VOLUME 13

CNP UNITS 1 AND 2
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)

ITS 3.8.1

ITS

A.1

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: LA.1

a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two ~~separate and independent~~ diesel generators, each with: LA.1

SR 3.8.1.4 1. A ~~separate~~ day fuel tank containing a minimum of ~~70~~ 101.4 gallons of fuel, A.12

2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and See ITS 3.8.3

Add proposed LCO 3.8.1.c and d A.2

3. A separate fuel transfer pump. LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed Applicability Note and ITS ACTIONS A and B for Unit 2 AC Sources M.2

ACTION:

ACTION A, ACTION F

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least ~~two~~ one offsite circuit~~s~~ and ~~two diesel generators~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

L.1

Add proposed Required Action A.3 second Completion Time

ACTION B, ACTION F

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 12 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generator~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.~~

L.21

L.1

Add proposed Required Action B.4 second Completion Time

L.2

*Tanks are separate between diesels but shared between Units 1 and 2. See ITS 3.8.3

ITS 3.8.1

ITS

A.1

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

Add proposed Required Action D Note — A.3

ACTION D — c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*

Required Action A.1; Required Actions B.3.1 and B.3.2; ACTION D; ACTION F

12 — L.21

L.1

and MODE 5 within 36 hours — M.3

ACTION C — d. With two of the above required offsite A.C. circuits inoperable, restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.*

ACTION F

L.1

ACTION E — e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a 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. With one diesel generator unit restored, follow ACTION Statement b* or c*.

Required Action B.1; ACTION E; ACTION F

L.1

* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.

L.1

SURVEILLANCE REQUIREMENTS

Add proposed ACTION G — A.4

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

SR 3.8.1.1 — a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and

A.9

Add proposed Note 1 to SR 3.8.1.9

24 — L.3

SR 3.8.1.9 — b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. ~~In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by~~:

SR 3.8.1.4 — 1. Verifying the fuel level in the day tank, (every 31 days) (L.5)

2. Verifying the fuel level in the fuel storage tank, (See ITS 3.8.3)

SR 3.8.1.6 — 3. Verifying that the fuel transfer pump (system) can be started (automatically) and that it transfers fuel from the storage system to the day tank, (92 days) (LA.1) (M.4) (L.19)

SR 3.8.1.2, SR 3.8.1.8, SR 3.8.1.16 — 4. Verifying that the diesel starts from standby (steady state) conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz.* (L.2) (every 31 days) (voltage ≥ 3740 V and frequency ≥ 58.8 Hz) (L.18) (M.5)

SR 3.8.1.3 — 5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and (≥ 3150 kW and ≤) (L.6)

6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses. (L.2) (every 31 days) (LA.2)

b. By removing accumulated water*** (See ITS 3.8.3)

SR 3.8.1.5 — 1) From the day tank at least once per 31 days ~~and after each occasion when the diesel is operated for greater than 1 hour,~~ and (L.7)

2) From the storage tanks at least once per 31 days. (See ITS 3.8.3)

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has: (See ITS 5.5)

Add proposed SR 3.8.1.7 (M.6)

Add proposed Note 1 to SR 3.8.1.2, Note to SR 3.8.1.8, and Note 2 to SR 3.8.1.16 (A.5)

SR 3.8.1.8 — * The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer ~~so that mechanical stress and wear on the diesel engine are minimized~~. (LA.5)

Note 2 to SR 3.8.1.2 — Add proposed Note 1 to SR 3.8.1.3 (A.6)

Note 2 to SR 3.8.1.3 — ** Momentary load transients do not invalidate this test.

Add proposed Notes 3 and 4 to SR 3.8.1.3 (M.7)

*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. (See ITS 3.8.3)

ITS 3.8.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60° when compared to the supplier's certificate.

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

See ITS 5.5

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.

See ITS 3.8.3

A.10

L.8

SR 3.8.1.10 through SR 3.8.1.19 e. At least once per ~~18~~ 24 months, ~~during shutdown~~, by:

L.3

1. ~~Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,~~

LA.3

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

See ITS 3.8.3

ITS 3.8.1

ITS

A.1

M.8 M.5 LA.4 L.9 L.6 M.8 L.10 M.1 A.5 L.11

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

Add proposed Note 2 to SR 3.8.1.10

single largest post-accident load

SR 3.8.1.10 — 2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz,

the frequency ≤ 64.4 Hz and within 2 seconds

Add proposed Note 2 to SR 3.8.1.11

≥ 3150 kW and ≤

SR 3.8.1.11 — 3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint,

without tripping the DG

voltage is maintained ≤ 5000 V

Add proposed Note 1 to SR 3.8.1.12

actual or

SR 3.8.1.12 — 4. Simulating a loss of offsite power by itself, and:

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,

b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 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 shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.

M.5 A.5 L.11 M.9

Add proposed Note 1 to SR 3.8.1.13

actual or

SR 3.8.1.13 — 5. Verifying that, on a Safety Injection actuation test 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.

Add SR 3.8.1.13 parts a, b, d, and e

Add proposed Note 1 to SR 3.8.1.19

A.5

actual or

L.11

SR 3.8.1.19 — 6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 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 load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

M.5

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ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.6

A.11

SR 3.8.1.14 c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus ~~and~~/or Safety Injection actuation signal.

L.12

≥ 3150 kW and ≤

Add proposed Note 3 to SR 3.8.1.15

SR 3.8.1.15
SR 3.8.1.16

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

A.5

Add proposed Note 2 to SR 3.8.1.16

~~8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.~~

L.13

SR 3.8.1.17

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.

~~10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:~~

~~a) Returning the diesel generator to standby operation, and~~

~~b) Verifying the emergency loads are serviced by offsite power.~~

L.20

SR 3.8.1.18

11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

SR 3.8.1.20

f. At least once per 10 years by:

1. Employing one of the following cleaning methods to clean the fuel oil storage tanks:

a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

See ITS 3.8.3

SR 3.8.1.15 Note 1, SR 3.8.1.16 Note 1

* Momentary transients outside the load and power factor range do not invalidate this test.

SR 3.8.1.16 Note 1

** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours ~~or until operating temperature has stabilized~~.

≥ 3150 kW and ≤

L.6

A.8

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ITS 3.8.1

A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

See ITS 3.8.3

A.5 Add proposed Note to SR 3.8.1.20

SR 3.8.1.20

3) Starting both diesel generators simultaneously, ~~during shutdown~~, and verifying that both diesel generators accelerate to at least ~~514 RPM~~ in less than or equal to 10 seconds.*

L.14

M.10 Add proposed voltage limit

L.15 58.8 Hz

M.11 Add proposed SR Notes 1 and 2

Add proposed SR 3.8.1.21

~~*Shall be performed after any modifications which could affect diesel generator interdependence.~~

L.16

ITS

A.1

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

L.2

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS 3.8.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification, except as provided in Specification 3.0.6.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification, except as provided in Specification 3.0.6. *In the event the Limiting Condition for Operation is restored prior to expiration of the* specified time interval, completion of the ACTION statement is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

See ITS Section 3.0

1. At least *HOT STANDBY* within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

3.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted. This provision shall not prevent passage through OPERATIONAL MODES as required to comply with ACTION statements.

Required Actions A.2, B.2, and C.1

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

L.17

24 hours for proposed Required Action A.2
4 hours for proposed Required Actions B.2
12 hours for proposed Required Action C.1

~~1. At least HOT STANDBY within the next 6 hours,~~
~~2. At least HOT SHUTDOWN within the following 6 hours, and~~
~~3. At least COLD SHUTDOWN within the subsequent 24 hours.~~

Declare required features inoperable.

L.17

~~This Specification is not applicable in MODES 5 or 6.~~

A.7

3.0.6 Equipment removed from service or declared inoperable to comply with ACTION requirements may be returned to service under administrative controls solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to Specifications 3.0.1 and 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

See ITS Section 3.0

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ITS 3.8.1

ITS

A.1

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:

qualified LA.1

a. Two ~~physically independent~~ circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two ~~separate and independent~~ diesel generators, each with: LA.1

SR 3.8.1.4 — 1. A ~~separate~~ day fuel tank containing a minimum of ~~70~~ 101.4 gallons of fuel, A.12

2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and — See ITS 3.8.3

Add proposed LCO 3.8.1.c and d — A.2

3. A separate fuel transfer pump. LA.1

APPLICABILITY: MODES 1, 2, 3 and 4. — Add proposed Applicability Note and ITS ACTIONS A and B for Unit 1 AC Sources — M.2

ACTION:

ACTION A — a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least ~~two~~ one offsite circuit~~s~~ and ~~two diesel generators~~ to OPERABLE status within 72 hours

ACTION F — or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

L.1 — Add proposed Required Action A.3 second Completion Time

ACTION B — b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 12 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generator~~s~~ to OPERABLE status within 72 hours

L.21

L.1 — Add proposed Required Action B.4 second Completion Time

ACTION F — or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.~~ L.2

*Tanks are separate between diesels but shared between Units 1 and 2. — See ITS 3.8.3

COOK NUCLEAR PLANT - UNIT 2 3/4 8-1 AMENDMENT NO. ~~112~~, ~~132~~, 168

ITS 3.8.1

ITS

A.1

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

Add proposed Required Action D Note

A.3

ACTION D

Required Action A.1

Required Actions B.3.1 and B.3.2

c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*

12

L.21

ACTION D

ACTION F

L.1

and MODE 5 within 36 hours

M.3

ACTION C

ACTION F

d. With two of the above required offsite A.C. circuits inoperable, restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.*

L.1

ACTION E

Required Action B.1

ACTION E

ACTION F

e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a 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. With one diesel generator unit restored, follow ACTION Statement b* or c.*

L.1

*The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.

L.1

Add proposed ACTION G

A.4

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

A.9

SR 3.8.1.1

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and

Add proposed Note 1 to SR 3.8.1.9

24

L.3

SR 3.8.1.9

b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. ~~In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:~~ L.2 L.4

SR 3.8.1.4 1. Verifying the fuel level in the day tank, every 31 days L.5

2. Verifying the fuel level in the fuel storage tank, See ITS 3.8.3 LA.1

SR 3.8.1.6 3. Verifying that the fuel transfer ~~pump~~ system can be started and that it transfers fuel from the storage system to the day tank, automatically 92 days M.4 L.19

L.2 every 31 days steady state

SR 3.8.1.2 SR 3.8.1.8 SR 3.8.1.16 4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz,* voltage ≥ 3740 V and frequency ≥ 58.8 Hz L.18 M.5

SR 3.8.1.3 5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and ≥ 3150 kW and ≤ L.6

L.2 every 31 days 6. ~~Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.~~ LA.2

b. By removing accumulated water***: See ITS 3.8.3

SR 3.8.1.5 1) From the day tank at least once per 31 days ~~and after each occasion when the diesel is operated for greater than 1 hour,~~ and L.7

2) From the storage tanks at least once per 31 days. See ITS 3.8.3

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and See ITS 5.5

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

Add proposed SR 3.8.1.7 M.6

Add proposed Note 1 to SR 3.8.1.2, Note to SR 3.8.1.8, and Note 2 to SR 3.8.1.16 A.5

SR 3.8.1.8 * The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer ~~so that mechanical stress and wear on the diesel engine are minimized~~. LA.5

Note 2 to SR 3.8.1.2 Add proposed Note 1 to SR 3.8.1.3 A.6

Note 2 to SR 3.8.1.3 ** Momentary load transients do not invalidate this test.

Add proposed Notes 3 and 4 to SR 3.8.1.3 M.7

*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. See ITS 3.8.3

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.

See ITS 5.5

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

See ITS 3.8.3

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

A.10

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A~~*~~.

L.8

SR 3.8.1.10 through SR 3.8.1.19 e. At least once per ~~18~~ 24 months, ~~during shutdown,~~ by:

L.3

1. ~~Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,~~

LA.3

* The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

See ITS 3.8.3

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

M.8 M.5 LA.4 L.9 L.6 M.8 L.10 M.1 A.5 L.11

SR 3.8.1.10

Add proposed Note 2 to SR 3.8.1.10

single largest post-accident load

2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz.

the frequency ≤ 64.4 Hz and within 2 seconds

SR 3.8.1.11

Add proposed Note 2 to SR 3.8.1.11

≥ 3150 kW and ≤

without tripping the DG

voltage is maintained ≤ 5000 V

3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint.

SR 3.8.1.12

Add proposed Note 1 to SR 3.8.1.12

actual or

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

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 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 shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.

M.5 A.5 L.11 M.9

SR 3.8.1.13

Add proposed Note 1 to SR 3.8.1.13

actual or

Add SR 3.8.1.13 parts a, b, d, and e

5. Verifying that, on a Safety Injection actuation test 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.

A.5 L.11

SR 3.8.1.19

Add proposed Note 1 to SR 3.8.1.19

actual or

6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 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 load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

M.5

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ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.14 c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.

L.6 A.11 L.12 Add proposed Note 3 to SR 3.8.1.15

≥ 3150 kW and ≤

SR 3.8.1.15
SR 3.8.1.16 7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

A.5 Add proposed Note 2 to SR 3.8.1.16

8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw. L.13

SR 3.8.1.17 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.

10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by: L.20

a) Returning the diesel generator to standby operation, and

b) Verifying the emergency loads are serviced by offsite power.

SR 3.8.1.18 11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

SR 3.8.1.20 f. At least once per 10 years by:

1) Employing one of the following cleaning methods to clean the fuel oil storage tanks: See ITS 3.8.3

a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

---

SR 3.8.1.15 Note 1, SR 3.8.1.16 Note 1 * Momentary transients outside the load and power factor range do not invalidate this test.

