4 (HOT SHUTDOWN) instead of MODE 5 (COLD SHUTDOWN).

The purpose of the CTS 3.8.3.1 ACTIONS is to limit the time the unit can remain operating with busses not energized in the manner specified. Once these limits to operation are exceeded, CTS ACTION A is entered to provide a reasonable time to energize the specified bus(s) in the manner specified, while CTS ACTION B provides a reasonable time to place the unit in a safe condition. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification LCO is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources and the ability to remove decay heat such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven auxiliary feedwater (AFW) pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific TS conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No.

ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 TS end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003), noticed for availability by the NRC in the Federal Register (77 FR 27814) on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated TSTF-432-A Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters - Operating

3.8.3.1 LCO 3.8.7 The required ~~Train A and Train B~~ inverters shall be OPERABLE. 1

~~---NOTE---~~
~~[[One/two] inverter[s] may be disconnected from [its/their] associated DC bus for ≤ 24 hours to perform an equalizing charge on [its/their] associated [common] battery, provided:~~

~~a. The associated AC vital bus(es) [is/are] energized from [its/their] [Class 1E constant voltage source transformers] [inverter using internal AC source], and~~

~~b. All other AC vital buses are energized from their associated OPERABLE inverters.]~~
~~---~~ 2

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION c DOC A02 A. One ~~[~~required~~]~~ inverter inoperable.	A.1 --------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any AC vital bus de-energized. ------------------------------------- Restore inverter to OPERABLE status.	24 hours ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~

2 2 2

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION c	B. Required Action and associated Completion Time not met.	B.1 INSERT 1 Be in MODE 3.	~~6~~ 12 hours	1
		AND		
DOC L01		B.2 --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. --------------------------------------- Be in MODE 4.	~~12~~ 18 hours	1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.8.3.1	SR 3.8.7.1	Verify correct inverter voltage, ~~[frequency]~~, and alignment to required AC vital buses.	~~[7 days~~ ~~OR~~	2
			In accordance with the Surveillance Frequency Control Program ~~]~~	2

1

INSERT 1

Action c.

---NOTE---
This ACTION applies to both units simultaneously.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.7, INVERTERS - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.7 Inverters - Operating

BASES

BACKGROUND

The inverters are the preferred source of power for the AC vital buses because of the stability and reliability they achieve. The function of the inverter is to provide AC electrical power to the vital buses. ~~The inverters can~~ INSERT 1 ~~be powered from an internal AC source/rectifier or from the station battery.~~ The station battery provides an uninterruptible power source for the instrumentation and controls for the Reactor Protective System (RPS) and the Engineered Safety Feature Actuation System (ESFAS). Specific details on inverters and their operating characteristics are found in the U FSAR, Chapter ~~[~~8~~]~~ (Ref. 1). 1 2

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the U FSAR, Chapter ~~[~~6~~]~~ (Ref. 2) and Chapter ~~[15]~~ 14 (Ref. 3), assume Engineered Safety Feature systems are OPERABLE. The inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the RPS and ESFAS instrumentation and controls so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems. 1 2

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and is based on meeting the design basis of the unit. This includes maintaining required AC vital buses OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite AC electrical power ~~or all onsite AC electrical power~~ and 1

b. A worst case single failure.

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

LCO

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

1

INSERT 1

The 120 VAC Instrument System has four sets of equipment for each unit, each set consisting of a 7.5 kVA, 125 VDC/120 VAC inverter, distribution panel, static transfer switch and an associated constant voltage transformer (CVT) for alternate 120 VAC supplied from a vital motor control center (MCC). Each inverter is normally powered by a separate bus of the vital DC system. Upon overload or loss of the inverter AC output, the static switch in the output of the inverter automatically fast transfers to the alternate AC supply (CVT), if available, to maintain continuity of output power.

Four 7.5 kVA, 125 VDC/120 VAC spare inverters are provided to allow maintenance on the normal inverters. One spare inverter is provided for each pair of normal inverters of the same channel. The spare inverters are manually placed in service and can serve as backup to the normal source for each unit.

BASES

LCO (continued)

Maintaining the required inverters OPERABLE ensures that the redundancy incorporated into the design of the RPS and ESFAS instrumentation and controls is maintained. The ~~four~~ 8 required inverters ~~[(two per train)]~~ ensure an uninterruptible supply of AC electrical power to the AC vital buses even if the 4.16 kV safety buses are de-energized. 1 2

OPERABLE inverters require the ~~associated vital bus to be powered by the~~ inverter with output voltage ~~and frequency~~ within tolerances, and power input to the inverter from ~~a [125 VDC] station battery~~ INSERT 2. ~~Alternatively, power supply may be from an internal AC source via rectifier as long as the station battery is available as the uninterruptible power supply.~~ 1

~~This LCO is modified by a Note that allows [one/two] inverters to be disconnected from a [common] battery for ≤ 24 hours, if the vital bus(es) is powered from a [Class 1E constant voltage transformer or inverter using internal AC source] during the period and all other inverters are operable. This allows an equalizing charge to be placed on one battery. If the inverters were not disconnected, the resulting voltage condition might damage the inverter[s]. These provisions minimize the loss of equipment that would occur in the event of a loss of offsite power. The 24 hour time period for the allowance minimizes the time during which a loss of offsite power could result in the loss of equipment energized from the affected AC vital bus while taking into consideration the time required to perform an equalizing charge on the battery bank.~~ 3

~~The intent of this Note is to limit the number of inverters that may be disconnected. Only those inverters associated with the single battery undergoing an equalizing charge may be disconnected. All other inverters must be aligned to their associated batteries, regardless of the number of inverters or unit design~~.

APPLICABILITY

The inverters are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

Inverter requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.8, "Inverters - Shutdown."

1

INSERT 2

the connected 125 VDC bus shown in Table B 3.8.7-1.

BASES

ACTIONS

A.1

With a required inverter inoperable, its associated AC vital bus becomes inoperable until it is [manually] re-energized from its [Class 1E constant voltage source transformer ~~or inverter using internal AC source~~]. 2

For this reason a Note has been included in Condition A requiring the entry into the Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating." This ensures that the vital bus is re-energized within 2 hours.

Required Action A.1 allows 24 hours to fix the inoperable inverter and return it to service. [Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.] The 24 hour limit is based upon engineering judgment, taking into consideration the time required to repair an inverter and the additional risk to which the unit is exposed because of the inverter inoperability. This has to be balanced against the risk of an immediate shutdown, along with the potential challenges to safety systems such a shutdown might entail. When the AC vital bus is powered from its constant voltage source, it is relying upon interruptible AC electrical power sources (offsite and onsite). The uninterruptible inverter source to the AC vital buses is the preferred source for powering instrumentation trip setpoint devices. 2

B.1 and B.2

If the inoperable devices or components cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the unit must be brought to at least MODE 3 within ~~6~~ 12 hours and to MODE 4 within ~~12~~ 18 hours. 1

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 4). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 4, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

INSERT 3

1

INSERT 3

Required Action B.1 is modified by a Note that states that this ACTION applies to both Units simultaneously. Due to the shared nature of numerous electrical components between Turkey Point Units 3 and 4, the inoperability of a component on an associated unit will often affect the operation of the opposite unit. These shared electrical components include eight out of twelve Vital A.C. inverters. When an ACTION statement requires a dual unit shutdown, the time to be in MODE 3 is 12 hours. This is to allow the orderly shutdown of one unit at a time and not jeopardize the stability of the electrical grid by imposing a dual unit shutdown.

BASES

ACTIONS (continued)

Required Action B.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude~~,~~ changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. 4

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

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and AC vital buses energized from the inverter. The verification of proper voltage and frequency output ensures that the required power is readily available for the instrumentation of the RPS and ESFAS connected to the AC vital buses. ~~[The 7 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions.~~ 2

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~--]~~

INSERT 4

1 **INSERT 4**

Table B 3.8.7-1

120 Volt AC Vital Panel(s)	Inverter [(1)]	Back-up Inverter	D.C. Bus
3P07 and 3P22	3A	AS	3A
4P07 and 4P22	4A		
3P08 and 3P23	3B	BS	4B
4P08 and 4P23	4B		
3P06 and 3P21	3C	CS	3B
4P06 and 4P21	4C		
3P09 and 3P24	3D	DS	4A
4P09 and 4P24	4D		

(1) A back-up inverter may be used to replace the normal inverter, provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.

BASES

REFERENCES

1. U FSAR, Chapter ~~[~~8~~]~~. 1 2

2. U FSAR, Chapter ~~[~~6~~]~~. 1 2

3. U FSAR, Chapter ~~[15]~~ 14. 1 2

4. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.7 BASES, INVERTERS - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. This allowance of the ISTS Limiting Condition for Operation (LCO) 3.8.7 Note has been deleted because Turkey Point Nuclear Generating Station (PTN) does not need to disconnect the 120 VAC vital bus during an equalizing charge.

4. Editorial/grammar changes to the Bases have been made to enhance clarity.

5. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.7, INVERTERS - OPERATING

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 8

ITS 3.8.8, INVERTERS - SHUTDOWN

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

A02 Add proposed LCO 3.8.8

LCO 3.8.8 3.8.3.2 ~~As a minimum, the following electrical busses shall be energized in the specified manner~~: See ITS 3.8.10

a. One train of A.C. emergency busses associated with the unit (3.8.3.1a. or b.) consisting of one 4160-volt and three 480-volt A.C. emergency busses load centers* and three (four for Unit 4 Train A) vital sections of motor control center busses,

b. ~~Two~~ 120-volt A.C. vital busses for the unit energized from their-associated inverters~~**~~ ~~connected to their respective D.C. busses~~, and LA01 LA02

c. Three 125-volt D.C. busses energized from their associated battery banks. See ITS 3.8.10

Applicability APPLICABILITY MODES 5~~***~~ and 6~~***~~. LA03

, During movement of irradiated fuel assemblies. M01

ACTION: Add ACTIONS Note

Action A With any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving ~~CORE ALTERATIONS, positive reactivity changes, or~~ movement of irradiated fuel, initiate corrective action to energize the required electrical busses in the specified manner as soon as possible, ~~and within 8 hours, depressurize and vent the RCS through at least a 2.2 square inch vent.~~ L01

Add proposed Required Actions A.1 and A.2.2 L02

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1 4.8.3.2 The specified busses shall be determined energized in the required manner by verifying correct breaker alignment and indicated voltage on the ~~busses~~ in accordance with the Surveillance Frequency Control Program.

and frequency inverter M02

See ITS 3.8.10

* With the opposite unit in MODE 1, 2, 3, or 4, the 480-volt load centers can only be cross-tied upon issuance of an engineering evaluation to prevent exceeding required electrical components maximum design ratings and to ensure availability of the minimum required equipment.

~~** A backup inverter may be used to replace the normal inverter provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.~~ LA01

~~*** CAUTION - If the opposite unit is in MODES 1, 2, 3, or 4, see the corresponding Limiting Condition for Operation 3.8.3.1~~. LA03

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.8.3.2 requires, in part, that as a minimum, the following electrical busses shall be energized in the specified manner, listing two associated inverters connected to their respective DC busses. ITS 3.8.8 requires that two inverters shall be OPERABLE. This changes the CTS by providing a specific Limiting Condition for Operation (LCO) for inverters.

The purpose of CTS 3.8.3.2 is to ensure the availability of electrical power for the instrumentation for systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated Design Basis Accident (DBA). The change is acceptable because ITS 3.8.8 maintains this purpose for the part associated with the inverters. No changes are made to CTS inverter requirements. The change is in format from CTS to ITS and maintains the inverters technical requirements. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.3.2 is applicable in MODES 5 and 6. ITS LCO 3.8.8 is applicable in MODES 5 and 6 and during movement of irradiated fuel assemblies. A Note has been added to the ACTIONS which states that LCO 3.0.3 is not applicable. This changes the CTS by adding the Applicability of during movement of irradiated fuel assemblies and adds the Note to the ACTIONS stating that LCO 3.0.3 is not applicable.