SR 3.8.1.16 Note 1 ** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours ~~or until operating temperature has stabilized~~.

≥ 3150 kW and ≤ L.6 A.8

ITS 3.8.1

ITS

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

See ITS 3.8.3

2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

A.5

Add proposed Note to SR 3.8.1.20

SR 3.8.1.20

3) Starting both diesel generators simultaneously, ~~during shutdown~~, and verifying that both diesel generators accelerate to at least ~~514 RPM~~ in less than or equal to 10 seconds.*

L.14

Add proposed voltage limit

M.10

58.8 Hz

L.15

Add proposed SR Notes 1 and 2

Add proposed SR 3.8.1.21

M.11

~~*Shall be performed after any modifications which could affect diesel generator interdependence.~~

L.16

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

L.2

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification, except as provided in Specification 3.0.6.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification, except as provided in Specification 3.0.6. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

3.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted. This provision shall not prevent passage through OPERATIONAL MODES as required to comply with ACTION statements.

See ITS Section 3.0

Required Actions A.2, B.2, and C.1

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

L.17

24 hours for proposed Required Action A.2
4 hours for proposed Required Actions B.2
12 hours for proposed Required Action C.1

1. ~~At least HOT STANDBY within the next 6 hours,~~
2. ~~At least HOT SHUTDOWN within the following 6 hours, and~~
3. ~~At least COLD SHUTDOWN within the subsequent 24 hours.~~

Declare required features inoperable.

L.17

~~This Specification is not applicable in MODES 5 or 6.~~

A.7

3.0.6 Equipment removed from service or declared inoperable to comply with ACTION requirements may be returned to service under administrative controls solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to Specifications 3.0.1 and 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

See ITS Section 3.0

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS LCO 3.8.1.1 does not contain the OPERABILITY requirements for the opposite unit qualified offsite circuit and diesel generators (DGs). However, the CTS definition of "OPERABLE - OPERABILITY" requires that, for all equipment required to be OPERABLE, all attendant equipment (this includes normal and emergency electrical sources) are also capable of performing their related support functions. New requirements were added as ITS LCO 3.8.1.c and ITS LCO 3.8.1.d. ITS LCO 3.8.1.c will require one opposite unit qualified circuit between the offsite transmission network and the opposite unit onsite Class 1E AC electrical power distribution system capable of supporting the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System," and LCO 3.8.1.d will require the opposite unit DG(s) capable of supporting the equipment required to be OPERABLE by LCO 3.7.8. This changes the CTS by adding explicit AC Source requirements for the opposite unit to the LCO.

The purpose of ITS LCO 3.8.1.c and ITS LCO 3.8.1.d is to ensure the appropriate AC Sources are available to support the ESW System.
CTS LCO 3.7.4.1 requires two independent ESW loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. Since the ESW pumps of the opposite unit are supported by the offsite circuits and DG(s) of the opposite unit, per the definition of OPERABILITY, these AC Sources are currently required to be OPERABLE when the associated ESW pump is not isolated from the other unit. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 3.8.1.1 Action c applies when one offsite circuit and one DG are inoperable. In this condition, an emergency bus may be de-energized. CTS LCO 3.8.2.1 provides an Action for an emergency bus that is de-energized. A Note to ITS 3.8.1 ACTION D in the Required Actions column states, "Enter applicable Conditions and Required Action of LCO 3.8.9, "Distribution System - Operating," when Condition D is entered with no AC power source to any train." This changes the CTS by requiring the compensatory actions for Distribution System - Operating to be taken if a distribution train is made inoperable by inoperable AC Sources.

This change is acceptable because no changes are made to CTS requirements. The change in format from the CTS to the ITS maintains all technical requirements. The addition of the Note only acts as a reminder to enter all appropriate ACTIONS if any emergency bus becomes de-energized. In the event AC Sources are inoperable such that a distribution subsystem were inoperable, ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in this event (an entire train may be without power), specific direction to take appropriate ACTIONS for the Distribution System is added (ITS 3.8.1, Note to ACTION D) when there is no power for a train. This format and construction implements the existing treatment of this condition within the framework of the CNP Units 1 and 2 ITS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 CTS LCO 3.8.1.1 does not contain an Action for more than two sources of either offsite circuits or DGs inoperable. Having more than two sources inoperable requires entering CTS LCO 3.0.3. ITS 3.8.1 ACTION G 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.

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

A.5 CTS 4.8.1.1.2.a.4, CTS 4.8.1.1.2.e.4, CTS 4.8.1.1.2.e.5, CTS 4.8.1.1.2.e.6, CTS 4.8.1.1.2.e.7, and CTS 4.8.1.1.2.f.3) require the DGs to be started. ITS SR 3.8.1.2, SR 3.8.1.8, SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.19, and SR 3.8.1.20 also require the DGs to be started. However, each of the ITS Surveillances include a Note concerning a prelube. ITS SR 3.8.1.2 Note 1 states that all DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. The Note to SR 3.8.1.8 and SR 3.8.1.20, Note 1 to SR 3.8.1.12, SR 3.8.1.13, and SR 3.8.1.19, and Note 2 to SR 3.8.1.16 state that all DG starts may be preceded by an engine prelube period. This changes the CTS by adding the Notes to the applicable Surveillance Requirements.

A Note has been added to various Surveillances which allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the DGs during testing. The addition of the Note is considered administrative since the DGs at CNP Units 1 and 2 run in a continuous prelube mode of operation. In addition, the Note to ITS SR 3.8.1.2 allows a warmup period prior to loading. The addition of this part of the Note is considered administrative because the DGs are not immediately loaded upon startup, but are allowed to warmup for a short time after startup while the operations staff performs post startup DG checks. This change is designated as administrative because it does not result in a technical change to the CTS.

A.6 CTS 4.8.1.1.2.a.5 requires the DG to be synchronized and loaded for $\geq$ 60 minutes. Footnote ** allows for momentary load transients to not invalidate this test. In addition, the CTS does not place a time limit on loading the DG for this test. ITS SR 3.8.1.3 requires this same test and Footnote ** is incorporated as Note 2 to SR 3.8.1.3. However, SR 3.8.1.3 Note 1 has been added, which states that DG loadings may include gradual loading as recommended by the manufacturer. This changes the CTS by adding an explicit Note that states that DG loadings may include gradual loading as recommended by the manufacturer.

CTS 4.8.1.1.2.a.5 requires the load to be at a specific value for $\geq$ 60 minutes. The added allowances simply state that prior to entering the load range of the test the DG can be gradually loaded. This is currently allowed by the CTS since there is no explicit requirement precluding this operation. This change is acceptable because Note 1 to SR 3.8.1.3 simply clarifies how the DG can be loaded prior to entering the load range for the test. This change is designated as administrative because it does not result in a technical change to the CTS.

A.7 CTS 3.0.5 states that it is not applicable in MODE 5 or 6. CTS 3.0.5 has been incorporated into the ACTIONS of ITS 3.8.1. This changes the CTS by incorporating the allowances of CTS 3.0.5 in ITS 3.8.1.

This change is acceptable because ITS 3.8.1 is only applicable in MODES 1, 2, 3, and 4. Therefore, the statement in CTS 3.0.5, which states that the Specification is not applicable in MODE 5 or 6, is no longer necessary and is deleted. This change is designated as administrative because it does not result in technical changes to the CTS.

A.8 CTS 4.8.1.1.2.e.7 requires verification that the DG operates at a power factor of less than or equal to 0.86 for at least 8 hours. Within 5 minutes after completing this test, CTS 4.8.1.1.2.a.4, the normal DG start test, must be performed. CTS 4.8.1.1.2.e.7 footnote ** states that if CTS 4.8.1.1.2.a.4 is not completed satisfactorily, it is not necessary to repeat the 8 hour test. Instead, the DG may be operated at the load required in CTS 4.8.1.1.2.e.7 for 2 hours "or until operating temperature has stabilized." The criteria for performing the normal DG start test within 5 minutes after completing the 8 hour test has been incorporated into ITS SR 3.8.1.16 Note 1. This Note states that the SR must be performed within 5 minutes of shutting down the DG after the DG has operated for $\geq$ 2 hours within a specified load range. This changes the CTS by deleting the allowance to allow the DG to operate until temperature has stabilized.

The purpose of CTS 4.8.1.1.2.e.7 and associated footnote is to verify the ability of the DG to start at hot conditions. If CTS 4.8.1.1.2.a.4 (the DG restart test portion) fails after the performance of the 8 hour DG load test, the ** footnote to CTS 4.8.1.1.2.e.7 allows the DG to be operated at the specified load for 2 hours or until operating temperature has stabilized. ITS SR 3.8.1.16 Note 1 only includes a requirement that load must be within the load range for $\geq$ 2 hours within 5 minutes of starting the SR. Operation for at least 2 hours has been demonstrated to be the time to achieve hot conditions (i.e., a stabilized operating temperature). Since the prerequisite for the SR is effectively unchanged, this change is considered administrative. This change is designated as administrative because it does not result in technical changes to the CTS.

A.9 CTS 4.8.1.1.1.b requires the demonstration of the offsite circuits by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source. ITS SR 3.8.1.9 requires the same Surveillance, however a Note is added which states that the automatic transfer is only required to be met when the auxiliary source is supplying the onsite electrical power distribution subsystem. This changes the CTS by adding a clarification Note to the Surveillance (Note to ITS SR 3.8.1.9).

This change is acceptable since the preferred offsite circuit would be in a configuration to perform its safety function, and the auxiliary source (main generator) is not required for OPERABILITY. This change is designated as administrative because it does not result in technical changes to the CTS.

A.10 CTS 4.8.1.1.2.e contains a requirement to perform various tests "during shutdown." These tests have been incorporated in ITS SR 3.8.1.10 through SR 3.8.1.15 and SR 3.8.1.17 through SR 3.8.1.19. These Surveillances include a Note which state that the Surveillance shall not normally be performed in MODE 1 or 2 or 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. In addition, the Note states that credit may be taken for unplanned events that satisfy the SR. This changes the CTS by adding the allowance that credit may be taken for unplanned events that satisfy the associated SR. Additional changes to CTS 4.8.1.1.2.e are discussed in DOC L.8.

The ITS Notes clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. This change is designated as administrative because it does not result in technical changes to the CTS.

A.11 CTS 4.8.1.1.2.e.6.c) requires the verification that all automatic DG trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus "and/or" Safety Injection actuation signal. ITS SR 3.8.1.14 requires the verification that each DG's automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus "or" an actual or simulated ESF signal. This changes the CTS by clarifying the automatic trips are bypassed either upon loss of voltage on the emergency bus "or" an ESF signal, not both of them concurrently as could be interpreted by use of the "and/or" term.

This change is acceptable since it reflects the actual design of the system and the manner in which the current testing is being performed. The automatic trips other than the engine overpseed and generator differential are automatically bypassed when either the ESF signal or the loss of voltage signal are present. This change is designated as administrative because it does not result in technical changes to the CTS.

A.12 CTS LCO 3.8.1.1.b.1 requires each DG fuel day tank to contain a minimum volume of 70 gallons of fuel. ITS SR 3.8.1.4 requires each DG fuel day tank to contain $\geq$ 101.4 gallons of fuel oil. This changes the CTS by clarifying that the amount of fuel oil required to be stored in the DG day tank includes both the usable and unusable volumes.

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The purpose of CTS LCO 3.8.1.1.b.1 is to ensure the DG has sufficient fuel oil supply to allow the DG to run at full load before one of the fuel oil transfer pumps must be started to replenish the fuel oil supply and ensure uninterrupted DG service. As stated in the CTS Bases, the 70 gallons of fuel required by CTS LCO 3.8.1.1.b.1 is the usable volume. For clarity and for consistency with the fuel oil storage tank volume requirement, the contained volume is provided. Each fuel oil day tank has 31.4 gallons of unusable volume (taking into account the geometry of the tank and a minimum submergence to suppress vortexing). Therefore, the proposed value of 101.4 gallons ensures 70 gallons of usable fuel oil in the day tank. The change is acceptable since the proposed DG fuel oil volume in each day tank will ensure at least 15 minutes of DG operation. This change is designated as administrative because the day tank volume requirements are now explicit in stating the required volume of 101.4 gallons is a contained volume.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.1.1.2.e.3 requires a verification that the DG is capable of rejecting a load of 3500 kW without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint. ITS SR 3.8.1.11 requires verification that each DG does not trip and voltage is maintained ≤ 5000 V during and following a load rejection of ≥ 3150 kW and ≤ 3500 kW. This changes the CTS by adding a DG voltage limitation to the full load reject test. The change to the load range is discussed in DOC L.6 and the change to the speed limitation is discussed in DOC L.10.

The purpose of CTS 4.8.1.1.2.e.3 is to verify the proper operation of the DG governor and load control circuits. This change adds a DG voltage limitation to the acceptance criteria for the full load reject test. 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. This new acceptance criterion ensures that the DG is protected from damage upon loss of load. While the DG is not expected to experience this transient during an event, and is expected to continue to be available, verifying 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. This change is acceptable since it is consistent with Regulatory Guide 1.9, Rev. 3, paragraph C.2.2.8. This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. This change is designated as more restrictive because a new acceptance criterion has been added to the DG full load reject test.