This change is acceptable because the proposed requirements are necessary to ensure the inverters are OPERABLE to support equipment required to be OPERABLE during movement of irradiated fuel assemblies. Movement of fuel normally occurs during MODES 5 and 6, however, it can also occur outside of containment in other plant MODES (MODES 1, 2, 3, and 4) or other conditions (i.e., reactor defueled). This Specification is needed to ensure the appropriate requirements are specified during fuel handling and ensure the appropriate ACTIONS are taken (i.e., stop fuel movement) when the minimum electrical supply is not available. This change adds a clarification Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable and would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with the ITS 3.8.8 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary because defaulting to LCO 3.0.3 would require the reactor to be shut down but would not require suspension of activities with a potential for releasing radioactive materials. This change is designated as more restrictive because the ITS requires the equipment to be OPERABLE during movement of irradiated fuel assemblies both inside and outside of the containment, not only in MODES 5 and 6.

M02 CTS 4.8.3.2 requires that specified busses shall be determined energized in the required manner by verifying correct breaker alignment and indicated voltage on the busses. ITS Surveillance Requirement (SR) 3.8.8.1 requires the verification of correct inverter voltage, frequency, and alignments to required AC vital buses. This changes the CTS by requiring the specific verification of the inverter voltage, frequency, and alignment.

The purpose of CTS 4.8.3.2 is to ensure the instrumentation channels are provided with the proper voltage when powered by the associated inverter. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required inverters by verifying proper voltage and frequency are supplied to the instrumentation channels that provide inputs to the Reactor Trip System and Engineered Safety Features Actuation System. This change is designated as more restrictive because the ITS requires verification of the correct inverter voltage, frequency, and alignment where the CTS does not provide explicit requirements for the inverter.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.23.2 footnote ** states that a backup inverter may be used to replace the normal inverter provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time. ITS 3.8.8 requires, in part, the inverters to be OPERABLE. This changes the CTS by moving this level of detail information into the ITS Bases.

The removal of these details related to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.3.2 states, in part, that as a minimum, the following electrical busses shall be energized in the specified manner, listing two 120-volt AC vital busses for the unit and energized from their associated inverters** connected to their respective DC busses. ITS 3.8.8 LCO states that two inverters shall be OPERABLE. This changes the CTS by moving this level of detail information into the ITS Bases.

The removal of these details related to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.3.2 provides a caution that states, "*** CAUTION - If the opposite unit is in MODES 1, 2, 3, or 4, see the corresponding Limiting Condition for Operation 3.8.3.1." ITS 3.8.8 LCO does not provide this caution. This changes the CTS by moving this level of detail information into the ITS Bases.

The removal of these details related to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.3.2 Action requires, in part, that with any of the above required electrical busses not energized in the required manner, the Reactor Coolant System (RCS) must be depressurized and vented within 8 hours through at least a 2.2 square inch vent. ISTS 3.8.8 does not include this Required Action. ITS LCO 3.4.12, "Overpressure Mitigation System," provides requirements for RCS pressure relief when in MODES 4, 5, or 6, to depressurize and establish an RCS vent of ≥ 2.2 square inches within 12 hours if the other pressure relief methods are incapable of limiting pressure. This changes the CTS by relying on ITS LCO 3.4.12 to provide the Required Actions and allowing a longer Completion Time to depressurize the RCS and establish a ≥ 2.2 square inch RCS vent.

The purpose of CTS 3.8.3.2 Action is to provide remedial actions to be taken with any of the above required electrical busses not energized in the required manner while in MODE 5 or 6. One of these remedial actions is to depressurize and vent the RCS through at least a 2.2 square inch vent, which is being proposed for deletion. This change is acceptable because the CTS 3.8.3.2 Action to depressurize and vent the RCS is duplicative of the ITS LCO 3.4.12 Required Action to depressurize and vent the RCS. In addition, ITS 3.4.12 Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of an event occurring during the allowed Completion Time. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.8.3.2 ACTION states, in part, that that with any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel. ITS Required Actions A.1, A.2.1, and A.2.2 provide Actions to be performed under similar conditions. These ITS Required Actions state to declare affected required feature(s) inoperable, or to suspend movement of irradiated fuel assemblies and suspend operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN (SDM) or boron concentration. This changes the CTS Actions by deleting the requirement to suspend CORE ALTERATIONS and to clarify to only suspend positive reactivity additions when it could result in loss of required SDM or boron concentration.

The purpose of the CTS 3.8.3.2 ACTION is to minimize the possibility of an event that may need a required electrical bus to mitigate the consequences of the event. CORE ALTERATIONS is defined in CTS 1.9, in part, as "the movement of any fuel, sources, reactivity control components, or other components affecting reactivity, within the reactor vessel with the head removed and fuel in the vessel." CORE ALTERATIONS only occur when the reactor vessel head is removed and only applies in MODE 6. There is only one accident considered during MODE 6 that involves CORE ALTERATIONS: a fuel handling accident. According to the Standard Review Plan, a fuel handling accident is initiated by the dropping of an irradiated fuel assembly, either in the containment or in the fuel building. Suspension of CORE ALTERATIONS, except for suspension of movement of irradiated fuel, would not prevent or impair the mitigation of a fuel handling accident.

CTS 3.8.3.2 ACTION also requires that with less than the above minimum required electrical busses, immediately suspend all operations involving positive reactivity changes while ITS Required Actions A.2.2 requires only suspend operations involving positive reactivity additions that could result in loss of required SDM [shutdown margin] or boron concentration. This change is acceptable because it allows for positive reactivity additions that do not result in loss of required SDM or boron concentration (e.g., water addition or temperature change) assuring continued safe operation.

With the addition of the option to declare required features inoperable with the associated inverter(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. However, in many instances, this option may involve undesired administrative efforts. Therefore, the allowance for suspending movement of irradiated fuel assemblies and suspending operations involving positive reactivity additions that could result in loss of required SDM or boron concentration are sufficiently conservative actions. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters - Shutdown

3.8.3.2 LCO 3.8.8 ~~[Inverters shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."]~~ 1

Two

~~[One]~~ inverter~~[~~s~~]~~ shall be OPERABLE.~~]~~ 1

~~REVIEWER'S NOTE~~
~~This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only [one] inverter to be OPERABLE. The "[or more]" optional wording in Condition A is also eliminated for this case. The first option above is adopted for plants that have a CTS requiring the same level of DC electrical power subsystem/inverter support as is required for power operating conditions.~~ 2

Applicability APPLICABILITY: MODES 5 and 6,
During movement of ~~[recently]~~ irradiated fuel assemblies. 1

ACTIONS

-----NOTE-----
DOC M01 LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action A. One ~~[~~or more~~]~~ ~~[~~required~~]~~ inverter~~[~~s~~]~~ inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately 1
	OR	
	A.2.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately 1
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.3 Initiate action to restore required inverters to OPERABLE status.	Immediately

DOC L02

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage, ~~[~~frequency,~~]~~ and alignments to required AC vital buses.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~

4.8.3.2

1

1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.8, INVERTERS - SHUTDOWN

1. The Improved Standard Technical Specification (ISTS) contain bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

2. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

3. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.8 Inverters - Shutdown

BASES

BACKGROUND

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

APPLICABLE SAFETY ANALYSES

U The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter ~~[~~6~~]~~ (Ref. 1) and Chapter ~~[15]~~ 14 (Ref. 2), assume Engineered Safety Feature systems are OPERABLE. The DC to AC inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the Reactor Protective System and Engineered Safety Features Actuation System instrumentation and controls so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. 3 1

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

The OPERABILITY of the minimum inverters to each AC vital bus during MODES 5 and 6 ensures that:

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate power is available to mitigate events postulated during shutdown, such as a fuel handling accident ~~[involving handling recently irradiated fuel. Due to radioactive decay, the AC and DC inverters are only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).]~~. 1

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many DBAs that are analyzed in MODES ~~[~~1, 2, 3, and 4~~]~~ have no specific analyses in MODES ~~[~~5 and 6~~]~~ because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being 1

BASES

APPLICABLE SAFETY ANALYSES (continued)

significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case DBAs which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an Industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

The inverters were previously identified as part of the distribution system and, as such, satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The inverter~~[~~s~~]~~ ensure the availability of electrical power for the instrumentation for systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. The battery powered inverter~~[~~s~~]~~ provide~~[s]~~ uninterruptible supply of AC electrical power to the AC vital bus~~[~~es~~]~~ even if the 4.16 kV safety buses are de-energized. OPERABILITY of the inverter~~[~~s~~]~~ requires that the AC vital bus be powered by the inverter. This ensures the availability of sufficient inverter power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~[involving handling recently irradiated fuel]~~). 1 1 1 1

APPLICABILITY

The inverter~~[~~s] required to be OPERABLE in MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies provide assurance that: 1

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core,

b. Systems needed to mitigate a fuel handling accident ~~[involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~ are available, 1

BASES

APPLICABILITY (continued)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

Inverter requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

A.1, A.2.1, A.2.2, and A.2.3

~~[~~If two trains are required by LCO 3.8.10, "Distribution Systems - Shutdown," the remaining OPERABLE Inverters may be capable of supporting sufficient required features to allow continuation of ~~[recently]~~ irradiated fuel movement, and operations with a potential for positive reactivity additions.~~]~~ By the allowance of the option to declare required features inoperable with the associated inverter(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend movement of ~~[recently]~~ irradiated fuel assemblies, and operations involving positive reactivity additions) that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

BASES

ACTIONS (continued)

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required inverter[s] and to continue this action until restoration is accomplished in order to provide the necessary inverter power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required inverters should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power or powered from a constant voltage source transformer.

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and AC vital buses energized from the inverter. The verification of proper voltage and frequency output ensures that the required power is readily available for the instrumentation connected to the AC vital buses. ~~[The 7 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions.~~

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~

1

2

REFERENCES

1. U FSAR, Chapter ~~[~~6~~]~~. 3 1
2. U FSAR, Chapter ~~[15]~~ 14. 3 1

3

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.8 BASES, INVERTERS - SHUTDOWN

1. The Improved Standard Technical Specification (ISTS) contain bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

2. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

3. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.8, INVERTERS - SHUTDOWN

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 9

ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. Two startup transformers and their associated circuits, and

b. Three separate and independent diesel generators* including,

See ITS 3.8.1

1) For Unit 3, two (3A and 3B); for Unit 4, one (3A or 3B) each with:

See ITS 3.8.3

a) A separate skid-mounted fuel tank and a separate day fuel tank with an OPERABLE solenoid valve to permit gravity flow from the day tank to the skid mounted tank, and with the two tanks together containing a minimum of 2000 gallons of fuel oil.

b) A common Fuel Storage System containing a minimum volume of 38,000 gallons of fuel,**

c) A separate fuel transfer pump,**

d) Lubricating oil storage containing a minimum volume of 120 gallons of lubricating oil,

e) Capability to transfer lubricating oil from storage to the diesel generator unit, and

LCO 3.8.9. Action C

f) Energized MCC bus (MCC 3A vital section for EDG 3A, MCC 3K for EDG 3B).

2) For Unit 3, one (4A or 4B); for Unit 4, two (4A and 4B) each with:

See ITS 3.8.1

See ITS 3.8.3

a) A separate day fuel tank containing a minimum volume of 230 gallons of fuel,

b) A separate Fuel Storage System containing a minimum volume of 34,700 gallons of fuel,

c) A separate fuel transfer pump, and

LCO 3.8.9, Action C

d) Energized MCC bus (MCC 4J for EDG 4A, MCC 4K for EDG 4B).

See ITS 3.8.1

*Whenever one or more of the four EDG's is out-of-service, ensure compliance with the EDG requirements specified in Specifications 3.5.2 and 3.8.2.1.

**A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement 4.8.1.1.2i.1 for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively.

See ITS 3.8.3

A01

3/4.8.3 ONSITE POWER DISTRIBUTION

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.9 3.8.3.1 The following electrical busses~~*~~ shall be energized ~~in the specified manner with the tie breakers open between redundant busses within the unit** and between the busses of Units 3 and 4~~.

LA02

~~a. One train of A.C. Busses consisting of:~~

~~1) 4160-Volt Bus A,~~
~~2) 480-Volt Load Center Busses A, C and H***, and~~
~~3) 480-Volt Motor Control Center Busses A (Unit 4 only),C and D***,~~

~~b. One train of A.C. Busses consisting of:~~

~~1) 4160-Volt Bus B~~
~~2) 480-Volt Load Center Busses B, D and H***, and~~
~~3) 480-Volt Motor Control Center Busses B and D***~~

~~c. One opposite unit train of AC busses consisting of either:~~

~~1) 4160-Volt Bus A, 480-Volt Load Center Busses A, C and H***, and 480-Volt Motor Control Center Busses A (Unit 4 only), C and D***, or~~
~~2) 4160-Volt Bus B, 480-Volt Load Center Busses B, D and H***, and 480-Volt Motor Control Center Busses B and D***.~~

LA01

d. ~~120 Volt AC Vital Panel 3P06 and 3P21 energized from its associated inverter~~ connected to D.C. Bus 3B.****

See ITS 3.8.7

~~or Class 1E constant voltage transformer~~ L01

e. ~~120 Volt AC Vital Panel 4P06 and 4P21 energized from its associated inverter~~ connected to D.C. Bus 3B.****

See ITS 3.8.7

f. ~~120 Volt AC Vital Panel 3P07 and 3P22 energized from its associated inverter~~ connected to D.C. Bus 3A.****

~~or Class 1E constant voltage transformer~~ L01

g. ~~120 Volt AC Vital Panel 4P07 and 4P22 energized from its associated inverter~~ connected to D.C. Bus 3A.****

See ITS 3.8.7

h. ~~120 Volt AC Vital Panel 3P08 and 3P23 energized from its associated inverter~~ connected to D.C. Bus 4B.****

~~or Class 1E constant voltage transformer~~ L01

i. ~~120 Volt AC Vital Panel 4P08 and 4P23 energized from its associated inverter~~ connected to D.C. Bus 4B.****

See ITS 3.8.7

~~* For Motor Control Center busses, vital sections only.~~ LA01

~~** With the opposite unit in MODE 5, 6, or defueled, its 480-Volt Load Center can be cross-tied under conditions specified in Specification 3.8.3.2.a.~~ LA02

~~*** Electrical bus can be energized from either train of its unit and swing function to opposite train must be OPERABLE for the Unit(s) in MODES 1, 2, 3, and 4.~~ LA01

See ITS 3.8.7

****A back-up inverter may be used to replace the normal inverter provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.

ONSITE POWER DISTRIBUTION

LIMITING CONDITION FOR OPERATION (Continued)

LA02

See ITS 3.8.7

j. ~~120 Volt AC Vital Panel 3P09 and 3P24 energized from its associated inverter~~ connected to D.C. Bus 4A.****

~~or Class 1E constant voltage transformer~~ L01

k. ~~120 Volt AC Vital Panel 4P09 and 4P24 energized from its associated inverter~~ connected to D.C. Bus 4A.****

See ITS 3.8.7

l. ~~125 Volt D.C. Bus 3D01 energized from an associated battery charger and from Battery Bank 3A or spare battery bank D-52,~~

~~or~~ L02

m. ~~125 Volt D.C. Bus 3D23 energized from an associated battery charger and from Battery Bank 3B or spare battery bank D-52,~~

n. ~~125 Volt D.C. Bus 4D01 energized from an associated battery charger and from Battery Bank 4B or spare battery bank D-52, and~~

~~or~~

o. ~~125 Volt D.C. Bus 4D23 energized from an associated battery charger and from Battery Bank 4A or spare battery bank D-52~~

LA02

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

ACTION:

Required Action A.1 Note

NOTE: Enter applicable ACTIONS of LCO 3.8.2.1, "D.C. Sources - Operating," for DC trains made inoperable by inoperable AC power distribution system.

Action A

or more L03

a. With one of the required trains (3.8.3.1a., b., and c) of A.C. emergency busses not fully energized (except for the required LC's and MCC's associated with the opposite unit), reenergize the train within 8 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 6 hours and ~~in COLD SHUTDOWN within the following 30 hours~~.

Action F

L04

INSERT 1

Action B

b. With any of the required LC's and/or MCC's associated with the opposite unit inoperable, restore the inoperable LC or MCC to OPERABLE status in accordance with Table 3.8-1 or Table 3.8-2 as applicable or place the unit in at least HOT STANDBY within 6 hours and ~~in COLD SHUTDOWN within the following 30 hours~~.

Action F

L03

or more LA01 ~~or Class 1E constant voltage transformer~~

Action D

See ITS 3.8.7

c. With one A. C. vital panel either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) Reenergize the A.C. vital panel within 2 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and ~~in COLD SHUTDOWN within the following 30 hours~~; and (2) reenergize the A.C. vital panel from an inverter connected to its associated D.C. bus

L01

Action G

INSERT 2

See ITS 3.8.7

L05

See ITS 3.8.7

****A back-up inverter may be used to replace the normal inverter, provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.

L04

INSERT 1

Action a.,
Action b.
DOC L04

F.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	12 hours

INSERT 2

Action c.,
DOC L05

G.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	18 hours

ONSITE POWER DISTRIBUTION

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

See ITS 3.8.7

within 24 hours or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously.

Action D Note

L03

or more

Action E d. With one D.C. bus not energized from its associated battery bank or associated charger, reenergize the D.C. bus ~~from its associated battery bank~~ within 2 hours* or in accordance with the Risk Informed Completion Time Program, or be in at least HOT STANDBY within the next

A02

Action G 12 hours and ~~in COLD SHUTDOWN within the following 30 hours~~. This ACTION applies to both

Action E Note units simultaneously.

INSERT 3 L05

Add proposed Action H L03

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 4.8.3.1 The specified busses shall be determined energized and aligned in the required manner by verifying correct breaker alignment and indicated voltage on the buses in accordance with the Surveillance Frequency Control Program.

Action E * Can be extended to 24 hours if the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated diesel generator(s).

L05

INSERT 3

Action d.
DOC L05

G.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	18 hours

Table 3.8.9-1
Footnote (a)

TABLE 3.8-1

APPLICABLE TO UNIT 3 BASED ON UNIT 4 LOAD
CENTERS AND MOTOR CONTROL CENTERS INOPERABLE

ALLOWABLE OUTAGE TIMES

Unit 4 Load Centers and Motor Control Centers Inoperable (Any MODE)	Allowable Outage Times (hours) Unit 3 – MODES 1, 2, 3 and 4		
	With AC Trains 3A, 3B, 4A, & 4B OPERABLE	With AC Trains 3A, 3B, & 4A OPERABLE	With AC Trains 3A, 3B, & 4B OPERABLE
LC 4A	N/A	72[a]	N/A
MCC 4A	N/A	N/A	N/A
LC 4C and/or MCC 4C	2*[a]	2*[a]	N/A
LC 4H and/or MCC 4D	2**[a]	2**[a]	2**[a]
LC 4B and/or MCC 4B	2*[a]	N/A	2*[a]
LC 4D	N/A	N/A	72[a]

Footnote (c) * If the battery charger powered from the out-of-service LC and/or MCC is not required by LCO 3.8.2.1, the out-of-service time is not applicable (N/A).

Footnote (d) ** If neither of the battery chargers powered from the out-of-service LC and/or MCC is required by LCO 3.8.2.1, the out-of-service time is 72 hours or in accordance with the Risk Informed Completion Time Program.

Footnote (b) [a] or in accordance with the Risk Informed Completion Time Program.

Table 3.8.9-2

TABLE 3.8-2

Footnote (a)

APPLICABLE TO UNIT 4 BASED ON UNIT 3 LOAD CENTERS AND MOTOR CONTROL CENTERS INOPERABLE

ALLOWABLE OUTAGE TIMES

Unit 3 Load Centers and Motor Control Centers Inoperable (Any MODE)	Allowable Outage Times (hours) Unit 4 – MODES 1, 2, 3 and 4		
	With AC Trains 4A, 4B, 3A, & 3B OPERABLE	With AC Trains 4A, 4B, & 3A OPERABLE	With AC Trains 4A, 4B, & 3B OPERABLE
LC 3A	N/A	72[a]	N/A
LC 3C and/or MCC 3C	2*[a]	2*[a]	N/A
LC 3H and/or MCC 3D	2**[a]	2**[a]	2**[a]
LC 3B and/or MCC 3B	2*[a]	N/A	2*[a]
LC 3D	N/A	N/A	72[a]

Footnote (c) * If the battery charger powered from the out-of-service LC and/or MCC is not required by LCO 3.8.2.1, the out-of-service time is not applicable (N/A).

Footnote (d) ** If neither of the battery chargers powered from the out-of-service LC and/or MCC is required by LCO 3.8.2.1, the out-of-service time is 72 hours or in accordance with the Risk Informed Completion Time Program.

Footnote (b) [a] or in accordance with the Risk Informed Completion Time Program.

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 CTS 3.8.3.1 ACTION d states in part, that with one DC bus not energized from its associated battery bank or associated charger, reenergize the DC bus from its associated battery bank within 2 hours* or in accordance with the Risk Informed Completion Time Program. ITS 3.8.9 ACTION E states that with one or more DC electrical power distribution subsystems inoperable to restore DC electrical power distribution subsystem(s) to OPERABLE status within 2 hours or in accordance with the Risk Informed Completion Time Program. This changes the CTS by allowing a deenergized DC bus to be reenergized by either the battery bank or the associated charger.

The purpose of the CTS 3.8.3.1 ACTION d is to specify the remedial action(s) that must be taken within a prescribed period based on a deenergized 125 VDC bus. The entry condition for this ACTION is when a DC bus is not energized from its associated battery or associated charger. The required action is to reenergize the DC bus from its associated battery bank. In CTS ACTION d the Condition (not energized from its associated battery bank or associated charger) and Required Action (reenergize the DC bus from its associated battery bank) do not match; reenergizing the DC bus from its associated charger is not included in the Required Action. Although not included in the CTS ACTION d, if the DC bus were reenergized by its associated charger the conditions for entry into ACTION d would not be met and ACTION d would no longer apply. Thus, whether reenergized by its associated battery bank or associated charger the outcome is the same. ITS 3.8.9 ACTION E states that with one or more DC buses inoperable (i.e., not energized) to restore the DC electrical buses to OPERABLE status (i.e., reenergized). The DC buses have two methods of reenergization, either the associated battery bank (including the spare) or the charger. Therefore, this change acceptable and is considered administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.3.1 requires, in part, that the following electrical busses* shall be energized and lists the specific AC buses, 120 Volt AC Vital Panels and 125 Volt DC buses required to be energized. ITS Limiting Condition for Operation (LCO) 3.8.9 requires the applicable associated Unit Train A and Train B and the opposite Unit Train A or Train B AC, DC, and AC vital bus electrical power distribution buses and panels to be OPERABLE. This changes the CTS by moving the specific names of the buses and panels, the associated nominal voltages (i.e., 4160 V, 480 V, 125 V, and 120 V), and associated footnotes from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS 3.8.9 retains the requirement for the required distribution buses and panels to be OPERABLE. In addition, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. The Technical Specification Bases Control Program in Chapter 5 controls changes to the Bases, requiring an evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.8.3.1 requires that electrical busses* shall be energized in the specified manner with the tie breakers open between redundant busses within the unit** and between the busses of Units 3 and 4. CTS 3.8.3.1 Footnote ** states that with the opposite unit in MODE 5, 6, or defueled, its 480-Volt Load Center can be cross-tied under conditions specified in Specification 3.8.3.2.a. ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE and ITS Surveillance Requirement (SR) 3.8.9.1 requires the verification of correct breaker alignments and voltage to required AC, DC, and AC vital electrical power distribution subsystems buses and panels. This changes the CTS by moving the procedural detail that the buses must have the tie breakers open between redundant buses from the CTS to the ITS Bases.