M.2 CTS 3.8.1.1 does not contain any explicit Action requirements for the opposite unit qualified circuits and DGs when these AC Sources are inoperable but are required to support the ESW System. CTS LCO 3.0.5 would allow the ESW System not to be declared inoperable as long as its normal or emergency power source is OPERABLE and all of its redundant support equipment are OPERABLE. ITS 3.8.1 ACTIONS A and B have been added to cover the situation when the opposite unit qualified offsite circuit or DG is inoperable,

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DISCUSSION OF CHANGES
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respectively. ITS 3.8.1 Required Action A.3 will require the offsite circuit to be restored to OPERABLE status within 72 hours while ITS 3.8.1 Required Action B.4 will require the inoperable DG to be restored to OPERABLE status within 72 hours. ITS 3.8.1 Required Actions B.3.1 and B.3.2 require a determination that the OPERABLE DG(s) is not inoperable due to common cause failure or to perform a DG start for each OPERABLE DG. In addition, a Note has been added to the Applicability which allows the opposite unit AC electrical power sources required by LCO 3.8.1.c and LCO 3.8.1.d to not be required to be OPERABLE when the associated equipment is inoperable. This change adds additional compensatory actions for the inoperable opposite unit AC Sources.

The purpose of ITS 3.8.1 ACTIONS A and B are to limit the time the unit can operate with inoperable AC Sources and to perform other compensatory measures. When an ESW header is cross-tied, the opposite unit ESW pump is required to be OPERABLE to support the associated ESW train. CTS 3.0.5 would allow continuous operation as long as the opposite unit ESW pump has at least one offsite circuit or DG to support its operation and there is no redundant equipment inoperable. This time has been limited to 72 hours. The proposed change is acceptable since the proposed Completion Times are consistent with the 72 hour Completion Time currently allowed for the unit AC Sources. The added Applicability Note will allow the associated ESW equipment to be declared inoperable. This exception is intended to allow declaring the opposite unit supported equipment inoperable either in lieu of declaring the opposite unit power source inoperable, or at any time subsequent to entering ACTIONS for an inoperable opposite unit power source. This exception is acceptable since it is consistent with CTS 3.0.5, which allows an exception to the definition of OPERABLE - OPERABILITY (i.e., the component can always be declared inoperable). This change is designated as more restrictive since the Completion Time for restoring inoperable opposite unit AC Sources has been reduced consistent with the current Completion Times for the unit AC Sources.

M.3 CTS 3.8.1.1 Action d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of these sources, and if not restored within the allowed time, the unit is required to be in at least HOT STANDBY within the next 6 hours. In the ITS, if at least one offsite circuit is not restored to OPERABLE status within the allowed time, then ITS 3.8.1 ACTION F requires the unit to be in MODE 3 within 6 hours and MODE 5 within 36 hours. This changes the CTS by adding the requirement to be in MODE 5 within 36 hours.

The purpose of CTS 3.8.1.1 Action d is to provide the appropriate compensatory actions for two inoperable offsite circuits. The current action does not place the unit outside of the Applicability of the Specification. All other CTS 3.8.1.1 Actions require the unit to be placed outside of the Applicability of the Specification (i.e., MODE 5). This action is also considered appropriate for two inoperable offsite circuits. This change is designated as more restrictive because the unit must be placed outside of the Applicability of the Specification (i.e., MODE 5) instead of just to MODE 3.

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M.4 CTS 4.8.1.1.2.a.3 requires the verification that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank. ITS SR 3.8.1.6 requires each verification that each fuel oil transfer system operates to "automatically" transfer fuel oil from the storage tank to the day tank. This changes the CTS by adding a requirement that the fuel oil transfer system must operate automatically.

The purpose of CTS 4.8.1.1.2.a.3 is to ensure the fuel transfer system is OPERABLE. This change will require a verification that a transfer pump starts automatically to transfer fuel on low level in the day tank. This change is necessary since it ensures a continuous fuel supply for the DG so that the DG can supply power to safety related equipment. This change is designated as more restrictive since the transfer pump will be required to start automatically.

M.5 CTS 4.8.1.1.2.a.4, the normal DG start test, requires a verification that each DG starts from standby conditions and achieves in less than or equal to 10 seconds, a voltage of 4160 ± 420 V and a frequency of 60 ± 1.2 Hz. CTS 4.8.1.1.2.a.4 footnote * clarifies that the DG start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this Surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the DG are minimized. CTS 4.8.1.1.2.e.2, the single largest load reject test, requires the verification of the generator capability to reject a load greater than or equal to the specified value while maintaining voltage at 4160 ± 420 V and frequency of 60 ± 1.2 Hz. CTS 4.8.1.1.2.e.4, the simulated loss of offsite power test, and CTS 4.8.1.1.2.e.6, the simulated loss of offsite power test in conjunction with a Safety Injection signal test, also specify a steady state voltage of 4160 ± 420 V and frequency of 60 ± 1.2 Hz. CTS 4.8.1.1.2.e.7 requires the performance of CTS 4.8.1.1.2.a.4 within 5 minutes after performing the 8 hour test (commonly called a hot restart test). CTS 4.8.1.1.2.a.4 is divided into three Surveillances in the ITS. ITS SR 3.8.1.2 requires the verification that each DG starts from standby conditions and achieves steady state voltage of ≥ 3910 V and ≤ 4400 V and frequency of ≥ 59.4 Hz and ≤ 61.2 Hz. ITS SR 3.8.1.2 Note 2 specifies that the modified DG start involving gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. ITS SR 3.8.1.8, the 184 day quickstart test, and SR 3.8.1.16, the 24 month hot restart test, require a steady state voltage of ≥ 3910 V and ≤ 4400 V and a steady state frequency of ≥ 59.4 Hz and ≤ 61.2 Hz. ITS SR 3.8.1.10, the single largest load reject test, requires the verification that within 2 seconds following load rejection voltage is ≥ 3910 V and ≤ 4400 V and frequency is ≥ 59.4 Hz and ≤ 61.2 Hz. ITS SR 3.8.1.12, the loss of offsite power test, and SR 3.8.1.19 the loss of offsite power test in conjunction with an ESF signal, also require verification of the same limitations for steady state voltage and frequency. This changes the CTS in that the steady state voltage range has been reduced from 4160 ± 420 V to 4160 +240 V, -250 V and the steady state frequency range has been reduced from 60 ± 1.2 Hz to 60 + 1.2 Hz, -0.6 Hz. The deletion of the maximum voltage and frequency limit for the quick start tests are described in DOC L.18.

The purpose of the CTS 3.8.1.1 Surveillances is to provide the appropriate limitations for DG voltage and frequency. This change reduces the steady state

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voltage and frequency range. The more restrictive steady state voltage and frequency limits provide assurance that the emergency safety features (ESF) pumps have the appropriate level of voltage and frequency available so that they are assured of achieving adequate fluid flow to meet their safety and accident mitigation functions. The maximum voltage limit also provides a 10% voltage allowance for the 4000 V rated motors. This change is designated as more restrictive because the proposed limits for voltage and frequency have been reduced.

M.6 CTS 3/4.8.1.1 does not specify any requirements for the DG air start receiver pressure. ITS SR 3.8.1.7 requires verification that each required DG air start receiver pressure is ≥ 190 psig every 31 days. This changes the CTS by adding a new Surveillance to the Technical Specifications that is not currently required.

The purpose of ITS SR 3.8.1.7 is to ensure sufficient air is available to start the DG. This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity in the air start receiver for each DG is available. The pressure specified in this SR is intended to reflect the lowest value at which one start can be accomplished with one air start receiver. 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. This change is designated as more restrictive because a new requirement concerning DG air start receiver pressure has been added to the Technical Specifications.

M.7 CTS 4.8.1.1.2.a.5 requires each DG to be synchronized and loaded for ≥ 60 minutes. ITS SR 3.8.1.3 requires the same test, however two additional Notes have been added which place restrictions on the test. Notes 3 and 4 modify the CTS requirements by stating that the SR shall be conducted on only one DG at a time, and the SR shall be preceded by and immediately follow, without a shutdown of the DG, a successful performance of ITS SR 3.8.1.2 or ITS SR 3.8.1.8. This changes the CTS by adding restrictions when performing this test.

This change is acceptable because CTS 4.8.1.1.2.a.5 is normally conducted on one DG at a time. In addition, the loading of a DG is usually conducted without shutdown after a successful start during performance of CTS 4.8.1.1.2.a.4. This change is designated as more restrictive because explicit restrictions are added to the DG load test.

M.8 CTS 4.8.1.1.2.e.2 requires the testing of a DG with the loss of a load ≥ 600 kW while CTS 4.8.1.1.2.e.3 requires the testing of DG with a loss of load of 3500 kW. These Surveillances do not specify that a DG shall be tested at a specific power factor. ITS SR 3.8.1.10 requires the verification that each DG can reject a load equal to or greater than its associated single largest post-accident load. ITS SR 3.8.1.11 requires the verification that each DG can reject a load of ≥ 3150 kW and ≤ 3500 kW. The SRs additionally state in a Note "If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.86. 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 of ≤ 0.86 if the testing is conducted by synchronizing with the offsite sources. Other changes to CTS 4.8.1.1.2.e.2 (ITS SR 3.8.1.10) are discussed in DOCs M.5, LA.4, and L.9, while other changes to CTS 4.8.1.1.2.e.3 (ITS SR 3.8.1.1.11) are discussed in DOCs L.6 and L.10.

This change is acceptable because the testing should be conducted as close as possible to the conditions that would be experienced by a DG following an accident. Loading the DG solely with the inductive characteristics of a large motor will create a power factor less than unity. The design of the DG is set for full power operation with a power factor of ≥ 0.8. Therefore, testing of the DG for a loss of the single largest load and at full load is acceptable with a power factor ≤ 0.86. This change is designated as more restrictive because the testing required by the CTS does not currently contain this limitation.

M.9 CTS 4.8.1.1.2.e.5, the Safety Injection actuation test (without a loss of power) requires the DG to start and operate for greater than or equal to 5 minutes. ITS SR 3.8.1.13 requires the verification that each DG auto-start from standby condition and; a) in ≤ 10 seconds the DG achieves voltage ≥ 3740 V and frequency ≥ 58.8 Hz; b) achieves steady state voltage ≥ 3910 V and ≤ 4400 V and frequency ≥ 59.4 Hz and ≤ 61.2 Hz; c) operates for ≥ 5 minutes; d) permanently connected loads remain energized from the offsite power system; and e) emergency loads are 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 Safety Injection actuation test (without a loss of power).

The purpose of the CTS 4.8.1.1.2.e.5 is to test the performance of each DG when a Safety Injection actuation test (without a loss of power) signal is simulated. The proposed change adds explicit minimum voltage and frequency limits to achieve within 10 seconds of a start signal and adds explicit steady state voltage and frequency limits. In addition, the Surveillance verifies that 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 DGs and with other similar SRs where the DG starts but does not tie to the emergency buses. This change is designated as more restrictive because additional acceptance criteria have been added to the CTS.

M.10 CTS 4.8.1.1.2.f.3) requires, at least every 10 years, that both DGs are started simultaneously with a verification that both DGs start and accelerate to at least 514 RPM in less than or equal to 10 seconds. ITS SR 3.8.1.20 requires verification when started simultaneously from standby condition that each DG achieves, in ≤ 10 seconds, voltage ≥ 3740 V and frequency ≥ 58.8 Hz. This changes the CTS by placing a minimum voltage limit for the DGs during this test. The change to the speed limit is discussed in DOC L.15.

The purpose of CTS 4.8.1.1.2.f.3) is to test the interdependence of the DGs. The new voltage limit ensures that components powered by the associated bus will have sufficient voltage to perform their required function. This change is acceptable since the acceptance criteria is consistent with all other DG start acceptance criteria. This change is designated as more restrictive because a DG voltage limit is added to the CTS for the DG interdependence test.

M.11 CTS LCO 3.8.1.1 does not contain any explicit LCO or Surveillance Requirements for the opposite unit qualified circuits and DGs when these AC Sources are required to support the ESW System. The opposite unit LCO requirements have been added as discussed in DOC A.2. ITS SR 3.8.1.21 has been added, and states which SRs of the opposite unit Specification 3.8.1 apply for the required opposite unit AC Sources. In addition, SR Table Notes 1 and 2 have been added to clarify which Surveillances are applicable to the given unit and which Surveillances are applicable to the opposite unit. SR Note 1 states that SR 3.8.1.1 through SR 3.8.1.20 apply to the given unit and SR Note 2 states that SR 3.8.1.21 is applicable to the opposite unit AC Sources. This changes the CTS by adding explicit Surveillances for the opposite unit required equipment.

The purpose of ITS SR 3.8.1.21 is to ensure the opposite unit AC Sources are OPERABLE. The proposed Surveillances are consistent with the current requirements that apply to the opposite unit. The change is acceptable since the Surveillances along with the Frequencies are consistent with the CTS as modified by other Discussion of Changes. This change is designated as more restrictive since the opposite unit Surveillances have been made applicable to the given unit.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.1.1.a requires two "physically independent" circuits between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE. CTS LCO 3.8.1.1.b requires two "separate and independent" DGs to be OPERABLE, each with a "separate" day fuel tank and a "separate fuel transfer pump." CTS 4.8.1.1.2.a.3 requires the verification that the fuel transfer "pump" can be started and that it transfers fuel from the storage system to the day tank. ITS LCO 3.8.1 requires two qualified circuits between the offsite transmission network and the onsite Class 1E distribution system and two DGs capable of supplying the onsite Class 1E power distribution subsystem(s) to be OPERABLE. ITS SR 3.8.1.4 requires verification that each day tank contains $\geq$ 101.4 gallons of fuel oil. ITS SR 3.8.1.6 requires verification that the fuel oil transfer system operates automatically to transfer fuel oil from the storage tank to the day tank. This changes the CTS by moving the details that the offsite circuits are "physically independent," that the DGs are "separate and independent," that the day tanks are "separate," and that each OPERABLE DG has "a separate fuel transfer pump" 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 requirements for OPERABLE offsite sources and DGs and that the fuel oil transfer system operates automatically to transfer fuel oil from the storage tank to the day tank. 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.

LA.2 *(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 DG 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 DG 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 DGs to be OPERABLE. An OPERABLE DG must be capable of providing power to the associated emergency buses as indicated in the Bases. The details of what an OPERABLE DG must be capable of performing does not need to appear in the Specification in order 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.

LA.3 *(Type 6 – Relocation of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS 4.8.1.1.2.e.1 requires each DG to be subjected to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service. The ITS does not include this DG inspection requirement. This changes the CTS by moving the explicit DG inspection Surveillance 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.e.1 is to ensure that each DG is inspected in accordance with procedures performed in conjunction with the manufacturer's recommendations. The other DG Surveillances will ensure the DG is capable of performing its safety function. This requirement is proposed to be relocated to the TRM since the requirement is not needed to ensure that the DG remains OPERABLE. This change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is

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incorporated by reference into the UFSAR and any 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 requirement is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.e.2 requires verification of the DG performance during a load rejection of greater than or equal to 600 kW. ITS SR 3.8.1.10 requires verification of the DG performance during a load rejection greater than or equal to the single largest post-accident load. This changes the CTS by moving the detail of the actual load value (600 kW) 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 requirement to test the DG for the rejection of the single largest post accident load. 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.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.a.4 footnote * states that all engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer "so that mechanical stress and wear on the DG are minimized." Note 2 to ITS SR 3.8.1.2 states that a modified DG start involving gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. This changes the CTS by moving the detail that mechanical stress and wear on the DG are minimized 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 Note that a modified DG start involving gradual acceleration to synchronous speed may be used as recommended by the manufacturer. 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.

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LESS RESTRICTIVE CHANGES

L.1 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.1.1 Action a specifies the compensatory actions for one inoperable offsite source. The action requires restoration of the two offsite circuits and two DGs to OPERABLE status within 72 hours. CTS 3.8.1.1 Action b specifies the compensatory actions for one inoperable DG. The action requires restoration of the DGs to OPERABLE status within 72 hours. CTS 3.8.1.1 Action c specifies the compensatory actions for one inoperable offsite circuit and one inoperable DG. The action requires restoration of at least one of these sources within 12 hours, and if the DG is restored to OPERABLE status to follow Action a and if the offsite circuit is restored to OPERABLE status to follow Action b. CTS 3.8.1.1 Action c also includes a footnote * that states that the Action time shall be based upon the time associated with the component inoperability, and is not reset when exiting this Action statement. CTS 3.8.1.1 Action d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of these sources within 24 hours, and with only one offsite circuit restored to OPERABLE status to follow Action a. CTS 3.8.1.1 Action d also includes the same footnote mentioned above. CTS 3.8.1.1 Action e specifies the compensatory actions for two inoperable DGs. The action requires restoration of at least one of these sources within 2 hours, and with one DG restored to OPERABLE status to follow Action b or c. CTS 3.8.1.1 Action e also includes the same footnote mentioned above. ITS 3.8.1 Required Actions A.3, B.4, D.1 and D.2, C.2, and E.1, respectively include the same Completion Times as in the CTS. However, ITS 3.8.1 Required Actions A.3 (for an inoperable offsite circuit) and B.4 (for an inoperable DG) both include an additional requirement that restoration is required within 6 days from discovery of failure to meet LCO 3.8.1.a or b. This changes the CTS by extending the Completion Times for multiple concurrent AC Source inoperabilities from 72 hours to 6 days.

The purpose of the CTS 3.8.1.1 Actions are to limit the time the AC Sources can be inoperable prior to requiring a shutdown of the unit. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed Completion Time. In the event of multiple concurrent AC Source inoperabilities (i.e., one Train A or B DG and one offsite circuit), CTS 3.8.1.1 Action a limits restoration time to 72 hours from the time of initial loss of the first AC Source since CTS 3.8.1.1 Action a requires restoration of at least two offsite circuits and two DGs within 72 hours. When a second inoperability occurs just prior to restoration of the initial inoperability and close to the expiration of the initial 72 hours, this limitation can provide little or no time to effect repair. The result would be a forced shutdown of the unit. While these simultaneous inoperabilities are expected to be rare, it is also expected that any AC source inoperability would be repaired in a reasonable time (72 hours). Given the minimal risk of an event during the repair of the subsequent inoperability, the likelihood of a satisfactory return to OPERABLE status, and the risks involved with introducing plant transients associated with a forced shutdown, it is proposed to allow a separate time period for this subsequent repair. Since this rationale can be taken to extreme with continuous multiple overlapping inoperabilities, a maximum restoration time limit is imposed.

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The ITS format presents this as an additional Completion Time of "6 days from discovery of failure to meet LCO 3.8.1.a or b" in ITS 3.8.1 Required Actions A.3 and B.4. This change is designated as less restrictive because additional time is allowed to restore the components to within the LCO limits than is allowed in the CTS.

L.2 *(Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a requires that each DG be demonstrated OPERABLE in accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS. CTS Table 4.8-1 specifies the test frequency based on the number of failures that have occurred in testing each DG during the previous 20 tests. If the number of failures do not exceed the specified limit, testing is to be performed every 31 days on a STAGGERED TEST BASIS. If failures occur above the specified limits, then testing is conducted every 7 days on a STAGGERED TEST BASIS. In addition, CTS 3.8.1.1 Action b which covers inoperabilities associated with a DG includes a cross reference to the Table that states "At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1." ITS 3.8.1 does not include the requirements to test at an accelerated testing Frequency based on DG failures. ITS SR 3.8.1.2 requires each DG to be started at a fixed frequency of 31 days. ITS SR 3.8.1.3 requires each DG be synchronized and loaded and operated for $\geq$ 60 minutes at a fixed frequency of 31 days. This changes the CTS by eliminating the requirement to test the DGs at an increased frequency based on the number of test failures. The change to the STAGGERED TEST BASIS requirements is discussed in DOC L.4 and the changes to the test frequency of CTS 4.8.1.1.2.a.1 and 3 are discussed in DOCs L.5 and L.19, respectively.

The purpose of CTS Table 4.8-1 is to test the DG in accordance with Regulatory Guide 1.9, Rev. 3. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change deletes the requirement to test the DG at an increasing frequency based on the number of test failures. A plant procedure implements requirements and responsibilities for tracking DG failures for the determination of reaching trigger values specified in NUMARC 87-00. In addition, Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Diesel Generators," allows Licensees to request removal from the Technical Specifications of provisions for accelerated testing. CNP also proposes to make the changes allowed by Generic Letter 94-01. The basis for removing the accelerated testing requirements from the Technical Specifications and modifying the Surveillance Frequency of CTS 4.8.1.1.2.a.4 and CTS 4.8.1.1.2.a.5 (these Surveillances are tested in accordance with Table 4.8-1 in accordance with CTS 4.8.1.1.2.a), as stated in the Generic Letter, is for the licensee to commit to implement a maintenance program for monitoring and maintaining emergency DG performance in accordance with the provisions of the 10 CFR 50.65 (Maintenance Rule) and consistent with the guidance of Regulatory Guide 1.160. This commitment must be implemented within 90 days of issuance of the license amendment that removes the accelerated testing and special reporting requirements for emergency DGs from the Technical Specifications. CNP has already implemented a maintenance program for monitoring and maintaining emergency DG performance in accordance with the provisions of the Maintenance Rule and consistent with the guidance in

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Regulatory Guide 1.160. Therefore, since the commitment has already been met, the requirements are not required to be in the ITS to provide adequate protection of the public health and safety and the allowances in Generic Letter 94-01 are acceptable. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.8.1.1.1.b requires a demonstration that the offsite circuits are OPERABLE by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source. CTS 4.8.1.1.2.e.2 requires a verification that the DG is capable of rejecting a load $\geq$ 600 kW. CTS 4.8.1.1.2.e.3 requires a verification that the DG is capable of rejecting a load of 3500 kW. CTS 4.8.1.1.2.e.4 requires a verification of the DG performance during a simulated loss of offsite power. CTS 4.8.1.1.2.e.5 requires a verification of the DG performance during a simulated Safety Injection actuation. CTS 4.8.1.1.2.e.6 requires a verification of the DG performance during a simulated Safety Injection actuation test signal with a loss of offsite power. CTS 4.8.1.1.2.e.7 requires a verification of the DG performance during an 8 hour run at the continuous load rating. CTS 4.8.1.1.2.e.9 requires a verification of the DG performance during a simulated restoration of offsite power. CTS 4.8.1.1.2.e.11 requires a verification of the automatic sequence timing relays. These Surveillances are performed on an 18 month Frequency. ITS SR 3.8.1.9 through SR 3.8.1.19 require the same testing (as modified by specific DOCs) at a 24 month Frequency. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of the CTS 3.8.1.1 Surveillances are to ensure the offsite circuits and the DGs are OPERABLE.

SR 3.8.1.9 requires automatic transfer from the auxiliary source to the preferred offsite circuit and manual alignment to the alternate offsite circuit to demonstrate the OPERABILITY of the required offsite circuits.

SR 3.8.1.10 verifies each DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, the specified frequency limit is not exceeded and the specified frequency and voltage are achieved within the specified time. This SR verifies the proper operation of the DG governor and load control circuits.

SR 3.8.1.11 verifies each DG does not trip and the specified voltage is maintained during and following a load rejection of the specified load. This SR verifies the proper operation of the DG governor and load control circuits.

SR 3.8.1.12 verifies on an actual or simulated loss of offsite power signal: a) de-energization of emergency buses; b) load shedding from emergency buses; and c) DG auto-starts from standby condition and 1) energizes permanently

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connected loads in the specified time, 2) energizes auto-connected shutdown loads, 3) maintains the specified steady state voltage, 4) maintains the specified steady state frequency, and 5) supplies permanently connected and auto-connected shutdown loads for greater than the specified time. This Surveillance demonstrates the as-designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

SR 3.8.1.13 verifies on actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a) within the specified time after auto-start, achieves the specified voltage and frequency; b) achieves the specified steady state voltage and frequency; c) operates for the specified minimum time; d) permanently connected loads remain energized from the offsite power system; and e) emergency loads are auto-connected through the time delay relays from the offsite power system. This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time from the design basis actuation signal (ESF signal) and operates for greater than the specified time period which provides sufficient time to demonstrate stability. In addition, it verifies the OPERABIITY of the offsite power system.

SR 3.8.1.14 verifies each DG's automatic trips are bypassed on an actual or simulated loss of offsite power signal on the emergency bus or an actual or simulated ESF actuation signal except: a) engine overspeed; and b) generator differential current. This SR is essentially a verification of logic since the normal operation of the DG has all automatic trips active, and the trips are only bypassed with an ESF actuation signal or a loss of power signal.

SR 3.8.1.15 verifies each DG operates $\geq$ 8 hours at the specified load range. This Surveillance demonstrates that the DG can operate at or above the maximum load during an accident and within the continuous rating of the diesel.

SR 3.8.1.16 verifies each DG starts and achieves: a) in the specified time the required voltage and frequency; and b) specified steady state voltage and frequency. 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 the required time.

SR 3.8.1.17 verifies each DG: a) synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b) transfers loads to offsite power source; and c) returns to ready-to-load operation. This Surveillance ensures that the manual synchronization and load transfer from the DG to a required offsite power source can be made and that the DG can be returned to ready-to-load status when offsite power is restored. It also ensures that the undervoltage logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs.

SR 3.8.1.18 verifies the interval between each sequenced load block is within the specified design interval for each time delay relay. Under accident conditions, loads are sequentially connected to the bus by the time delay relays. The time delay relays control the permissive and starting signals to motor breakers to prevent overloading of the bus power supply due to high motor starting currents. The load sequence time tolerance ensures that sufficient time exists for the bus power supply to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding emergency equipment time delays are not violated.

SR 3.8.1.19 verifies on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a) de-energization of emergency buses; b) load shedding from emergency buses; and c) DG auto-starts from standby condition and, 1) energizes permanently connected loads in less than the specified time, 2) energizes auto-connected emergency loads, 3) achieves steady state voltage specified, 4) achieves steady state frequency specified, and 5) supplies permanently connected and auto-connected emergency loads for greater than or equal to the specified time. This Surveillance demonstrates the DG operation, as discussed in the Bases for SR 3.8.1.12, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and energization of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable.

This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the offsite circuits and DG SRs is acceptable because the DGs are verified to be operating properly throughout the operating cycle by other Technical Specification Surveillances. This testing ensures that a significant portion of the DG and offsite circuits are operating properly and will detect significant failures of the AC Sources. Additional justification for extending the Surveillance test interval is that the design provides substantial redundancy in AC sources. Based on system redundancy, component reliability, and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.4 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a states that each DG shall be demonstrate OPERABLE in accordance with the frequency specified in Table 4.8-1 "on a STAGGERED

TEST BASIS." The Surveillance Frequency for ITS SR 3.8.1.2, SR 3.8.1.3, and SR 3.8.1.4 is every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. The ITS SR 3.8.1.6 Surveillance Frequency is every 92 days as discussed in DOC L.19, and also does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.8.1.1.2.a is to demonstrate the OPERABILITY of the DG(s) and the associated support equipment (fuel oil day tank and fuel oil transfer system). This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change deletes the requirement to perform the Surveillances of CTS 4.8.1.1.2.a on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that demonstrate that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) is not as significant as initially thought, 4) has no impact on failure frequency, 5) introduces additional stress on components such as DGs potentially causing increased component failures rates and component wearout, 6) results in reduced redundancy testing, and 7) increases likelihood of human error by increasing testing intervals. Therefore, the DG System staggered testing requirements have been deleted. This change is designated as less restrictive because the intervals between performances of the Surveillances for the two trains can be larger or smaller under the ITS than under the CTS.