The removal of these details for meeting Technical Specification requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the required electrical power distribution buses and panels to be OPERABLE and requires the verification of correct breaker alignments and voltage to required AC, DC, and AC vital electrical power distribution buses and panels. In addition, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. The Technical Specification Bases Control Program in Chapter 5 controls changes to the

Bases. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 1 - Relaxation of LCO Requirements)* CTS LCO 3.8.3.1 requires the 120 VAC vital buses to be energized from the associated inverters connected to a DC bus. CTS 3.8.3.1 ACTION c states, in part, that with one AC vital panel either not energized from its associated inverter, or with the inverter not connected to its associated DC bus to reenergize the AC vital panel. There is no other LCO requirement for the inverters to be OPERABLE or actions if inoperable. In the ITS, the inverters are placed in a separate Specification (either ITS 3.8.7 for MODES 1, 2, 3, and 4 or ITS 3.8.8 for the MODES 5 and 6, and during movement of irradiated fuel assemblies). The 120 VAC vital panels are in a separate Specifications under the same conditions (ITS 3.8.9 and ITS 3.8.10, respectively). CTS 3.8.3.1 ACTION c requires that when a 120 Volt AC vital panel is either not energized from its associated inverter, or with the inverter not connected to its associated DC bus to 1) reenergize the AC vital panel within 2 hours, and 2) reenergize the AC vital panel from an inverter connected to its associated DC bus within 24 hours. During these 24 hours, the 120 VAC vital panel remains OPERABLE provided it is energized. In the ISTS Bases, the 120 VAC vital panel remains OPERABLE if it can be energized from an inverter powered from DC Sources or a Class 1E constant voltage transformer. This changes the CTS by allowing the 120 VAC vital buses to be considered OPERABLE when powered from a source other than the inverter connected to a DC bus.

The purpose of CTS LCO 3.8.3.1 is, in part, to provide requirements for ensuring the 120 VAC vital panel are energized and specifying how the panels are to be energized (e.g., energized from its associated inverter connected to DC Bus 3B). ITS LCO 3.8.9 specifies that the 120 VAC vital panels are to be energized, with the Bases stating by a Class 1E source, either an inverter or a constant voltage transformer. The requirement for the specifics on how the power is supplied to the 120 VAC vital panels from the inverters is maintained in ITS LCO 3.8.7 and LCO 3.8.8. For the 120 VAC vital panels to be OPERABLE, the panels only need to be powered from a qualified source (i.e., each of the allowed sources can carry the required loads on the associated vital bus). This change is acceptable because how the 120 VAC panels are energized is retained in ITS LCO 3.8.7 and the allowance to use the constant voltage transformers is supported by CTS 3.8.3.1 ACTION c that allows 24 hours for a 120 VAC vital panel to be energized by a source other than an inverter. The DC Source, the inverter, and the constant voltage transformer are qualified sources capable of providing the necessary voltage, frequency, and capacity to the associated 120 VAC vital bus. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 1 - Relaxation of LCO Requirements)* CTS LCO 3.8.3.1 requires the 125 VDC Buses to be energized from an associated battery charger and from a battery bank or the spare battery bank D-52. In addition, CTS LCO 3.8.2.1 requires DC electrical sources to be OPERABLE including a battery bank or spare battery bank and an associated full capacity charger. The ITS LCO for DC sources is ITS LCO 3.8.4 for MODES 1, 2, 3, and 4 or ITS 3.8.5 for the MODES 5 and 6, and during movement of irradiated fuel assemblies. The 125 VDC buses remain in separate Specifications during these same conditions (ITS 3.8.9 and ITS 3.8.10, respectively). CTS 3.8.3.1 ACTION d requires that with one DC bus not energized from its associated battery bank or associated charger, reenergize the DC bus from its associated battery bank within 2 hours* or in accordance with the Risk Informed Completion Time Program. During these 2 hours, if the DC bus is reenergized from its associated charger the Action is exited because the entry condition is no longer met. In the ISTS Bases, the 125 VDC bus remains OPERABLE if it can be energized from its associated battery of charger. This changes the CTS by allowing the 120 VDC buses to be considered OPERABLE when powered from a either its associated battery or charger.

The purpose of CTS LCO 3.8.3.1 is, in part, to provide requirements for ensuring the 120 VDC vital panel are energized and specifying how the panels are to be energized (e.g., energized from its associated inverter connected to DC Bus 3B). ITS LCO 3.8.9 specifies that the 120 VAC vital panels are to be energized, with the Bases stating by a Class 1E source, either an inverter or a constant voltage transformer. The requirement for the specifics on how the power is supplied to the 120 VAC vital panels from the inverters is maintained in ITS LCO 3.8.7 and LCO 3.8.8. For the 120 VAC vital panels to be OPERABLE, the panels only need to be powered from a qualified source (i.e., each of the allowed sources can carry the required loads on the associated vital bus). This change is acceptable because how the 120 VAC panels are energized is retained in ITS LCO 3.8.7 and the allowance to use the constant voltage transformers is supported by CTS 3.8.3.1 ACTION c that allows 24 hours for a 120 VAC vital panel to be energized by a source other than an inverter. The DC Source, the inverter, and the constant voltage transformer are qualified sources capable of providing the necessary voltage, frequency, and capacity to the associated 120 VAC vital bus. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L03 *(Category 4 - Relaxation of Required Action)* CTS 3.8.3.1 ACTION a, in part, states "With one of the required trains of A.C. emergency busses not fully energized..." CTS 3.8.3.1 ACTION c, in part, states "With one A. C. vital panel either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus..." CTS 3.8.3.1 ACTION d, in part, states "With one D.C. bus not energized from its associated battery bank or associated charger..." ITS LCO 3.8.9 Condition A states "One or more AC electrical power distribution buses inoperable." ITS LCO 3.8.9 Condition D states "One or more AC vital panels inoperable." ITS LCO 3.8.9 Condition E states "One or more DC electrical power distribution buses inoperable." ITS Condition H provides the Required Action if 2 or more distribution buses and/or panels become inoperable and a loss of safety function occurs. This changes the CTS by allowing more than one bus, panel or combination of buses and panels to be inoperable.

The purpose of ITS 3.8.9 Condition A, Condition D, and Condition E is to ensure required safety features have the required electrical power to perform the specified safety function. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident (DBA) occurring during the repair period. The distribution subsystems are composed of the 4160 VAC emergency buses, 480 VAC emergency bus load center buses, 480 VAC motor control center buses, 120 VAC vital panels, and 125 VDC buses. Although more than one of the subsystems components may be inoperable, the Engineered Safety Feature (ESF) functions may be able to provide the for specified safety functions. ITS Condition H provides the Required Action if 2 or more distribution subsystem components become inoperable and a loss of safety function occurs. Condition H requires an entry into LCO 3.0.3 immediately. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04 *(Category 4 – Relaxation of Required Action)* CTS 3.8.3.1 ACTION a and ACTION b in part, require that if the associated required actions and completion times are not met to be in in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.8.9 ACTION F requires that with the Required Action and associated Completion Time of Condition A or B not met to be in MODE 3 in 6 hours and MODE 4 in 12 hours. This changes the CTS by requiring a less restrictive end state in the required actions, MODE 4 (HOT SHUTDOWN) instead of MODE 5 (COLD SHUTDOWN).

The purpose of the CTS 3.8.3.1 ACTIONS is to limit the time the unit can remain operating with different combinations of AC emergency buses. Once these limits are exceeded, ACTION F is entered to provide a reasonable time to place the unit is a safe condition. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification LCO is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources and the ability to remove decay heat such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven auxiliary feedwater (AFW) pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific TS conditions, Westinghouse Topical Report WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the

Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 TS end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003), noticed for availability by the NRC in the Federal Register (77 FR 27814) on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated TSTF-432-A Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L05 *(Category 4 – Relaxation of Required Action)* CTS 3.8.3.1 ACTION c and ACTION d, in part, require that if the associated Required Action and Completion Time are not met to be in in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.8.9 ACTION G requires that with the Required Action and associated Completion Time of Condition D or E not met to be in MODE 3 in 12 hours and MODE 4 in 18 hours. This changes the CTS by requiring a less restrictive end state in the required actions, MODE 4 (HOT SHUTDOWN) instead of MODE 5 (COLD SHUTDOWN).

The purpose of the CTS 3.8.3.1 ACTIONs is to limit the time the unit can remain operating with different combinations of inoperable buses or panels. CTS .8.3.1 ACTION c is associated with inoperable 120 VAC vital panels, CTS 3.8.3.1 ACTION d is associated with inoperable 125 VDC buses. Similarly, ITS 3.8.9 Condition D is associated with inoperable 120 VAC vital panels while ITS 3.8.9 Condition E is associated with inoperable 125 VDC buses. Once the Required Action Completion Times for an inoperable 120 VAC vital panel or an inoperable 125 VDC bus are exceeded ACTION G is entered to provide a reasonable time to place the unit in a safe condition. End states are usually defined based on placing the unit into a MODE or condition in which the Technical Specification LCO is not applicable. MODE 5 is the current end state for LCOs that are applicable in MODES 1 through 4. This change is acceptable because the risk of the transition from MODE 1 to MODES 4 or 5 depends on the availability of alternating current (AC) sources and the ability to remove decay heat such that remaining in MODE 4 may be safer. During the realignment from MODE 4 to MODE 5, there is an increased potential for loss of shutdown cooling and loss of inventory events. Decay heat removal following a loss-of-offsite power event in MODE 5 is dependent on AC power for shutdown cooling whereas, in MODE 4, the turbine driven auxiliary feedwater (AFW) pump will be available. Therefore, transitioning to MODE 5 is not always the appropriate end state from a risk perspective. Thus, for specific TS conditions, Westinghouse Topical Report

WCAP-16294-A R1 (ADAMS Accession No. ML103430249) justifies MODE 4 as an acceptable alternate end state to Mode 5. The proposed change to the Technical Specifications will allow time to perform short-duration repairs, which currently necessitate exiting the original mode of applicability. The MODE 4 TS end state is applied, and risk is assessed and managed in accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Modified end states are limited to conditions where: (1) entry into the shutdown mode is for a short interval, (2) entry is initiated by inoperability of a single train of equipment or a restriction on a plant operational parameter, unless otherwise stated in the applicable TS, and (3) the primary purpose is to correct the initiating condition and return to power operation as soon as is practical. This proposed change is consistent with NRC approved TSTF-432-A Revision 1 (ADAMS Accession No. ML103360003), noticed for availability by the NRC in the Federal Register (77 FR 27814) on May 11, 2012. The NRC's approval of WCAP-16294-A included four limitations and conditions on its use as identified in Section 4.0 of the NRC Safety Evaluation associated with WCAP-16294-A. Implementation of these stipulations were addressed in the Bases of TSTF-432-A. Florida Power & Light implemented these limitations and conditions at PTN in the adoption of the associated TSTF-432-A Bases. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

3.8.1.1.b.1)f), 3.8.1.1.b.2)d), 3.8.3.1

LCO 3.8.9 Associated Unit Train A and Train B and opposite Unit Train A or Train B AC, DC, and AC vital bus electrical power distribution ~~subsystems~~ buses and panels shall be OPERABLE. 1

Applicability

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.3.1 Action a. 2 INSERT 1 A. One or more AC electrical power distribution ~~subsystems~~ buses inoperable. 1 INSERT 2	A.1 --------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC trains made inoperable by inoperable power distribution subsystems. ------------------------------------- Restore AC electrical power distribution ~~subsystem~~ buses(s) to OPERABLE status. 1	8 hours ~~[~~OR 3 In accordance with the Risk Informed Completion Time Program~~]~~ 3
3.8.3.1 Action c. 2 ~~B~~ D. One or more AC vital ~~buses~~ panels inoperable. 1	~~B~~ D.1 INSERT 3 Restore AC vital bus ~~subsystem~~ panel(s) to OPERABLE status.	2 hours ~~[~~OR 3 In accordance with the Risk Informed Completion Time Program~~]~~ 3

2 **INSERT 1**

3.8.3.1 Action a.

------------- NOTE --------------
Not applicable to the required LCs or MCCs associated with the opposite unit.
----

2 **INSERT 2**

3.8.3.1 Action b.	B. -----------NOTE------------ Only applicable to the required LCs or MCCs associated with the opposite unit. -------------------------------- One or more required AC electrical power distribution buses inoperable.	B.1	--------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC trains made inoperable by inoperable power distribution subsystems. ------------------------------------ Restore required AC electrical power distribution buses to OPERABLE status.	In accordance with Table 3.8.9-1 or Table 3.8.9-2 as applicable.
3.8.1.1.b	C. MCC 3A (vital section), MCC 4J, MCC 3K, or MCC 4K inoperable.	C.1	Declare associated EDG inoperable.	Immediately

2 **INSERT 3**

3.8.3.1 Action c.

----------------NOTE----------------
This Required Action applies to both units simultaneously.