L.5 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a.1 requires the verification of the fuel level in the day tank. The test Frequency for this Surveillance is in accordance with the frequency specified in Table 4.8-1 (the DG Test Schedule Table) on a STAGGERED TEST BASIS. ITS SR 3.8.1.4 requires verification that each day tank contains the required volume of fuel oil every 31 days. This changes the CTS by deleting the requirement to perform this Surveillance in accordance with the DG Test Schedule Table. The change to the STAGGERED TEST BASIS requirement is discussed in DOC L.4.

The purpose of CTS 4.8.1.1.2.a.1 is to ensure there is sufficient fuel oil in the day tank. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The CTS test frequency has been changed by deleting the requirement to perform this Surveillance in accordance with the DG Test Schedule Table and includes a Frequency of 31 days. This change is acceptable because the DG failures that result in a more frequent DG test frequency have no impact on the day tank's ability to perform the intended function since the day tanks are normally maintained well above the minimum level. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.6 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.a.5 specifies that the DG must be loaded to 3500 kW during the

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60 minute run test. CTS 4.8.1.1.2.e.3 specifies that the load rejection test must be performed by rejecting a load of 3500 kW. CTS 4.8.1.1.2.e.7 requires the diesel to be loaded to 3500 kW during the 8 hour run test. CTS 4.8.1.1.2.e.7 states that within 5 minutes after completing this 8 hour test to perform CTS 4.8.1.1.2.a.4, and footnote ** states that if CTS 4.8.1.1.2.a.4 is not satisfactorily completed, then it is not necessary to repeat the preceding 8 hour test. Instead, the DG may be operated at 3500 kW for 2 hours or until operating temperatures has stabilized. ITS SR 3.8.1.3, the 60 minute run test, specifies that each DG must be loaded to $\geq$ 3150 kW and $\leq$ 3500 kW. ITS SR 3.8.1.11, the full load rejection test, specifies the load rejection range for the test to be $\geq$ 3150 kW and $\leq$ 3500 kW. ITS SR 3.8.1.15, the 8 hour endurance run, specifies the load range to be $\geq$ 3150 kW and $\leq$ 3500 kW. ITS SR 3.8.1.16, the hot restart test, is modified by Note 1, which includes the details of CTS 4.8.1.1.2.e.7 footnote **, however the load has also been changed to $\geq$ 3150 kW and $\leq$ 3500 kW. This changes the CTS by allowing the DGs to be tested at a lower load during these Surveillances.

The purpose of CTS 4.8.1.1.2.a.5 is to ensure the DG can operate at the continuous rating. The purpose of CTS 4.8.1.1.2.e.3 is to ensure the DG operates properly during a full load rejection test. The purpose of CTS 4.8.1.1.2.e.7 is to ensure the DG can operate for an extended period at its continuous rating. The purpose of CTS 4.8.1.1.2.e.7 footnote ** is to ensure the DG hot restart test is performed with the DG at hot conditions. This change allows the DGs to be tested at a lower load during these Surveillances. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. The proposed minimum value is consistent with Regulatory Guide 1.9, Rev. 3 (paragraph C.2.2.2), which recommends a load range of 90% to 100% for the load-run test; Regulatory Guide 1.9, Rev. 3 (paragraph C.2.2.8), which recommends a load range of 90% to 100% for the full load rejection test; and Regulatory Guide 1.9, Rev. 3 (paragraph C.2.2.9), which recommends this same load range for most of the endurance run. The proposed values are 90% to 100% of the continuous load rating and therefore are considered to be consistent with the recommendations of Regulatory Guide 1.9, Rev. 3. The values will preclude routine overloading of the DG and the lower value will still ensure the DG is at operating temperatures and that the maximum loads assumed in the safety analyses can be supported. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.7 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.b.1) requires the removal of accumulated water from the day tank at least once per 31 days and "after each occasion when the diesel is operated for greater than 1 hour." ITS SR 3.8.1.5, which requires the same Surveillance to be performed once per 31 days, does not include the conditional Frequency. This changes the CTS by deleting the requirement to test for accumulated water after each occasion when the DG is operated for greater than 1 hour.

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The purpose of CTS 4.8.1.1.2.b.1) is to provide a degree of assurance that the day tank is free of accumulated water each time the associated DG is operated for more than 1 hour. 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 is a time dependent process, not a process dependent on the transfer of fuel oil during DG operation. Since it is the expectation that the DG will not be operated except for the nominal monthly OPERABILITY tests (based on experience), 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 after a DG run of greater than 1 hour has been deleted.

L.8 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.2.e contains a requirement to perform various test "during shutdown." These tests have been incorporated in ITS SR 3.8.1.10 through SR 3.8.1.15 and SR 3.8.1.17 through SR 3.8.1.19. ITS SR 3.8.1.10, SR 3.8.1.11, and SR 3.8.1.13 through SR 3.8.1.15 include a Note which state that the Surveillance shall not normally be performed in MODE 1 or 2. ITS SR 3.8.1.12 and SR 3.8.1.17 through SR 3.8.1.19 include a Note which state that the Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. The Notes also state that the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. This changes the CTS by deleting the requirement to perform the Surveillances during shutdown, and replacing the shutdown requirement with a Note stating when the Surveillances are not normally performed but allowing the test to be performed in these MODES as long as the associated assessment is performed.

The purpose of CTS 4.8.1.1.2.e is to confirm the OPERABILITY of the DGs. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the restriction on unit conditions. 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, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L.9 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.2 requires a verification that the DG is capable of rejecting a load $\geq$ 600 kW while maintaining a voltage of 4160 $\pm$ 420 V and frequency of 60 $\pm$ 1.2 Hz. ITS SR 3.8.1.10 requires verification that each DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, frequency is $\leq$ 64.4 Hz, and after 2 seconds steady state voltage is $\geq$ 3910 V and $\leq$ 4400 V and frequency is $\geq$ 59.4 Hz and $\leq$ 61.2 Hz. This changes the CTS by allowing the transient frequency to exceed the limit for the first 2 seconds and deleting the voltage limits during the first 2 seconds of the transient. Other changes to the minimum frequency limit and the minimum and maximum voltage limits are discussed in DOC M.5.

The purpose of CTS 4.8.1.1.2.e.2 is to ensure the proper operation of the DG governor and load control circuits. This change is acceptable because it has been determined that the relaxed Surveillance Requirement 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 allowing the transient frequency and voltage to exceed the current limit, but provides a time limit for the stabilization of voltage and frequency. Consistent with Regulatory Guide 1.9, the load rejection test is acceptable if the diesel speed does not exceed 75% of the difference between nominal speed and the overspeed trip setpoint, or 15% above nominal speed, whichever is lower. This corresponds to 64.4 Hz, which is the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint. The time to reach steady state voltage is also consistent with the recommendation of Regulatory Guide 1.9 for response during load sequence intervals. The 2 seconds specified is equal to approximately 60% of the 3.49 second load sequence interval associated with sequencing of the largest load. This change is acceptable since the maximum frequency limitation is consistent with the limitation specified in CTS 4.8.1.1.2.e.3 for the full load rejection test and consistent with the recommendations of Regulatory Guide 1.9. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.10 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.3 requires a verification that the DG is capable of rejecting a load of 3500 kW without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint. ITS SR 3.8.1.11 requires verification that each DG does not trip and voltage is maintained $\leq$ 5000 V during and following a load rejection of $\geq$ 3150 kW and $\leq$ 3500 kW. This changes the CTS by changing the DG full load rejection speed limitation acceptance criteria. The change to the load range is discussed in DOC L.6 and the addition of the voltage limit is discussed in DOC M.1.

The purpose of CTS 4.8.1.1.2.e.3 is to verify the proper operation of the DG governor and load control circuits. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the speed limitation acceptance criteria of the full load rejection test. 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. This acceptance criterion verifies that the DG is adequately protected from damage upon loss of load. While the DG is not expected to experience this transient during an event, and is expected to continue to be available, verifying 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 change is also acceptable since it is consistent with Regulatory Guide 1.9, Rev.3, paragraph C.2.2.8. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.11 (*Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.4 requires verification of DG performance following a "simulated" loss of offsite power. CTS 4.8.1.1.2.e.5 requires verification of DG performance following a Safety Injection actuation "test" signal. CTS 4.8.1.1.2.e.6 requires verification of DG performance following a "simulated" loss of offsite power in conjunction with a Safety Injection actuation "test" signal. ITS SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.14, and SR 3.8.1.19 specify that the signal may be from either an "actual" or simulated (i.e., test) 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.e.4, CTS 4.8.1.1.2.e.5, and CTS 4.8.1.1.2.e.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 Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required 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 allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.12 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.7 requires verification that the DG operates at a power factor of less than or equal to 0.86 for at least 8 hours. ITS SR 3.8.1.15 requires verification that each DG operates at a power factor of $\leq$ 0.86 for $\geq$ 8 hours, but a Note (ITS SR 3.8.1.15 Note 3) has been added which allows the power factor to be outside of the limit under certain conditions. The Note states that if performed with DG synchronized with offsite power, it shall be performed at a power factor $\leq$ 0.86. 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 by allowing the 8 hours endurance run to be performed at a power factor outside of the CTS limit.

The purpose of CTS 4.8.1.1.2.e.7 is to test the DG at the continuous load for an extended period of time. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change allows the DG 8 hour endurance run to be performed at a power factor outside of the CTS limit. However, this is only permitted if the DG is not synchronized with offsite power, or if the DG is synchronized with offsite power but grid conditions do not permit. Under this second condition the power factor shall be maintained as close to the limit as practicable. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. When grid voltage is high, additional field excitation may be needed to get the power factor to 0.86 which could lead to voltages on the emergency buses that are too high. Under

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these conditions, the power factor should be maintained as close as practicable to 0.86 while still maintaining acceptable voltage limits on the emergency buses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of 0.86 may not cause unacceptable voltages on the emergency buses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained close as practicable to 0.86 without exceeding the DG excitation limits. This change is acceptable since the DG will continue to be tested as close as practicable to design conditions. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.13 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.1.1.2.e.8 requires verification that the auto-connected loads to each DG do not exceed 3500 kW. ITS 3.8.1 does not require the verification of this loading limit to ensure OPERABILITY of the DGs. This changes the CTS by deleting the Surveillance Requirement.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. 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. Each DG 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 DG 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.

L.14 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.2.f.3) contains a requirement to start both DGs simultaneously "during shutdown." ITS SR 3.8.1.20 removes the MODE restrictions for performing the required test. This changes the CTS by deleting the requirement to perform the Surveillance during shutdown.

The purpose of CTS 4.8.1.1.2.f.3) is to verify the interdependence of the DGs. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the restriction on unit conditions. The Surveillance can be adequately tested in the operating conditions without jeopardizing safe plant operations, since the Surveillance does not require the DGs to be connected to their respective buses and only requires a start of the DGs. 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, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

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L.15 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.f.3) contains a requirement to start both DGs simultaneously and verifying that both DGs accelerate to at least 514 RPM in less than or equal to 10 seconds. ITS SR 3.8.1.20 requires verification when the DGs are started simultaneously that each DG achieves a frequency of greater than or equal to 58.8 Hz. This changes the CTS by decreasing the speed (i.e., frequency) requirement from 514 RPM (60 Hz) to 58.8 Hz.

The purpose of CTS 4.8.1.1.2.f.3) is to ensure the DGs retain their independence from one another. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change decreases the minimum frequency requirement for the DG during a simultaneous start. This change is acceptable because the value is consistent with the minimum frequency proposed in other Surveillances (e.g., ITS SR 3.8.1.8). This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.16 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.1.1.2.f.3) footnote * specifies that CTS 4.8.1.1.2.f.3) must be performed following any modification that could affect DG interdependence. ITS 3.8.1 does not include this testing requirement. This changes the CTS by deleting this testing requirement.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO is consistent with the safety 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 DGs 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.

L.17 *(Category 3 – Relaxation of Completion Time)* CTS 3.0.5 allows a system, subsystem, train, component, or device to be considered OPERABLE with an inoperable emergency or normal power source provided its corresponding normal or emergency power source is OPERABLE and its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE. CTS 3.0.5 requires a unit shutdown to start within two hours with these requirements not met. CTS 3.0.5 also provides an explicit time period to be in HOT STANDBY (MODE 3), HOT SHUTDOWN (MODE 4), and COLD SHUTDOWN (MODE 5).

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ITS 3.8.1 ACTION A (one required offsite source inoperable) requires the declaration of required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action A.2 is 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION B (one required DG inoperable) requires the declaration of required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable. The Completion Time allowed by the Required Action B.2 is 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION C (two required offsite circuits inoperable) requires the declaration of required feature(s) inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action C.1 is 12 hours from discovery of Condition C concurrent with inoperability of redundant required features. This changes the CTS by allowing more time to restore inoperable equipment and replaces the explicit times to be in MODE 3, MODE 4, and MODE 5 with a requirement to declare the affected features inoperable (and thus to take the ACTIONS required by the individual system LCO, including possible shutdown of the unit).

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 and deletes the explicit times to be in MODE 3, MODE 4, and MODE 5. By declaring the affected supported equipment inoperable, and as a result, taking the Technical Specifications 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 that affected supported equipment inoperable. CTS 3.0.5 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 24 hour Completion Time when one required offsite circuit is inoperable is acceptable because: a) the redundant counterpart to the inoperable required feature is still OPERABLE although single failure protection may have been lost; b) the capacity and capability of the remaining AC Sources is still available; c) a reasonable time for repairs is provided for restoration before the unit is subjected to transients associated with shutdown; and d) the low probability of a DBA occurring during this period. The 12 hour Completion Time when two required offsite circuits are inoperable is acceptable because Regulatory Guide 1.93 allows a Completion Time of 24 hours for two required offsite circuits inoperable. When a concurrent redundant required function is inoperable, a shorter Completion Time of 12 hours is appropriate. The 4 hour Completion Time with one required DG 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.

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Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC Sources, reasonable time for repairs, and low probability of a DBA occurring during this period. This change is designated as less restrictive because additional time is allowed to restore equipment to OPERABLE status and the change deletes the explicit times to reach MODE 3, MODE 4, and MODE 5.

L.18 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.a.4, the normal DG start test, and CTS 4.8.1.1.2.e.7, the DG hot restart test, each require a verification that the DG starts from standby conditions and achieves in less than or equal to 10 seconds, a voltage of 4160 ± 420 V and a frequency of 60 ± 1.2 Hz. ITS SR 3.8.1.8, the 184 day quick start test, and SR 3.8.1.16, the 24 month hot restart test, require the verification that each DG starts from standby conditions and achieves a voltage of ≥ 3740 V and frequency ≥ 58.8 Hz within 10 seconds and a steady state voltage of ≥ 3910 V and ≤ 400 V and a steady state frequency of ≥ 59.4 Hz and ≤ 61.2 Hz. This changes the CTS by specifying a minimum voltage and frequency to be achieved within 10 seconds instead of requiring the voltage and frequency to be within range in 10 seconds. This effectively allows the upper steady state limits to be exceeded during DG acceleration and stabilization. The change to the actual frequency and voltage values is discussed in DOC M.5.

The purpose of the CTS 4.8.1.1.2.a.4 and CTS 4.8.1.1.2.e.7 is to test for the OPERABILITY of each DG during cold and hot conditions. This change is acceptable because it has been determined that the relaxed Surveillance Requirement 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 specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range. This effectively allows the upper voltage and frequency limits to be exceeded during DG acceleration and stabilization. As stated above, the proposed SRs will require only the establishment of the minimum frequency (58.8 Hz) and voltage (3740 V) within the given time frame. The accident analyses and other Surveillances require that the DGs be capable of being loaded within 10 seconds. This can be accomplished at 58.8 Hz and 3740 V. While the upper level requirement regarding the frequency and voltage acceptance criterion is being eliminated, the requirement to establish a steady state voltage and frequency has been retained. Changes to the steady state voltage and frequency ranges are discussed in DOC M.5. Thus, for steady state conditions, the proposed SRs will be more restrictive. Once steady state conditions are reached, the minimum and maximum voltage and frequency limits must be maintained. Therefore, the proposed requirements will require that the DG start and achieve in ≤ 10 seconds, voltage ≥ 3740 V and frequency ≥ 58.8 Hz; and steady state voltage ≥ 3910 V and ≤ 4400 V and frequency ≥ 59.4 Hz and ≤ 61.2 Hz. The tests in question are those that automatically start the DG but do not connect it to a bus. Verification that the minimum voltage and frequency limits are met within the proper time is sufficient to ensure the DG can perform its design function. When called upon, the DG must start and accept load within the proper time. Once the minimum voltage and frequency limits are met, the DG can connect to the bus. When a test is performed that does not result in connecting the DG to the bus, a voltage or frequency overshoot can occur since

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no loads are connected (the loading tends to minimize overshoot). This overshoot could be such that the voltage or frequency is outside the band high when the time limit expires. However, this condition is not indicative of an inoperable DG, provided that steady state voltage and frequency are maintained. The DG start times are monitored and trend evaluated to identify degradation of DG governor and voltage regulator performance as described in the Bases. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.19 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a.3 requires that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank. The test Frequency for these Surveillance is in accordance with the frequency specified in Table 4.8-1 (the DG Test Schedule Table) on a STAGGERED TEST BASIS. The nominal test Frequency in CTS Table 4.8-1 is 31 days. ITS SR 3.8.1.6 requires the verification that the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tank every 92 days. This changes the CTS by deleting the requirement to perform this Surveillance in accordance with the DG Test Schedule Table, and changes the nominal test Frequency to 92 days. The change to the STAGGERED TEST BASIS requirement is discussed in DOC L.4.

The purpose of CTS 4.8.1.1.2.a.3 is to ensure the fuel oil transfer system can function properly. A detailed review of the test history for the fuel oil transfer pumps indicates no failures during any demand cycles. The IST program requires operation of the transfer pumps only on a quarterly basis and degradation has not been indicated for these pumps. The change concerning the deletion of more frequent testing than the nominal 31 day test Frequency is acceptable because the DG failures that result in a more frequent DG test Frequency have no impact on the ability of the fuel oil transfer pumps to perform their intended function. In addition, the proposed 92 day fuel oil transfer pump test Frequency is consistent with the requirements of ASME Operation and Maintenance Standards and Guides (OM Codes) for similar pumps. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.20 CTS 4.8.1.1.2.e.10 requires verifying that with the DG operating in a test mode while connected to its test load, a simulated Safety Injection (SI) signal overrides the test mode by returning the DG to standby operation and ensuring the emergency loads remain powered by offsite power. The ITS does not include this Surveillance Requirement. This changes the CTS by deleting this Surveillance Requirement.

The purpose of CTS 4.8.1.1.2.e.10 is to verify the design of the DG logic when the DG is connected to the test bank. The CNP design includes the capability of paralleling the DG with a test bank instead of actually paralleling the DG with offsite power (i.e., via the emergency buses). However, the test bank only provides a capability to load the DG to approximately 50% of the rating of the DG (i.e., 1690 kW). With the exception of a single Surveillance (CTS 4.8.1.1.2.e.2), all DG loading Surveillances require the DG to be loaded to greater than the rating of the test bank. Thus, the test bank is not allowed to be used to meet these Surveillances. In the ITS, the DG loading required for these Surveillances will also remain greater than the capability of the test bank. CTS 4.8.1.1.2.e.2, the Surveillance that does not require the DG to be loaded greater than the rating of the test bank, is a test of the DGs capability to reject a load equivalent to the single largest post-accident load. Since this test is normally performed in conjunction with the full load rejection test (CTS 4.8.1.1.2.e.3), the load bank is not used for the test and the DG is normally paralleled with offsite power. In addition, CTS 4.8.1.1.2.e.2 is required to be performed while shutdown and ITS SR 3.8.1.10 maintains this requirement (i.e., it cannot be performed in MODES 1 and 2). Thus, even if this test were performed using the test bank, the unit would not be critical. Furthermore, this change is only requesting the removal of the requirement to test this design feature from the CTS and will not result in physically removing the feature from the DG logic. Therefore, this change is acceptable since the CTS Surveillance verifies a design feature that cannot be used to meet the requirements for the vast majority of the CTS Surveillances, and the one Surveillance the design feature can be used for is not normally performed using the test bank. This change is designated as less restrictive because a Surveillance Requirement has been deleted from the CTS.

L.21 CTS 3.8.1.1 Action b specifies the compensatory actions for one inoperable DG and CTS 3.8.1.1 Action c specifies the compensatory actions for one inoperable offsite circuit and one inoperable DG. The Actions include a requirement to demonstrate the OPERABILITY of the remaining OPERABLE DG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining DG is demonstrated. ITS 3.8.1 Required Actions B.3.1 and B.3.2 allows 12 hours to perform similar checks on the remaining OPERABLE DGs. This changes the CTS by extending the time to perform these checks from 8 hours to 12 hours.

The purpose of the above specified CTS Actions is to ensure that the other unit DG is not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). Currently, the 8 hour time limit specified is sufficient to actually perform CTS 4.8.1.1.2.a.4, a normal DG start test, on the other unit DG. However, due to the addition of the opposite unit DG requirements discussed in DOC M.2, there is a possibility that ITS 3.8.1 ACTION B will be entered due to an opposite unit DG inoperability. This could result in ITS 3.8.1 Required Action B.3.2 being required on two unit DGs. That is, the DG start test could have to be performed on two DGs. Based on Operations Department experience, it would be difficult to perform a DG start test on two DGs within the current 8 hour time limit, considering the time it normally takes to perform the test on a single DG, as well as to perform pre-evolution briefs for the operating crew and to safely transition between the DG tests. The proposed 12 hour time limit is considered a reasonable time to complete the DG start tests on two DGs. Generic Letter 84-15 identified that a 24 hour time limit was acceptable to perform these common mode failure checks. Since the 12 hour time limit being proposed is within the 24 hour limit allowed by the NRC in Generic Letter 84-15, the change is considered acceptable. In addition, the change is considered acceptable since the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1.1

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

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

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

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

INSERT 1 (3)

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

INSERT 2 (3)

ACTIONS

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

Action a,
Action c

LCO 3.0.5

(15) (4)

3 **INSERT 1**

DOC A.2 c. One Unit 2 (Unit 1) and Unit 1 (Unit 2) qualified circuit between the offsite transmission network and the Unit 2 (Unit 1) and Unit 1 (Unit 2) onsite Class 1E AC Electrical Power Distribution System capable of supporting the associated equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System;" and

DOC A.2 d. The Unit 2 (Unit 1) and Unit 1 (Unit 2) DG(s) capable of supporting the associated equipment required to be OPERABLE by LCO 3.7.8.

3 **INSERT 2**

-NOTE-

DOC M.2 The Unit 2 (Unit 1) and Unit 1 (Unit 2) AC electrical power sources in LCO 3.8.1.c and LCO 3.8.1.d are not required to be OPERABLE when the associated required equipment is inoperable.

----

15 **INSERT 2A**

-NOTE-

Not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) offsite circuit is inoperable.

CTS

ACTIONS (continued)

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action a		A.3	Restore [required] offsite circuit to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO [3.8.1.a or b]	4 3
Action b, Action c, Action e	B. One [required] DG inoperable.	B.1	Perform SR 3.8.1.1 for the [required] offsite circuit(s).	1 hour AND Once per 8 hours thereafter	4 INSERT 2B 15
		AND			
LCO 3.0.5		B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND			
		B.3.1	Determine OPERABLE DG(s) is not inoperable due to common cause failure.	[24] hours 12	4
		OR			
		B.3.2	Perform SR 3.8.1.2 for OPERABLE DG(s).	[24] hours 12	4
		AND			

15

INSERT 2B

-NOTE-

Not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) DG is inoperable.

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action b		B.4 Restore [required] DG to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO 3.8.1.a or b	4 3
Action d, LCO 3.0.5	C. Two [required] offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable. AND C.2 Restore one [required] offsite circuit to OPERABLE status.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features 24 hours	4 4
Action c	D. One [required] offsite circuit inoperable. AND One [required] DG inoperable.	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train. D.1 Restore [required] offsite circuit to OPERABLE status. OR D.2 Restore [required] DG to OPERABLE status.	 12 hours 12 hours	4 4 4 4

CTS

ACTIONS (continued)

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action e	E. Two ~~[required]~~ DGs inoperable.	E.1 Restore one ~~[required]~~ DG to OPERABLE status.	2 hours	4
	~~- REVIEWER'S NOTE - This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event.~~ ~~F. [One [required] [automatic load sequencer] inoperable.~~	~~F.1 Restore [required] [automatic load sequencer] to OPERABLE status.~~	~~[12] hours]~~	2 11
Actions a, b, c, d, e	F ~~G.~~ Required Action ~~and~~ associated Completion Time of Condition A, B, C, D, E, ~~or~~ ~~F~~ not met.	F ~~G.1~~ Be in MODE 3. AND F ~~G.2~~ Be in MODE 5.	6 hours 36 hours	2 2 2
DOC A.4	G ~~H.~~ Three or more ~~[required]~~ AC sources inoperable.	G ~~H.1~~ Enter LCO 3.0.3.	Immediately	2 4

INSERT 3 — 3

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.8.1.1.a	SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	7 days	4

3

INSERT 3

-NOTES-

DOC M.11 1. SR 3.8.1.1 through SR 3.8.1.20 are applicable only to the AC electrical power sources for Unit 1 (Unit 1) and Unit 2 (Unit 2).

DOC M.11 2. SR 3.8.1.21 is applicable only to the Unit 2 (Unit 1) and Unit 1 (Unit 2) required AC electrical power sources. The Surveillances referenced in SR 3.8.1.21 are the Unit 2 (Unit 1) and Unit 1 (Unit 2) Surveillance Requirements.