ACTIONS (continued)

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME	
3.8.3.1 Action d.	~~C~~ E. One or more DC electrical power distribution ~~subsystems~~ buses inoperable.	~~C~~ E.1	INSERT 4 Restore DC electrical power distribution buses ~~subsystem(s)~~ to OPERABLE status.	2 hours INSERT 5 ~~[~~OR In accordance with the Risk Informed Completion Time Program~~]~~	2 1 3 3
3.8.3.1 Action a., 3.8.3.1 Action b.	~~D~~ F. Required Action and associated Completion Time of Condition A or B not met. INSERT 6	~~D~~ F.1 AND ~~D~~ F.2	Be in MODE 3. --------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	6 hours 12 hours	2 2 2
DOC L03	~~E~~ H. Two or more electrical power distribution ~~subsystems~~ buses and/or panels inoperable that result in a loss of safety function.	~~E~~ H.1	Enter LCO 3.0.3.	Immediately	2 1

2 **INSERT 4**

3.8.3.1 Action d.

----------------NOTE----------------
This Required Action applies to both units simultaneously.
----

2 **INSERT 5**

3.8.3.1 Action d Footnote *

OR

24 hours if one DC bus inoperable and the opposite unit is in MODE 5, 6, or defueled and each of the remaining required battery chargers is capable of being powered from its associated emergency diesel generator(s).

2 **INSERT 6**

3.8.3.1 Action c., 3.8.3.1 Action d.

G. Required Action and associated Completion Time of Condition D or E not met.	G.1	Be in MODE 3.	12 hours
	AND		
	G.2	--------------NOTE-------------- LCO 3.0.4.a is not applicable when entering MODE 4. ------------------------------------- Be in MODE 4.	 18 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.8.3.1	SR 3.8.9.1	Verify correct breaker alignments and voltage to ~~[~~required~~]~~ AC, DC, and AC vital bus electrical power distribution ~~subsystems~~ buses and panels.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 1 3

INSERT 7

INSERT 8

2

2 **INSERT 7**

Table 3.8-1

TABLE 3.8.9-1 (page 1 of 1)

LOAD CENTERS AND MOTOR CONTROL CENTERS INOPERABLE

UNIT 3 COMPLETION TIMES[(a)]

Unit 4 Load Centers and Motor Control Centers Inoperable (Any MODE)	Completion Times (hours) Unit 3 – MODES 1, 2, 3 and 4		
	With AC 4160 V Buses 3A, 3B, 4A, & 4B OPERABLE	With AC 4160 V Buses 3A, 3B, & 4A OPERABLE	With AC 4160 V Buses 3A, 3B, & 4B OPERABLE
LC 4A	N/A	72[(b)]	N/A
MCC 4A	N/A	N/A	N/A
LC 4C and/or MCC 4C	2[(b)(c)]	2[(b)(c)]	N/A
LC 4H and/or MCC 4D	2[(b)(d)]	2[(b)(d)]	2[(b)(d)]
LC 4B and/or MCC 4B	2[(b)(c)]	N/A	2[(b)(c)]
LC 4D	N/A	N/A	72[(b)]

Title (a) Applicable to Unit 3 based on Unit 4 load centers (LCs) and motor control centers (MCCs) inoperable.

Footnote a (b) Or in accordance with the Risk Informed Completion Time Program.

Footnote * (c) If the battery charger powered from the out-of-service LC and/or MCC is not required by LCO 3.8.4, the out-of-service time is not applicable (N/A).

Footnote ** (d) If neither of the battery chargers powered from the out-of-service LC and/or MCC is required by LCO 3.8.4, the out-of-service time is 72 hours or in accordance with the Risk Informed Completion Time Program.

2 **INSERT 8**

Table 3.8-2

TABLE 3.8.9-2 (page 1 of 1)

LOAD CENTERS AND MOTOR CONTROL CENTERS INOPERABLE

UNIT 4 COMPLETION TIMES[(a)]

Unit 3 Load Centers and Motor Control Centers Inoperable (Any MODE)	Completion Times (hours) Unit 4 – MODES 1, 2, 3 and 4		
	With AC 4160 V Buses 4A, 4B, 3A, & 3B OPERABLE	With AC 4160 V Buses 4A, 4B, & 3A OPERABLE	With AC 4160 V Buses 4A, 4B, & 3B OPERABLE
LC 3A	N/A	72[(b)]	N/A
LC 3C and/or MCC 3C	2[(b)(c)]	2[(b)(c)]	N/A
LC 3H and/or MCC 3D	2[(b)(d)]	2[(b)(d)]	2[(b)(d)]
LC 3B and/or MCC 3B	2[(b)(c)]	N/A	2[(b)(c)]
LC 3D	N/A	N/A	72[(b)]

Title (a) Applicable to Unit 4 based on Unit 3 load centers (LCs) and motor control centers (MCCs) inoperable.

Footnote a (b) Or in accordance with the Risk Informed Completion Time Program.

Footnote * (c) If the battery charger powered from the out-of-service LC and/or MCC is not required by LCO 3.8.4, the out-of-service time is not applicable (N/A).

Footnote ** (d) If neither of the battery chargers powered from the out-of-service LC and/or MCC is required by LCO 3.8.4, the out-of-service time is 72 hours or in accordance with the Risk Informed Completion Time Program.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes are made to the ISTS to reflect the interaction between an operating unit's electrical distribution subsystem and those credited features needing support from the opposite unit's associated electrical distribution subsystem. Subsequent Conditions have been relabeled.

3. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

BASES

BACKGROUND

The onsite Class 1E AC, DC, and AC vital bus electrical power 1distribution systems are divided by train into ~~[~~two~~]~~ redundant and independent AC, DC, and AC vital bus electrical power distribution buses and panels ~~s~~ubsystems. 2

INSERT 1

~~The AC electrical power subsystem for each train consists of a primary Engineered Safety Feature (ESF) 4.16 kV bus and secondary [480 and 120] V buses, distribution panels, motor control centers and load centers. Each [4.16 kV ESF bus] has at least [one separate and independent offsite source of power] as well as a dedicated onsite diesel generator (DG) source. Each [4.16 kV ESF bus] is normally connected to a preferred offsite source. After a loss of the preferred offsite power source to a 4.16 kV ESF bus, a transfer to the alternate offsite source is accomplished by utilizing a time delayed bus undervoltage relay. If all offsite sources are unavailable, the onsite emergency DG supplies power to the 4.16 kV ESF bus. Control power for the 4.16 kV breakers is supplied from the Class 1E batteries. Additional description of this system may be found in the Bases for LCO 3.8.1, "AC Sources - Operating," and the Bases for LCO 3.8.4, "DC Sources - Operating."~~ 1

~~The secondary AC electrical power distribution subsystem for each train includes the safety related buses, load centers, motor control centers, and distribution panels shown in Table B 3.8.9-1.~~

~~The 120 VAC vital buses are arranged in two load groups per train and are normally powered from the inverters. The alternate power supply for the vital buses are Class 1E constant voltage source transformers powered from the same train as the associated inverter, and its use is governed by LCO 3.8.7, "Inverters - Operating." Each constant voltage source transformer is powered from a Class 1E AC bus.~~

~~The DC electrical power distribution subsystem consists of [125] V bus(es) and distribution panel(s).~~

The list of all required DC and ~~vital~~ AC distribution buses ~~[~~and panels~~]~~ is presented in Table B 3.8.9-1. 1 2

1 **INSERT 1**

The station electrical system is designed to provide a simple arrangement of buses, requiring a minimum of switching to restore power to a bus in the event the normal supply to the bus is lost. The basic components of the station electrical system are the 240 kV switchyard, the 4.16 kV subsystem, the 480V subsystem (consisting of load center (LC) buses and motor control center (MCC) buses), the 120V Instrument (Vital) AC Subsystem, and the 125V DC Subsystem. For each unit there are three safety related 4.16 kV switchgear, two of which are fed separately from the double secondary windings of its unit auxiliary transformer under normal operating conditions. At any time when power from the auxiliary transformer is not available, these buses are energized from the double (“X” and “Y”) secondary windings of the startup transformer.

For each unit there are three safety related 4.16 kV switchgear, two of which are fed separately from the double secondary windings of its unit auxiliary transformer under normal operating conditions. Two of the 4.16 kV switchgear, labeled as "A" and "B", provide power to the A and B trains of Engineered Safety Features (ESF), respectively, in each unit. The third safety related 4.16 kV switchgear, labeled as the "D" switchgear, is utilized as a swing bus. It can be manually aligned to either the A or B 4.16 kV bus of its respective unit. An automatic transfer switch provides control power from one of two different DC sources to assure control power will always be available for manual alignment of this swing switchgear. Interlocks ensure that the swing switchgear can only be connected to one 4.16 kV bus at a time. When the 4.16 kV swing switchgear is connected to either of the 4.16 kV supply buses, it is considered an extension of that power supply bus.

Chapter 8 of the UFSAR (Ref.1) provides the description of the AC electrical distribution system. The 480 Volt LC buses are arranged in an identical manner for Units 3 and 4. For each unit there are five safety related 480V LC buses, four of which are energized from different 4.16 kV busses (LCs A and C are fed from Train A and LCs B and D are fed from Train B). This arrangement ensures the availability of equipment associated with a particular function in the event of loss of one 4.16 kV bus. The fifth safety related 480V LC in each unit is a swing LC, which can swing between LC C and D of its associated unit. These LCs are labeled as 3H for Unit 3 and 4H for Unit 4. When the 480V swing LC is connected to either 480V supply bus, it is considered to be an extension of that 480V supply bus. The swing LCs are used to supply shared system and cross-unit loads, and other Technical Specification ACTION statements may be invoked for loss of swing capability.

The 480V system of MCCs are arranged in an identical manner for Units 3 and 4, except for the MCC D (Unit 3) and MCC 4J (Unit 4). There are 31 MCCs between both units, eight per unit are powered by safety related LCs with four per unit of the eight per unit considered vital and two per unit suppling the emergency diesel generator (EDG) support systems. Three of the eight safety related MCC have a vital and a non-vital section, MCCs A, B, and C. The vital MCCs are MCCs A, B, C, and D. The MCCs supplying EDG support systems are MCC 3A and 3K (EDGs 3A and 3B, respectively) and MCCs 4J and 4K (EDGs 4A and 4B, respectively).

1 **INSERT 1 (cont.)**

The 120V Instrument AC System has four sets of equipment for each unit, each set consisting of a 7.5 kVA, 125V DC/120V AC inverter, distribution panel, static transfer switch and an associated constant voltage transformer (CVT) for alternate 120V AC supplied from a vital MCC. Each inverter is normally powered by a separate bus of the vital DC system. Upon overload or loss of the inverter AC output, the static switch in the output of the inverter automatically fast transfers to the alternate AC supply (CVT), if available, to maintain continuity of output power. Four 7.5 kVA, 125V DC/120V AC spare inverters are provided to allow maintenance on the normal inverters. One spare inverter is provided for each pair of normal inverters of the same channel. The spare inverters are manually placed in service and can serve as backup to the normal source for each unit. The alternate AC supply (CVT) is normally aligned with its associated normal inverter but can be aligned with a spare inverter by actuating the Alternate Source Transfer Switch. Each spare inverter can be aligned with the CVT associated with the inverter it is replacing. The vital instrumentation load for each unit is distributed on the four buses in such a manner to avoid the complete loss of any particular function with the loss of any one bus. The arrangement described above assures a reliable 120V AC supply to the vital instrument load.

Due to the shared nature of numerous electrical components between Turkey Point Units 3 & 4, the inoperability of a component on an associated unit will often affect the operation of the opposite unit. These shared electrical components consist primarily of both Startup Transformers, three out of four 4.16 kV buses, and associated 480 V MCCs, all four 125 VDC buses, all eight 120 VAC Vital panels and eight out of twelve Vital AC Inverters, four out of eight battery chargers, and all four battery banks. Depending on the components which is (are) determined inoperable, the resulting ACTION can range from the eventual shutdown of the opposite unit long after the associated unit has been shut down (30 days) to an immediate shutdown of both units. Therefore, ACTION times allow for an orderly sequential shutdown of both units when the inoperability of a components affects both units with equal severity. When a single unit is affected, the time to be in MODE 3 is 6 hours. When an ACTION statement requires a dual unit shutdown, the time to be in MODE 3 is 12 hours. This is to allow the orderly shutdown of one unit at a time and not jeopardize the stability of the electrical grid by imposing a dual unit shutdown.

The ACTION requirements specified for the inoperability of certain MCCs, LCs and the 4.16 kV Busses provide restrictions upon continued facility operation commensurate with the level of degradation on each unit and the amount of time one could reasonably diagnose and correct a minor problem. The level of degradation is based upon the types of equipment powered and the out-of-service limit imposed on that equipment by the associated ACTION statement. If this degradation affects the associated unit only, then no restriction is placed on the opposite unit and an out-of-service limit of 8 hours (except for MCCs 3A, 3K, 4J and 4K) is applied to the associated unit. Because MCCs 3A, 3K, 4J and 4K are used to power EDG auxiliaries the EDGs are declared inoperable immediately, an out-of-service limit is applied as required by LCO 3.8.1. If the degradation impacts both units (i.e., required shared systems or cross-unit loads), then an out-of-service limit of 8 hours is applied to the associated unit and an out-of-service limit based on the most restrictive ACTION requirement for the applicable shared or cross-unit load is applied to the opposite unit. Alternatively, a completion time can be determined in accordance with the Risk Informed Completion Time Program.

BASES

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter ~~[~~6~~]~~ (Ref. 2 ~~1~~), and in the UFSAR, Chapter 14 ~~[15]~~ (Ref. 3 ~~2~~), assume ESF systems are OPERABLE. The AC, DC, and AC vital bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems. 2 1

The OPERABILITY of the AC, DC, and AC vital bus electrical power distribution systems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining power distribution systems OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite power ~~or all onsite AC electrical power~~ and 1

b. A worst case single failure.

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

LCO

The required power distribution buses and panels ~~subsystems~~ listed in Table B 3.8.9-1 ensure the availability of AC, DC, and AC vital bus electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. The AC, DC, and AC vital bus electrical power distribution buses and panels ~~subsystems~~ are required to be OPERABLE. 1 1

Maintaining the Train A and Train B AC, DC, and AC vital bus electrical power distribution buses and panels ~~subsystems~~ OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Therefore, a single failure within any system or within the electrical power distribution subsystems will not prevent safe shutdown of the reactor. 1

OPERABLE AC electrical power distribution ~~sub~~systems require the associated buses, load centers, motor control centers, and distribution panels to be energized to their proper voltages. OPERABLE DC electrical power distribution ~~sub~~systems require the associated buses ~~and distribution panels~~ to be energized to their proper voltage from either the associated battery or charger. OPERABLE vital bus electrical power distribution ~~sub~~systems require the associated buses to be energized to their proper voltage from the associated ~~[~~inverter via inverted DC voltage, ~~inverter using internal AC source,~~ or Class 1E constant voltage transformer~~]~~. 1 1 1 2

INSERT 2 1

---

1 **INSERT 2**

Operating units are subject to accidents that can both affect the grid, and release radioactivity to the outside environment, e.g., Loss of Coolant Accident (LOCA), Main Steam Line Break (MSLB). Thus, to satisfy the design basis requirements for the Control Room HVAC system when a unit is in MODES 1, 2, 3, and 4, the swing LC must be powered from a diesel-backed source. For an operating unit, the swing LC also has to be powered from a diesel-backed source to be considered OPERABLE. The swing LC is considered to be powered from a diesel-backed source if:

a) It is connected to an electrical power train that has an OPERABLE EDG, or

b) It can automatically transfer to a bus that has an OPERABLE EDG.

The swing LC will momentarily de-energize any time it transfers between supply buses (manual, automatic, or test conditions). Because this is the specified manner of operation, the momentary LC de-energization does NOT require entry into the Technical Specification ACTION statement. Although LC H is de-energized for a short period (~1.5 seconds), it is considered to be energized in the specified manner. The design of the transfer scheme inherently relies on break-before-make contacts to swing between the two redundant supply buses. The design allows for a total of 2.5 seconds to accomplish the automatic transfer – 1.5 seconds to trip the supply breaker of the aligned train and an additional 1.0 second delay (i.e., dead time) to close the opposite train supply breaker. This prevents the A and B trains from being interconnected during the transfer function. The basic concept of the transfer is that the transfer only occurs on a dead bus. This is accomplished by tripping and verifying that the bus is dead prior to closing the supply breaker to the alternate power supply.

BASES

LCO (continued)

In addition, tie breakers between redundant safety related AC, DC, and AC vital bus power distribution subsystems, if they exist, must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, that could cause the failure of a redundant subsystem and a loss of essential safety function(s). If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E 4.16 kV buses from being powered from the same offsite circuit.

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown."

ACTIONS

A.1

With one or more Train A and B required AC buses, load centers, motor control centers, or distribution panels (except AC vital buses)~~, in one train~~ inoperable and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the required AC buses, load centers, motor control centers, and distribution panels must be restored to OPERABLE status within 8 hours ~~[~~or in accordance with the Risk Informed Completion Time Program~~]~~. 1 2 3

INSERT 3

Condition A worst scenario is one train without AC power (i.e., no offsite power to the train and the associated ~~DG~~ EDG inoperable). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining train by 1

1

INSERT 3

Condition A is modified by a Note stating that this Condition is not applicable to required LCs and MCCs associated with the opposite unit. Condition A provides the required plant response if any of the three required electrical trains (two from the associated unit and one from the opposite unit), except the required LCs and/or MCCs associated with the opposite unit, become inoperable. Condition B provides the required plant response if any of the LCs and/or MCCs associated with the opposite unit become inoperable.

BASES

ACTIONS (continued)

stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit and

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for DC trains made inoperable by inoperable power distribution subsystems. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Inoperability of a distribution system can result in loss of charging power to batteries and eventual loss of DC power. This Note ensures that the appropriate attention is given to restoring charging power to batteries, if necessary, after loss of distribution systems.

INSERT 4

D ~~B~~.1 3

With one or more AC vital buses inoperable, and a loss of function has not yet occurred, the remaining OPERABLE AC vital buses are capable of supporting the minimum safety functions necessary to shut down the unit and maintain it in the safe shutdown condition. Overall reliability is reduced, however, since an additional single failure could result in the minimum ~~[~~required~~]~~ ESF functions not being supported. ~~Therefore, the required AC vital bus must be restored to OPERABLE status within 2 hours by powering the bus from the associated [inverter via inverted DC, inverter using internal AC source, or Class 1E constant voltage transformer]. [Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.]~~ 2 1

INSERT 5

Condition ~~B~~ D represents one or more AC vital buses without power; potentially both the DC source and the associated AC source are nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all noninterruptible power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining vital buses and restoring power to the affected vital bus. 3

1 **INSERT 4**

B.1

With one or more opposite unit Train A or B required AC LCs or MCCs inoperable and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. Condition A provides the required plant response if any of the three required electrical trains (two from the associated unit and one from the opposite unit), except the required LCs and/or MCCs associated with the opposite unit, become inoperable. Condition B provides the required plant response if any of the LCs and/or MCCs associated with the opposite unit become inoperable and references Table 3.8.9-1 and 3.8.9-2 which, due to their tabular format, support easier understandability. The Required Actions and associated Completion Times specified on Tables 3.8.9-1 and 3.8.9-2 are based on the Required Actions and associated Completion Times for required equipment (e.g., battery chargers, opposite unit EDG auxiliaries, etc.) that receive electrical power from the opposite unit's LCs/MCCs as specified. The 2 hour Completion Time is used for loss of power to a 125 VDC bus and the 72-hour Completion Time is used for loss of power to the required opposite unit EDG auxiliaries. For cases where no required equipment (i.e., needed to support the opposite unit's operation) is powered from an MCC, "N/A" is indicated in these tables. "N/A" means not applicable and no action is necessary.

Condition B is modified by a Note stating that this Condition is only applicable to LCs and MCCs associated with the opposite unit. Condition A is applicable to the other AC distribution buses.

C.1

Motor control centers MCC 3A, MCC 4J, MCC 3K, and MCC 4K provide power to their associated EDG support systems EDG 3A, 4A, 3B, and 4B, respectively. Because MCCs 3A, 3K, 4J and 4K are used to power EDG auxiliaries the associated EDG is declared inoperable immediately and the out-of-service limit of LCO 3.8.1 is applied as required.

1 **INSERT 5**

The ACTION requirements specified when an A.C. vital panel is NOT energized from an inverter connected to its associated D.C. bus provides for two phases of restoration. Expedient restoration of an A.C. panel is required due to the degradation of the Reactor Protection System and vital instrumentation. The first phase requires re-energization of the A.C. vital panel within 2 hours. During this phase the panel may be powered by a Class 1E CVT fed from a vital MCC. However, the condition is permissible for only 24 hours as the second phase of the ACTION requires re-energization of the A.C. vital panel from an inverter connected to its associated D.C. bus within 24 hours, required by LCO 3.8.7. Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.

BASES

ACTIONS (continued)

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that are without adequate vital AC power. Taking exception to LCO 3.0.2 for components without adequate vital AC power, that would have the Required Action Completion Times shorter than 2 hours if declared inoperable, is acceptable because of:

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) and not allowing stable operations to continue,

b. The potential for decreased safety by requiring entry into numerous Applicable Conditions and Required Actions for components without adequate vital AC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train, and

c. The potential for an event in conjunction with a single failure of a redundant component.

The 2 hour Completion Time takes into account the importance to safety of restoring the AC vital bus to OPERABLE status, the redundant capability afforded by the other OPERABLE vital buses, and the low probability of a DBA occurring during this period. Failure to satisfy this Required Action results in a dual unit shutdown. 1

~~C~~E.1

With one or more DC buses ~~or distribution panels~~ inoperable, and a loss of function has not yet occurred, the remaining DC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining DC electrical power distribution subsystem could result in the minimum required ESF functions not being supported. Therefore, the ~~[required]~~ DC buses ~~and distribution panels~~ must be restored to OPERABLE status within 2 hours by powering the bus from the associated battery or charger. ~~[~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~]~~ 1 2 1 2

Condition ~~C~~E represents one or more DC buses ~~or distribution panels~~ without adequate DC power; potentially both with the battery significantly degraded and the associated charger nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all DC 3 1

BASES

ACTIONS (continued)

power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining trains and restoring power to the affected train.

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that would be without power. Taking exception to LCO 3.0.2 for components without adequate DC power, which would have Required Action Completion Times shorter than 2 hours, is acceptable because of:

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) while allowing stable operations to continue,

b. The potential for decreased safety by requiring entry into numerous applicable Conditions and Required Actions for components without DC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train, and

c. The potential for an event in conjunction with a single failure of a redundant component.