CTS

AC Sources - Operating
3.8.1

SURVEILLANCE REQUIREMENTS (continued)

CTS		SURVEILLANCE	FREQUENCY	
4.8.1.1.2.a.4, including footnote *	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.] (8)	(5)	(4) (6)
		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. 4400 3910 59.4	31 days	(4)
4.8.1.1.2.a.5, including footnote **	SR 3.8.1.3	- NOTES - 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.7.	(8)	(6)
		Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ [4500] kW and ≤ [5000] kW. 3500	31 days 3150	(4)
LCO 3.8.1.1.b.1, 4.8.1.1.2.a.1	SR 3.8.1.4	Verify each day tank [and engine mounted tank] contains ≥ [220] gal of fuel oil. 101.4	31 days	(4)
4.8.1.1.2.b.1	SR 3.8.1.5	Check for and remove accumulated water from each day tank [and engine mounted tank].	[31] days	(4)

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS		SURVEILLANCE	FREQUENCY	
4.8.1.1.2.a.3	SR 3.8.1.6	Verify each ~~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	5 4 4
4.8.1.1.2.a.4, including footnote *	SR 3.8.1.[7] 8	INSERT 4 ----- - NOTE - All DG starts may be preceded by an engine prelube period. ----- Verify each DG starts from standby condition and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz, and b. Steady state voltage ≥ ~~[3740]~~ 3910 V and ≤ ~~[4580]~~ 4400 V, and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ [61.2] Hz.	184 days	6 4 1 4
4.8.1.1.1.b	SR 3.8.1.[8] 9	----- - 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.~~ ----- INSERT 5 Verify [automatic ~~[and] manual~~] transfer ~~of AC power sources~~ from the ~~normal offsite circuit~~ auxiliary source to ~~each alternate [required]~~ the preferred offsite circuit INSERT 6 : a)	[18] months 24	6 12 7 4 5 12 5 12

6

INSERT 4

DOC M.6

SR 3.8.1.7	Verify each required DG air start receiver pressure is ≥ 190 psig.	31 days

12

INSERT 5

-NOTE-

SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the electrical power distribution subsystem.

12

INSERT 6

; and

b. Manual alignment to the alternate offsite circuit

.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2.e.2 SR 3.8.1.9 (10)	- NOTES - 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant unit is maintained or enhanced. INSERT 7 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9 0.86. 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.	(6) (4) (5) (13) (4) (4)
	Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 63 64.4 Hz; b. Within 3 2 seconds following load rejection, the voltage is ≥ 3740 3910 V and ≤ 4580 4400 V; and c. Within 3 2 seconds following load rejection, the frequency is ≥ 58.8 59.4 Hz and ≤ 61.2 Hz.	18 24 months (4) (1) (4) (1) (4) (4)

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13

INSERT 7

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
4.8.1.1.2.e.3 SR 3.8.1.10 11 - NOTES - 6 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 unit is maintained or enhanced. INSERT 8 2. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9] 0.86. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. Verify each DG does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] 3150 kW and ≤ [5000] 3500 kW.	6 4 5 13 4 4 [18] 24 months 4

13

INSERT 8

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.e.4 SR 3.8.1.11 12	----- - NOTES - ----- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant unit is maintained or enhanced. -----	6 INSERT 9 13 5
	Verify on an actual or simulated loss of offsite power signal:	18 24 months 4
	a. De-energization of emergency buses;	1
	b. Load shedding from emergency buses;	1
	c. DG auto-starts from standby condition and:	
	1. Energizes permanently connected loads in ≤ [10] seconds,	4 1
	2. Energizes auto-connected shutdown loads through [automatic load sequencer], time delay relays, where applicable	2 1
	3. Maintains steady state voltage ≥ [3740] 3910 V and ≤ [4580] 4400 V,	1 4
	4. Maintains steady state frequency ≥ [58.8] 59.4 Hz and ≤ [61.2] Hz, and	1 4
	5. Supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	4

13

INSERT 9

Credit may be taken for unplanned events that satisfy this SR.

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.e.5 SR 3.8.1.12 (13)	- NOTES - 1. All DG starts may be preceded by an engine (11) 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~~ unit (5) is maintained or enhanced. INSERT 10 (13) Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ [10] seconds ~~after auto-start and during tests~~ (14), achieves voltage ≥ [3740] V and frequency ≥ [58.8] Hz; (1) b. Achieves steady state voltage ≥ ~~[3740]~~ 3910 V and ≤ ~~[4580]~~ 4400 V and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ [61.2] Hz; (1) c. Operates for ≥ 5 minutes; (1) d. Permanently connected loads remain energized from the offsite power system; and (1) e. Emergency loads are ~~energized [or]~~ auto-connected through the ~~automatic load sequencer~~ time delay relays, where applicable, from the offsite power system. (2)	(6) (4) [18] 24 months (4)

13

INSERT 10

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.e.6.c) SR 3.8.1.13 14	- 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~~ unit is maintained or enhanced. INSERT 11	
an	Verify each DG's automatic trips are bypassed on ~~actual~~ an actual or simulated loss of voltage signal on the emergency bus ~~concurrent with~~ or an actual or simulated ESF actuation signal except:	~~18~~ 24 months
	a. Engine overspeed, and	
	b. Generator differential current.	
	~~[c. Low lube oil pressure,~~	
	~~d. High crankcase pressure, and~~	
	~~e. Start failure relay.]~~	

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13

INSERT 11

Credit may be taken for unplanned events that satisfy this SR.

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2.e.7 SR 3.8.1.14 15	- NOTES - 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ unit is maintained or enhanced. INSERT 12 3. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ ~~[0.9]~~ 0.86. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. Verify each DG ~~operating at a power factor ≤ [0.9]~~ operates for ≥ ~~24~~ 8 hours~~:~~ a. ~~For ≥ [2] hours~~ loaded ~~≥~~ ≥ ~~[5250]~~ 3150 kW and ≤ ~~[5500]~~ 3500 kW ~~and~~ . ~~b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.~~	~~[18]~~ 24 months

6 5 13 4 10 4 8 8

13

INSERT 12

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY	
4.8.1.1.2.a.4, 4.8.1.1.2.e.7 SR 3.8.1.15 16	- NOTES - 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] 3150 kW and ≤ [5000] 3500 kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. Verify each DG starts and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz ; and b. Steady state voltage ≥ [3740] 3910 V, and ≤ [4580] 4400 V and frequency ≥ [58.8] 59.4 Hz and ≤ [61.2] Hz.	[18] 24 months	6 4 4 1 4 4
4.8.1.1.2.e.9 SR 3.8.1.16 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 5 unit plant is maintained or enhanced. INSERT 13 Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power ; b. Transfers loads to offsite power source ; and c. Returns to ready-to-load operation.	[18] 24 months	6 13 4 1 1

13

INSERT 13

Credit may be taken for unplanned events that satisfy this SR.

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ITS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.17	------------------------------ - NOTE - ------------------------------ [This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. -- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation and b. [Automatically energizing the emergency load from offsite power].	[18] months] 16
4.8.1.1.2.e.11 SR 3.8.1.18	------------------------------ - 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~~ unit is maintained or enhanced. INSERT 14 -- 6 Verify interval between each sequenced load block is within ± [10]% of design interval for each emergency ~~and shutdown load sequencer~~ time delay relay.	~~[18]~~ 24 months 5 4 13 4 4 2

13

INSERT 14

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2.e.6 SR 3.8.1.19	- 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. unit 5 INSERT 15 13 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, 1 b. Load shedding from emergency buses, and 1 c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 1 4 2. Energizes auto-connected emergency loads through load sequencer, time delay relays, as applicable 1 2 3. Achieves steady state voltage ≥ [3740] V and ≤ [4580] V, 3910 4400 1 4 4. Achieves steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 59.4 1 4 5. Supplies permanently connected [and auto-connected] emergency loads for ≥ 5 minutes. 4	24 [18] months 4

13 **INSERT 15**

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.f.3) SR 3.8.1.20	- NOTE - All DG starts may be preceded by an engine prelube period. Verify when started simultaneously from standby condition, each DG achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3744] V and ≤ [4576] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	10 years

4

9

INSERT 16

3

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3

INSERT 16

SR 3.8.1.21	-NOTES- 1. When Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies in the containment or auxiliary building, the following Unit 2 (Unit 1) and Unit 1 (Unit 2) SRs are not required to be performed: SR 3.8.1.3, 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. 2. Unit 2 (Unit 1) and Unit 1 (Unit 2) SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the required Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical power distribution subsystem. For required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources, the SRs of Unit 2 (Unit 1) and Unit 1 (Unit 2) Specification 3.8.1, except SR 3.8.1.9.b, SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20, are applicable.	In accordance with applicable SRs

DOC M.11

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

1. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

2. ISTS LCO 3.8.1.c and ISTS 3.8.1 ACTION F have been deleted since CNP Units 1 and 2 do not use load sequencers. Each load or load block is sequenced with the use of its associated time delay relay. Subsequent Conditions and Required Actions have been renumbered, as applicable. ITS SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.18, and SR 3.8.1.19 have been revised to reflect the use of time delay relays.

3. Additional requirements were added to ISTS LCO 3.8.1 to ensure the appropriate AC Sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4 to satisfy the design requirements. The new requirements were added as ITS LCO 3.8.1.c and LCO 3.8.1.d. This modification was necessary due to a shared system (Essential Service Water) between both units. A Note has been added to the Applicability that allows the opposite unit AC electrical power sources not to be required when the associated equipment is inoperable. This is an exception that is intended to allow declaring the opposite unit equipment inoperable in lieu of declaring the opposite unit power source inoperable. This exception also allows the supported equipment to be declared inoperable at any time subsequent to entering ACTIONS for an inoperable opposite unit power source. This exception is acceptable since, with the opposite unit equipment inoperable and the associated ACTIONS entered, the opposite unit AC Sources provide no additional assurance of meeting the safety criteria of the given unit's AC Sources.

   Two Notes have been added to the Surveillance Requirements Table and an additional Surveillance (ITS SR 3.8.1.21) has been added to clearly define the Applicability of the Surveillances for both units and to ensure the opposite unit's power sources are OPERABLE.

   In addition, the Completion Times for multiple AC Sources inoperable (Required Actions A.3 and B.4) have been revised to not reflect these additional LCO requirements since the equipment supported by the opposite unit AC power sources may be declared inoperable in lieu of declaring the power sources inoperable.

4. The brackets are removed and the proper plant specific information/value is provided.

5. Changes are made (additions, deletions, and/or changes) to the ISTS, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

6. ITS SR 3.8.1.7 has been added to verify each required DG air start receiver pressure is within the specified limit. This pressure will ensure one automatic start of each required DG. This change is consistent with the current licensing basis to have OPERABLE DG(s). The requirements of the air start receiver pressure in ISTS 3.8.3 has not been added since only one air start receiver is required to be OPERABLE per required DG. CNP Units 1 and 2 are not licensed for the five DG starts as required by ISTS 3.8.3. Subsequent SRs have been renumbered, as applicable.

7. ISTS SR 3.8.1.8 Note (ITS SR 3.8.1.9 Note), which states that this Surveillance shall not normally be performed in MODE 1 or 2, has been deleted. This test is currently

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

allowed to be performed at any time. The Note has not been added since the Surveillance test procedure currently allows the test to be performed during a shutdown of the unit from power operation (i.e., MODE 1) by tripping the main turbine and verifying the transfer to the preferred offsite circuit.

8. The DG endurance run time of $\geq$ 24 hours has been changed to $\geq$ 8 hours consistent with the current licensing basis as approved in License Amendment 207 (Unit 1) and 191 (Unit 2). The test is limited to the continuous rating consistent with the current licensing basis as approved in Licensing Amendment 125 (Unit 1) and 112 (Unit 2). The load range specified has been changed to values consistent with Regulatory Guide 1.9, Rev. 3, paragraph C.2.2.9 (90% to 100% of the continuous rating). The allowance to test the DG within the prescribed range is discussed in the Discussion of Changes for ITS 3.8.1.

9. The steady state limit does not apply to the simultaneous start of all DGs (ISTS SR 3.8.1.20), since it is a test of starting independence, not operating independence. This is consistent with the current licensing basis.

10. TSTF-276, Rev.2 was approved by the NRC on April 14, 2000. However, when NUREG-1431, Rev. 2 was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-276, Rev. 2 have been made.

11. Editorial/grammatical error corrected.

12. ISTS SR 3.8.1.8 (ITS SR 3.8.1.9) has been revised to include two parts consisting of: a) a transfer from the auxiliary source (i.e., main generator) to the preferred offsite circuit; and b) a manual alignment to the alternate offsite circuit. These changes were made consistent with the current licensing basis. However, a Note has also been added to ISTS SR 3.8.1.8 (ITS SR 3.8.1.9) that states SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the electrical power distribution subsystem. This change is necessary since the automatic transfer from the auxiliary source to the preferred offsite circuit is not necessary when the preferred offsite circuit is supplying onsite power. In this situation the preferred offsite circuit is performing its function by supplying the onsite power.

13. TSTF-283, Rev. 3 was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2 was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3 have been made.

14. ISTS SR 3.8.1.12 part a has been modified by deleting the words "after auto-start and during tests" for consistency with similar words in ISTS SR 3.8.1.7 and SR 3.8.1.15. In addition, the words "auto-start" are redundant to the words in the first part of ISTS SR 3.8.1.12, and the words "and during tests" is not correct; the voltage and frequency limits of part b are different than those in part a of the SR.

15. ISTS 3.8.1 Required Actions A.1 and B.1 have been modified by the addition of Notes. The Note for Required Action A.1 states that the Required Action is not applicable if a require opposite unit offsite circuit is inoperable and the Note for Required Action B.1 states that the Required Action is not applicable if a required opposite unit DG is inoperable. With an opposite unit offsite circuit or DG inoperable, there is no reason to check the given unit's offsite circuits, since neither they nor the

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

unit DGs are inoperable and the inoperable opposite unit offsite circuit and DG only affect the Essential Service Water System. This is also consistent with current licensing basis, since the CTS does not require an offsite circuit check when a required opposite unit offsite circuit or DG is inoperable.