4 The 2 hour Completion Time for DC buses is consistent with Regulatory Guide 1.93 (Ref. 4 3). Failure to satisfy this Required Action results in a dual unit shutdown. 1

~~D~~F.1 and ~~D~~F.2 3

If the inoperable distribution subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which overall plant risk is reduced. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant 5 risk in MODE 4 is similar to or lower than MODE 5 (Ref. 5 ~~4~~). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 4, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective. 1

BASES

ACTIONS (continued)

F

Required Action ~~D~~.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. 3

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

H

~~E~~.1 3

H

Condition ~~E~~ corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. 3

bus and panel

When more than one inoperable electrical power distribution ~~subsystem~~ results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown. 1

INSERT 6

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

This Surveillance verifies that the ~~[~~required~~]~~ AC, DC, and AC vital bus 2

buses and panels

electrical power distribution ~~systems~~ are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures 1

trains

the appropriate separation and independence of the electrical ~~divisions~~ is maintained, and the appropriate voltage is available to each required bus. 1

and panels

The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control 1

and panels

functions for critical system loads connected to these buses. ~~[The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~ 1 2

~~OR~~

1 **INSERT 6**

Another alternate Completion Time for the D.C. bus is 24 hours with one unit shutdown in order to allow for required battery maintenance without requiring both units to be shutdown.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~---]~~ 4

REFERENCES

1. UFSAR Chapter 8

2 ~~1~~. U FSAR, Chapter [6]. 1 2

3 ~~2~~. U FSAR, Chapter 14 ~~[15]~~. 1 2

4 ~~3~~. Regulatory Guide 1.93, December 1974. 1

5 ~~4~~. WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010. 1

Table B 3.8.9-1 (page 1 of 1)
AC and DC Electrical Power Distribution Systems

~~TYPE~~	~~VOLTAGE~~	~~TRAIN A*~~	~~TRAIN B*~~
~~AC safety buses~~	~~[4160 V]~~	~~[ESF Bus] [NB01]~~	~~[ESF Bus] [NB02]~~
	~~[480 V]~~	~~Load Centers [NG01, NG03]~~	~~Load Centers [NG02, NG04]~~
	~~[480 V]~~	~~Motor Control Centers [NG01A, NG01I, NG01B, NG03C, NG03I, NG03D]~~	~~Motor Control Centers [NG02A, NG02I, NG02B, NG04C, NG04I, NG04D]~~
	~~[120 V]~~	~~Distribution Panels [NP01, NP03]~~	~~Distribution Panels [NP02, NP04]~~
~~DC buses~~	~~[125 V]~~	~~Bus [NK01]~~	~~Bus [NK02]~~
		~~Bus [NK03]~~	~~Bus [NK04]~~
		~~Distribution Panels [NK41, NK43, NK51]~~	~~Distribution Panels [NK42, NK44, NK52]~~
~~AC vital buses~~	~~[120 V]~~	~~Bus [NN01]~~	~~Bus [NN02]~~
		~~Bus [NN03]~~	~~Bus [NN04]~~

~~* Each train of the AC and DC electrical power distribution systems is a subsystem.~~

INSERT 7

1

1 **INSERT 7**

TYPE	VOLTAGE	TRAIN A*	TRAIN B*
AC safety bus	4160 V	Bus A	Bus B
	480 V	Load Center A, C, H**	Load Centers B, D, H**
	480 V	Motor Control Center*** A****, C, D*	Motor Control Center*** B, D*
	480 v	Motor Control Center*** 3A 4J	Motor Control Center*** 3K 4K
DC bus	125 V	Bus 3A	Bus 3B
		Bus 4A	Bus 4B
AC vital Panel	120 V	3P07, 3P22 4P07, 4P22	3P06, 3P21 4P06, 4P21
		3P09, 3P24 4P09, 4P24	3P08, 3P23 4P08, 4P23

* Tie breakers must be open between redundant buses within the unit and between the buses of Units 3 and 4. However, with the opposite unit in MODE 5, 6, or defueled, its 480 V LC can be cross-tied under conditions specified in LCO 3.8.10 and LCO 3.8.10 Bases.

** Electrical bus can be energized from either train of its unit and swing function to opposite train must be OPERABLE for the Unit(s) in MODES 1, 2, 3, and 4 and may be momentarily de-energized when shifting power supplies.

*** For MCC buses, vital sections only.

**** Unit 4 Only

Technical Specification Bases Table B3.8.9-1 has a ** footnote that states: "Electrical bus can be energized from either train of its unit and swing function to opposite train must be OPERABLE for the Unit(s) in MODES 1, 2, 3, and 4." The ** footnote establishes that TS LCO 3.8.9 is met by the electrical bus train energizing the swing LC H and MCC D. Therefore, any loss of power to swing LC H or MCC D, or the loss of swing capability only affects the fully energized requirement for the associated bus train and not the opposite bus train because the opposite bus train was not being relied on to meet the LCO. LCO 3.8.9 Condition A or Condition B is entered depending on whether the electrical bus train is for the associated unit or opposite unit, respectively.

Tables 3.8.9-1 and 3.8.9-2

Condition A provides the required plant response if any of the three required electrical trains (two from the associated unit and one from the opposite unit), except the required LCs and/or MCCs associated with the opposite unit, become inoperable. Condition B provides the required plant response if any of the LCs and/or MCCs associated with the opposite unit become inoperable. Condition B references Tables 3.8.9-1 and 3.8.9-2 which, due to their tabular format, provide for easier understandability. Because the electrical distribution system has no shared MCCs between units or MCCs with "normal" and "alternate" power supplies Tables 3.8.9-1 and 3.8.9-2 provide appropriate Required Actions based on the MCC inoperable.

If LC H is energized from a LC (either C or D) that does not have an OPERABLE EDG aligned to it and the swing function is also inoperable, then a 2 hour or a 72 hour Action, or a completion time determined in accordance with the Risk Informed Completion Time Program would have to be entered, depending on the battery charger requirements (Technical specification Tables 3.8-1 and 3.8-2).

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9 BASES, DISTRIBUTION SYSTEMS - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the Improved Standard Technical Specification (ISTS) Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

3. Changes are made to be consistent with changes made to the Specification.

4. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 10

ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.10

M01

See ITS 3.8.2

LCO 3.8.10 3.8.1.2 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE~~:

a. One startup transformer and associated circuits, or an alternate circuit, between the offsite transmission network and the 4160 volt bus, A or B, and

b. One diesel generator with:

1) For Unit 3 (3A or 3B)

A skid-mounted fuel tank and a day fuel tank, with an OPERABLE solenoid valve to permit gravity flow from the day tank to the skid mounted tank, with the two tanks together containing a minimum of 2000 gallons of fuel oil

For Unit 4 (4A or 4B)

A day fuel tank containing a minimum volume of 230 gallons of fuel

2) A fuel storage system containing a minimum volume of fuel of 38,000 gallons (Unit 3). 34,700 gallons (Unit 4)**

3) An associated fuel transfer pump**

See ITS 3.8.2

See ITS 3.8.3

4) For Unit 3 only, lubricating oil storage containing a minimum volume of 120 gallons of lubricating oil

5) For Unit 3 only capability to transfer lubricating oil from storage to the diesel generator unit and

6) ~~Energized MCC bus (as identified by Specification 3.8.1.1.b.).~~

LA01

See ITS 3.8.2

Applicability APPLICABILITY: MODES 5* and 6*.

During movement of irradiated fuel assemblies

M02

ACTION:

Add proposed ACTIONS Note

NOTE: Enter the ACTION of LCO 3.8.3.2, "Onsite Power Distribution - Shutdown," with one required train de-energized as a result of inoperable offsite circuit.

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 2.2 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible and increase RCS inventory as soon as possible.

See ITS 3.8.2

See ITS 3.8.3

* CAUTION - If the opposite unit is in MODES 1. 2. 3, or 4 see Specification 3.8.1.1

** A temporary Class III fuel storage system containing a minimum volume of 38,000 gallons of fuel oil may be used for up to 10 days during the performance of Surveillance Requirement 4.8.1.1.2i.1 for the Unit 3 storage tank while Unit 3 is in Modes 5, 6, or defueled. If the diesel fuel oil storage tank is not returned to service within 10 days, Technical Specification 3.8.1.1 Action b and 3.8.1.2 Action apply to Unit 4 and Unit 3 respectively.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the requirements of Specifications 4.8.1.1.1.a and 4.8.1.1.2 (except for Specification 4.8.1.1.2a.5).

See ITS 3.8.2

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.10 M01

LCO 3.8.10 3.8.3.2 ~~As a minimum, the following electrical busses shall be energized in the specified manner~~:

LA01

~~a.~~ ~~One train of A.C. emergency busses associated with the unit (3.8.3.1a. or b.) consisting of one 4160-volt and three 480-volt A.C. emergency busses load centers* and three (four for Unit 4 Train A) vital sections of motor control center busses,~~

See ITS 3.8.8

~~b.~~ ~~Two 120-volt A.C. vital busses for the unit energized~~ from their associated inverters** connected to their respective D.C. busses, ~~and~~

See ITS 3.8.5

~~c.~~ ~~Three 125-volt D.C. busses energized~~ from their associated battery banks.

LA02

Applicability APPLICABILITY MODES 5~~***~~ and 6~~***~~.

During movement of irradiated fuel assemblies M02

ACTION:

Add proposed ACTIONS Note

L01

Action A With any of the above required electrical busses not energized ~~in the required manner~~, immediately suspend all operations involving ~~CORE ALTERATIONS, positive reactivity changes~~, or movement of irradiated fuel, initiate corrective action to energize the required electrical busses ~~in the specified manner~~ as soon as possible, ~~and within 8 hours, depressurize and vent the RCS through at least a 2.2 square inch vent~~.

L02

Add proposed Required Actions A.2.1 and A.2.2

Add proposed Required Action A.1

L03

SURVEILLANCE REQUIREMENTS

M01

SR 3.8.10.1 4.8.3.2 The specified busses shall be determined energized ~~in the required manner~~ by verifying correct breaker alignment and indicated voltage on the busses in accordance with the Surveillance Frequency Control Program.

L01

Add proposed Required Action A.2.4 M03

LA01

~~* With the opposite unit in MODE 1, 2, 3, or 4, the 480-volt load centers can only be cross-tied upon issuance of an engineering evaluation to prevent exceeding required electrical components maximum design ratings and to ensure availability of the minimum required equipment.~~

See ITS 3.8.8

** A backup inverter may be used to replace the normal inverter provided the normal inverter on the same DC bus for the opposite unit is not replaced at the same time.

LA02

~~*** CAUTION - If the opposite unit is in MODES 1, 2, 3, or 4, see the corresponding Limiting Condition for Operation 3.8.3.1.~~

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 5.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.1.2.b.6 requires, in part, one Emergency Diesel Generator (EDG) with an energized motor control center (MCC) bus (as identified by Specification 3.8.1.1.b. CTS 3.8.3.2 states, in part, that as a minimum, the following AC buses shall be energized in the specified manner and then lists the applicable busses and how the buses are energized. ITS LCO 3.8.10 states that the necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. In addition, an optional Required Action (ITS 3.8.10 Required Action A.1) has been added which allows the associated supported required feature(s) to be declared inoperable. This changes the CTS by requiring those necessary portions of electrical power distribution subsystems to be OPERABLE to support equipment required to be OPERABLE, which could require more distribution buses or panels to be OPERABLE than is currently required. In addition, an action has been added to allow an option to the existing actions.

The purpose of CTS 3.8.1.2.b.6 and CTS 3.8.3.2 is to ensure that a minimum number of electrical buses are energized (i.e., OPERABLE). This change adds a requirement that the applicable portions of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE by the Technical Specifications. This added restriction conservatively assures the needed electrical power distribution boards and panels are OPERABLE, even if this results in both trains of one or more of the electrical power distribution systems being required. Because the ITS 3.8.10 electrical power distribution subsystem OPERABILITY requirements require the necessary portions of the distribution subsystems to be OPERABLE to support equipment required to be OPERABLE, if a portion of the electrical power distribution subsystem cannot supply any required equipment, that electrical power distribution subsystem is inoperable. In this event, it may not be necessary to suspend irradiated fuel handling and positive reactivity additions. Conservative actions can be assured if all required equipment without the necessary power is declared inoperable, and the associated ACTIONS of the individual equipment is taken (ITS 3.8.10 Required Action A.1). Therefore, along with the conservative additional requirements placed on the electrical power distribution subsystems, Required Action A.1, which requires the associated supported equipment to be declared inoperable, is also added. These changes are acceptable because the additions represent restrictions consistent with implicit assumptions for operation in shutdown conditions (required equipment receiving the necessary required power). This change is designated as more restrictive because it adds a new requirement to the CTS, where more buses may be required to be OPERABLE in ITS than in CTS.

M02 CTS 3.8.1.2 and CTS 3.8.3.2 are applicable in MODES 5 and 6. ITS 3.8.10 is applicable in MODES 5 and 6 and during movement of irradiated fuel assemblies and has an ACTIONS Note stating that Limiting Condition for Operation (LCO) 3.0.3 is not applicable. This changes the CTS by adding the Applicability of "During movement of irradiated fuel assemblies," and adds a Note to the ACTIONS stating that LCO 3.0.3 is not applicable.

This change is acceptable because the proposed requirements are necessary to ensure the electrical power subsystems are OPERABLE to support equipment required to be OPERABLE during movement of irradiated fuel assemblies. Movement of fuel normally occurs during MODES 5 and 6; however, it can also occur outside of containment in other plant MODES (MODES 1, 2, 3, and 4) or other conditions (i.e., reactor defueled). This addition to the applicability is needed to ensure the appropriate electrical distribution system requirements are specified during fuel handling and to ensure the appropriate actions are taken (i.e., stop fuel movement) when the minimum electrical supply is not available. In addition, this change adds a clarification Note stating that LCO 3.0.3 is not applicable because LCO 3.0.3 has no Required Actions that restore safety with respect to the movement of irradiated fuel. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable because LCO 3.0.3 applicability is limited to MODES 1, 2, 3, and 4 only with a designated endpoint of MODE 5. In addition, if moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with ITS 3.8.10 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary since defaulting to LCO 3.0.3 would require the reactor to be shut down, but would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as more restrictive because the ITS requires equipment to be OPERABLE during movement of irradiated fuel assemblies both inside and outside of the containment, not only when in MODES 5 and 6.

M03 CTS 3.8.3.2 Action does not contain a Required Action to declare associated required residual heat removal subsystem(s) inoperable and not in operation. ITS 3.8.10, Required Action A.2.4 requires that when one or more required AC, DC, or AC vital bus electrical power distribution buses inoperable to declare the associated required residual heat removal (RHR) subsystem(s) inoperable and not in operation unless the associated supported required feature(s) were declared inoperable. This changes the CTS by potentially requiring declaring the associated required residual heat removal subsystem(s) inoperable and not in operation when one or more required AC, DC, or AC vital bus electrical power distribution buses inoperable.

This change is acceptable because notwithstanding performance of the other Required Actions, a required RHR subsystem may be inoperable. In this case, the other Required Actions do not adequately address the concerns relating to coolant circulation and heat removal and pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.4 is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions. This change is designated as more restrictive because additional Required Actions may be taken in the ITS then are in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.1.2 requires AC electrical power sources to be OPERABLE, listing the sources and subsystems. CTS LCO 3.8.3.2 requires AC electrical buses to be OPERABLE, listing the buses. ITS LCO 3.8.10 requires necessary portions of the AC, DC, and AC vital electrical power distribution subsystems to be OPERABLE to support equipment required to be OPERABLE. ITS Surveillance Requirement (SR) 3.8.10.1 requires the verification of correct breaker alignment and voltage to each required AC, DC, and vital AC electrical power distribution subsystem. The details of the buses are contained in the ITS Bases. This changes the CTS by removing the description of the minimum required buses from the CTS to the ITS Bases.

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the electrical power distribution subsystems to be OPERABLE and requires the verification of correct breaker alignment and voltage to required AC and DC electrical power distribution subsystems. This change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.8.3.2 Applicability includes a footnote *** that states "CAUTION - If the opposite unit is in MODES 1, 2, 3, or 4, see the corresponding Limiting Condition for Operation 3.8.3.1." ITS 3.8.10 does not include this caution. This changes the CTS by moving the caution to review the operating units' Technical Specifications from the CTS to the ITS Bases.

The removal of this guidance for performing actions to review the operating units Technical Specifications from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical

Specifications to provide adequate protection of public health and safety. The ITS still retains requirement to ensure all LCOs are met. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for ensuring Technical Specification requirements are reviewed are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.3.2 states that as a minimum, the following electrical busses shall be energized in the specified manner with a specific manner of energization, then provides a list of buses with a specific manner of energization listed for the 120 VAC vital buses and the 125 VDC buses. In addition, CTS 3.8.2.3 ACTION provides actions to perform if the buses are not energized in the required manner: ITS 3.8.10 states that the necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. This changes the CTS by specifying how the buses must be energized, stating that the buses must be OPERABLE, thus relying on the definition of OPERABLE/OPERABILITY to decide the manner of energization.

The purpose of CTS 3.8.3.2 is to provide an LCO for the onsite power distribution system when shutdown. This change is acceptable because the LCO requirements continue to ensure that the systems are maintained consistent with the safety analyses and licensing basis. The ITS definition of OPERABLE states that a system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). In addition, ITS LCO 3.8.5, "DC Source – Shutdown," and ITS LCO 3.8.8, "Inverters – Shutdown," provide requirements for the source of power to the DC buses and 120 VAC vital panels. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.3.2 ACTION requires, in part, that with any of the above required electrical buses not energized in the required manner, the Reactor Coolant System (RCS) must be depressurized and vented within 8 hours through at least a 2.2 square inch vent. ISTS 3.8.8 does not include this Required Action. ITS LCO 3.4.12, "Overpressure Mitigation System," provides requirements for RCS pressure relief when in MODES 4, 5, or 6 to depressurize and establish an RCS vent of ≥ 2.2 square inches within 12 hours if the other pressure relief methods are incapable of limiting pressure. This changes the CTS by relying on ITS LCO 3.4.12 to provide the Required Actions and allowing a longer Completion Time to depressurize the RCS and establish a ≥ 2.2 square inch RCS vent.

The purpose of CTS 3.8.3.2 Action is to provide remedial actions to be taken with any of the above required electrical buses not energized in the required manner while in MODE 5 or 6. One of these remedial actions is to depressurize and vent the RCS through at least a 2.2 square inch vent, which is being proposed for deletion. This change is acceptable because the CTS 3.8.3.2 ACTION to depressurize and vent the RCS is duplicative of the ITS LCO 3.4.12 Required Action to depressurize and vent the RCS. In addition, ITS 3.4.12 Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of an event occurring during the allowed Completion Time. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.3.2 ACTION states, in part, that that with any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel. ITS Required Actions A.2.1 and A.2.2 provide Actions to be performed under similar conditions. These ITS Required Actions state to suspend movement of irradiated fuel assemblies and suspend operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN (SDM) or boron concentration. This changes the CTS Actions by deleting the requirement to suspend CORE ALTERATIONS and to clarify to only suspend positive reactivity additions when it could result in loss of required SDM or boron concentration.

The purpose of the CTS 3.8.3.2 ACTION is to minimize the possibility of an event that may need a required electrical bus to mitigate the consequences of the event. CORE ALTERATIONS is defined in CTS 1.9, in part, as "the movement of any fuel, sources, reactivity control components, or other components affecting reactivity, within the reactor vessel with the head removed and fuel in the vessel." CORE ALTERATIONS only occur when the reactor vessel head is removed and only applies in MODE 6. There is only one accident considered during MODE 6 that involves CORE ALTERATIONS: a fuel handling accident. According to the Standard Review Plan, a fuel handling accident is initiated by the dropping of an irradiated fuel assembly, either in the containment or in the fuel building. Suspension of CORE ALTERATIONS, except for suspension of movement of irradiated fuel, would not prevent or impair the mitigation of a fuel handling accident.

CTS 3.8.3.2 ACTION also requires that with less than the above minimum required electrical busses, immediately suspend all operations involving positive reactivity changes while ITS Required Action A.2.2 requires only suspending operations involving positive reactivity additions that could result in loss of required SDM [shutdown margin] or boron concentration. This change is acceptable because it allows for positive reactivity additions that do not result in loss of required SDM or boron concentration (e.g., water addition or temperature change) assuring continued safe operation.

This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

3.8.1.2,
3.8.3.2
DOC M01

LCO 3.8.10 The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

Applicability
DOC M02

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

ACTIONS

DOC M02

---NOTE---
LCO 3.0.3 is not applicable.

Action
DOC M01
DOC L03

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital bus electrical power distribution ~~subsystems~~ buses inoperable.	A.1 Declare associated supported required feature(s) inoperable. OR A.2.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies. AND A.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND	Immediately Immediately Immediately

2
1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.3 Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution ~~subsystems~~ buses to OPERABLE status.	Immediately
	AND	
DOC M03	A.2.4 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately

2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.8.2.3	SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution ~~subsystems~~ buses.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~

1 2

1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

1. The Improved Standard Technical Specification (ISTS) contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is inserted to reflect the current licensing basis.

2. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

BACKGROUND

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

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident and transient analyses in the U FSAR, Chapter ~~[~~6~~]~~ (Ref. 1) and Chapter 14 ~~[15]~~ (Ref. 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The AC, DC, and AC vital bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. 2 1

The OPERABILITY of the AC, DC, and AC vital bus electrical power distribution system is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

The OPERABILITY of the minimum AC, DC, and AC vital bus electrical power distribution subsystems during MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 1

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate power is provided to mitigate events postulated during shutdown, such as a fuel handling accident ~~[involving handling recently irradiated fuel. Due to radioactive decay, AC and DC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~. 1

The AC and DC electrical power distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components - all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

INSERT 1 2

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., INSERT 2 fuel handling accidents ~~[involving handling recently irradiated fuel]~~). 2 1

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, provide assurance that: 1

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core,

b. Systems needed to mitigate a fuel handling accident ~~[involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)]~~ are available, 1

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition and refueling condition.

The AC, DC, and AC vital bus electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9. INSERT 3 2

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

2

INSERT 1

3.8.3.2 As a minimum, the following electrical buses shall be energized:

a. One train of AC emergency buses associated with the unit consisting of one 4.16 kV and three 480 VAC emergency buses load centers* and three (four for Unit 4 Train A) vital sections of motor control center busses (The Vital sections of the MCCs shown in Table B 3.8.10-1 must be energized to satisfy this requirement),

b. Two 120 VAC vital buses for the unit, and

c. Three 125 VDC buses.

* With the opposite unit in MODE 1, 2, 3, or 4, the 480 V load centers can only be cross tied upon issuance of an engineering evaluation to prevent exceeding required electrical components maximum design ratings and to ensure availability of the minimum required equipment.

2

INSERT 2

Table B 3.8.10-1

	Train in Service(a)				**Reason**
	3A	**3B**	**4A**	**4B**	
MCCs	3A	3B	4A	4B	Major Safety MCCs
	3C		4C		Major Safety MCCs
	3D	3D	4D	4D	CR HVAC
		3K	4J	4K	EDG Auxiliaries

(a) MCCs 3K, 4J, and 4K were added during the EPS Upgrade Project. Auxiliaries for the 3A EDG were left on the 3A MCC. As a result, only Unit 4 Train A needs four MCC vital sections energized.

2

INSERT 3

Applicability *** If the opposite unit is in MODES 1, 2, 3, or 4, see the corresponding LCO 3.8.9.

BASES

ACTIONS (continued)

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of [recently] irradiated fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend movement of [recently] irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC and DC electrical power distribution subsystems and to continue this action until restoration is accomplished in order to provide the necessary power to the unit safety systems.

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through A.2.4 do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.5 is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions.

BASES

ACTIONS (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power.

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the AC, DC, and AC vital bus electrical power distribution subsystems are functioning properly, with all the buses energized. The verification of proper voltage availability on the buses ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these buses. ~~[The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~ 1

~~OR~~

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~
~~--]~~ 3

REFERENCES

1. U FSAR, Chapter ~~[~~6~~]~~. 2 1
2. U FSAR, Chapter ~~[15]~~ 14. 2 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.10 BASES, DISTRIBUTION SYSTEMS - SHUTDOWN

1. The Improved Standard Technical Specification (ISTS) contains bracketed information and/or values that are generic to Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is inserted to reflect the current licensing basis.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This Note is not meant to be retained in the final version of the plant specific submittal.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

There are no specific No Significant Hazards Considerations for this Specification.

ATTACHMENT 11
Relocated/Deleted Current Technical Specifications (CTS) in the Turkey Point Unit 3 and Unit 4 ITS Conversion

NONE

ATTACHMENT 12
Improved Standard Technical Specifications (ISTS) Not Adopted in the Turkey Point Unit 3 and Unit 4 ITS Conversion

NONE