16. ISTS SR 3.8.1.17 requires verifying that with the DG operating in test mode and connected to its bus, that an ESF actuation signal will override the test mode. The CNP design does not include this feature. With the DG connected to its respective buses, neither DG output breaker will trip on an ESF actuation signal; the DG remains connected to its buses under this condition. Therefore, this specific SR has not been included in the ITS.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

BACKGROUND

The unit Class 1E AC Electrical Power Distribution System AC sources consist of the offsite power sources (preferred ~~power sources, normal~~ and alternate~~(s)~~), and the onsite standby power sources (Train A and Train B diesel generators (DGs)). As required by 10 CFR 50, Appendix A, GDC 17 (Ref. 1), the design of the AC electrical power system provides independence and redundancy to ensure an available source of power to the Engineered Safety Feature (ESF) systems.)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 ~~two~~ preferred offsite power source~~s~~ and a single DG. INSERT 1 — 1 INSERT 2 — 1

a

~~Offsite power is supplied to the unit switchyard(s) from the transmission network by [two] transmission lines. From the switchyard(s), two electrically and physically separated circuits provide AC power, through [step down station auxiliary transformers], to the 4.16 kV ESF buses.~~ INSERT 3 1 A detailed description of the offsite power network and the circuits to the Class 1E ~~ESF~~ emergency buses is found in the U FSAR, ~~Chapter [8]~~ Section 8.3 (Ref. 2). 1 2

qualified 1

A~~n~~ 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~~ emergency bus~~(es)~~. INSERT 3A 1 1 1

approximately 40 seconds

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~~. INSERT 4 2 1 1

<Unit 1 only>

1-CD is emergency train 1

The onsite standby power source for each ~~4.16 kV~~ ESF ~~bus~~ is a dedicated DG. DG~~s [11] and [12] are~~ dedicated to ~~ESF~~ buses ~~[11] and [12], respectively~~. T11C and T11D 2 A DG starts automatically on a safety injection (SI) signal (i.e., ~~low~~ pressurizer pressure ~~or high~~ containment pressure signals) or on an ~~[ESF bus degraded voltage or undervoltage~~ signal (refer to LCO 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation"). After the DG has started, it will automatically tie to its respective bus after offsite power is tripped as a consequence of ~~ESF~~ bus undervoltage or degraded voltage, independent of or coincident with

1 INSERT 5 INSERT 5A 1 — 1 — 2

1 INSERT 5B

es emergency 1

-Low Loss of Voltage

1

INSERT 1

, an alternate offsite power source, an auxiliary source (main generator),

1

INSERT 2

Unit 2 only

Additionally, the AC electrical sources must include those electrical sources from Unit 2 (Unit 1) and Unit 1 (Unit 2) that are required to support the Essential Service Water (ESW) System since the ESW headers are common to both units. In addition, the AC electrical sources must include those AC electrical sources from Unit 1 during fuel handling operations in the auxiliary building since the Fuel Handling Area Exhaust Ventilation (FHAEV) System loads are supplied by Unit 1. The onsite Class 1E AC Distribution System associated with the other unit is also divided into redundant load groups and include the same connections to AC sources.

1

INSERT 3
(Unit 1 only)

The onsite Class 1E AC Distribution System includes Train A and Train B. Train A and Train B are normally powered from the main generator. The main generator supplies Train A via unit auxiliary transformer TR1CD and supplies Train B via unit auxiliary transformer TR1AB. The unit auxiliary transformer TR1CD supplies Bus 1C, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11C, a Train A bus. The unit auxiliary transformer TR1CD also supplies Bus 1D, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11D, also a Train A bus. The unit auxiliary transformer TR1AB supplies Bus 1A, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11A, a Train B bus. The unit auxiliary transformer TR1AB also supplies Bus 1B, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11B, also a Train B bus. The preferred qualified offsite circuit is supplied via reserve auxiliary transformers (RAT) TR101CD and TR101AB. The Train A and Train B 4.16 kV emergency buses will automatically transfer to the preferred qualified offsite circuit as a result of a turbine generator trip. Each RAT is supplied by a separate 34.5 kV line from an onsite switchyard. RAT TR101CD supplies the Train A 4.16 kV emergency bus T11C via bus 1C while emergency bus T11D is supplied via bus 1D. RAT TR101AB supplies the Train B 4.16 kV emergency bus T11A via bus 1A while emergency bus T11B is supplied via bus 1B. A 69 kV line supplies the alternate qualified offsite circuit. The 69 kV line supplies transformers TR12EP-1 and TR12EP-2, either of which can be manually aligned to directly supply Train A 4.16 kV emergency buses T11C and T11D and Train B 4.16 kV emergency buses T11A and T11B. The qualified offsite circuits are physically independent from one another.

1

INSERT 3
(Unit 2 only)

The onsite Class 1E AC Distribution System includes Train A and Train B. Train A and Train B are normally powered from the main generator. The main generator supplies Train A via unit auxiliary transformer TR2CD and supplies Train B via unit auxiliary transformer TR2AB. The unit auxiliary transformer TR2CD supplies Bus 2C, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21C, a Train A bus. The unit auxiliary transformer TR2CD also supplies Bus 2D which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21D, also a Train A bus. The unit auxiliary transformer TR2AB supplies Bus 2A, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21A, a Train B bus. The unit auxiliary transformer TR2AB also supplies Bus 2B, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21B, also a Train B bus. The preferred qualified offsite circuit is supplied via reserve auxiliary transformers (RAT) TR201CD and TR201AB. The Train A and Train B 4.16 kV emergency buses will automatically transfer to the preferred qualified offsite circuit as a result of a turbine generator trip. Each RAT is supplied by a separate 34.5 kV line from an onsite switchyard. RAT TR201CD supplies the Train A 4.16 kV emergency bus T21C via bus 2C while emergency bus T21D is supplied via bus 2D. RAT TR201AB supplies the Train B 4.16 kV emergency bus T21A via bus 2A while emergency bus T21B is supplied via bus 2B. A 69 kV line supplies the alternate qualified offsite circuit. The 69 kV line supplies transformersTR12EP-1 and TR12EP-2, either of which can be manually aligned to directly supply Train A 4.16 kV emergency buses T21C and T21D and Train B 4.16 kV emergency buses T21A and T21B. The qualified offsite circuits are physically independent from one another.

1

INSERT 3A

The LCO section provides a description of the required components that comprise the qualified offsite circuits.

1

INSERT 4

and auto-connected loads, via individual time delay relays

1

INSERT 5
(Unit 1 only)

DG 1-AB is dedicated to emergency buses T11A and T11B.

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1 **INSERT 5**
(Unit 2 only)

DG 2-CD is dedicated to emergency buses T21C and T21D. DG 2-AB is dedicated to emergency buses T21A and T21B.

1 **INSERT 5A**

an ESF actuation signal, specifically

1 **INSERT 5B**

, Steam Line Pressure - Low, or Steam Line Pressure - High Differential Pressure Between Steam Lines

BASES

BACKGROUND (continued)

emergency

an SI signal. The DGs will also start and operate in the standby mode without tying to the ~~ESF~~ bus on an SI signal alone. Following the trip of offsite power, ~~a sequencer/~~an undervoltage signal strips nonpermanent loads from the ~~ESF~~ bus. When the DG is tied to the ~~ESF~~ bus, loads are then sequentially connected to ~~its~~ their respective ~~ESF~~ emergency bus by the ~~automatic load sequencer~~ individual time delay relays. The ~~sequencing logic~~ controls the permissive and starting signals to motor breakers to prevent overloading the DG by automatic load application. ① ② ① ①

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

Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the DG in the process. Within ~~[1] minute~~ approximately 40 seconds after the initiating signal is received, all loads needed to recover the unit or maintain it in a safe condition are returned to service. ②

Ratings for Train A and Train B DGs satisfy the requirements of Regulatory Guide 1.9 (Ref. 3). The continuous service rating of each DG is ~~[7000]~~ 3500 kW with 10% overload permissible for up to 2 hours in any 24 hour period. INSERT 5C The ESF loads that are powered from the 4.16 kV ~~ESF~~ emergency buses are listed in Reference ~~2~~ 4. INSERT 5D ① ② ①

APPLICABLE SAFETY ANALYSES

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

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 ③ ④

1 **INSERT 5C**

(however the continuous service rating is not exceeded in the post accident load profile)

1 **INSERT 5D**

Each DG has its own starting air system consisting of two redundant starting air trains. Each train has one start receiver that normally contains sufficient air for two EDG start sequences. One start sequence includes a 10 second continuous crank and the second start sequence includes an actual run of the DG. The energy used for the first start sequence is greater than that required for the DG run sequence. Also each DG has its own day tank and fuel oil transfer system. The fuel oil transfer system, which includes two transfer pumps, is capable of transferring fuel oil from the associated fuel oil storage tank to the day tank. Each transfer pump is capable of maintaining the level in the day tank when the associated DG is operating a full load.

.

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. A worst case single failure.

The AC sources satisfy Criterion 3 of NRC Policy Statement. Operating 10 CFR 50.36(c)(2)(ii) ies 1

LCO

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

Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit. 14

[In addition, one required automatic load sequencer per train must be OPERABLE.] 3

Each offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses. emergency 1

[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.] INSERT 6 2

Each 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] seconds. Each DG must also be capable of accepting required loads within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with the engine hot and DG in standby with the engine at ambient conditions. Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the DG to revert to standby status on an ECCS signal while operating in parallel test mode. emergency emergency 1 1 2 1 3 5 INSERT 6A

Proper sequencing of loads, [including tripping of nonessential loads,] is a required function for DG OPERABILITY. permanent INSERT 6B 2 5 6

2

INSERT 6
(Unit 1 only)

The preferred qualified offsite circuit consists of RATs TR101CD and TR101AB, the cabling and breakers to 4.16 kV buses 1A, 1B, 1C, and 1D, 4.16 kV buses 1A, 1B, 1C, and 1D, and the cabling and breakers to 4.16 kV emergency buses T11A, T11B, T11C, and T11D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to either Train A 4.16 kV emergency buses T11C and T11D or Train B 4.16 kV emergency buses T11A and T11B.

2

INSERT 6
(Unit 2 only)

The preferred qualified offsite circuit consists of RATs TR201CD and TR201AB, the cabling and breakers to 4.16 kV buses 2A, 2B, 2C, and 2D, 4.16 kV buses 2A, 2B, 2C, and 2D, and the cabling and breakers to 4.16 kV emergency buses T21A, T21B, T21C, and T21D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to either Train A 4.16 kV emergency buses T21C and T21D or Train B 4.16 kV emergency buses T21A and T21B.

5

INSERT 6A

reject a load equivalent to its associated single largest post-accident load

5 6

INSERT 6B

In addition, day tank fuel oil level, air start receiver pressure (air pressure for one start in one air receiver), and fuel oil transfer system (one of the two fuel oil transfer pumps) requirements must be met for each required DG.

BASES

LCO (continued)

The AC sources in one train must be separate and independent (to the extent possible) of the AC sources in the other train. For the DGs, separation and independence are complete. INSERT 6C (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.~~ INSERT 7 (1) INSERT 8 (5)

APPLICABILITY

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

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of ~~AOOs~~ anticipated operational transients or abnormal transients and (4) (1)

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

INSERT 9 (5)

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources - Shutdown." INSERT 10 (6)

ACTIONS

A.1

To ensure a highly reliable power source remains with one required 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. INSERT 10 A (1) (5) (5) (5)

~~- 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~~ (7)

1

INSERT 6C

, except for the fuel oil storage tanks, which are shared between units

1

INSERT 7

If the main generator is supplying the Class 1E Distribution System, the preferred qualified offsite circuit must be capable of fast transfer to both trains of the Class 1E Distribution System. The alternate qualified offsite circuit must be capable of manual transfer to one train of the Class 1E Distribution System. The qualified preferred or alternate offsite circuit may be connected to more than one ESF train and not violate separation criteria.

5

INSERT 8

Additionally, the electrical unit's electrical sources must include electrical sources from the other unit that is required to support the Essential Service Water (ESW) System. When an ESW train is not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources are required to be OPERABLE and capable of supplying the appropriate Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution subsystems. In this case, at least one Unit 2 (Unit 1) and Unit 1 (Unit 2) qualified circuit shall be OPERABLE. If a Unit 2 (Unit 1) and Unit 1 (Unit 2) qualified circuit is not supplying the appropriate Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution subsystem, then the required Unit 2 (Unit 1) and Unit 1 (Unit 2) preferred qualified circuit must be OPERABLE with the capability to fast transfer to the appropriate Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution subsystem. If both ESW trains are not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), then two Unit 2 (Unit 1) and Unit 1 (Unit 2) DGs are required to be OPERABLE. If only one ESW train is isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), then the Unit 2 (Unit 1) and Unit 1 (Unit 2) DG associated with the un-isolated ESW train must be OPERABLE.

5

INSERT 9

A Note has been added taking exception to the Applicability requirements for the required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources in LCO 3.8.1.c and LCO 3.8.1.d provided the associated required equipment is inoperable. This exception is intended to allow declaring the Unit 2 (Unit 1) and Unit 1 (Unit 2) supported equipment inoperable either in lieu of declaring the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources inoperable, or at any time subsequent to entering ACTIONS for an inoperable Unit 2 (Unit 1) and Unit 1 (Unit 2) AC Source. This exception is acceptable since, with the Unit 2 (Unit 1) and Unit 1 (Unit 2) power equipment inoperable and the associated ACTIONS entered, the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources provide no additional assurance of meeting the above criteria.

6

INSERT 10

and other conditions in which AC sources are required

5

INSERT 10A

As Noted, this Required Action is not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) offsite circuit is inoperable.

BASES

ACTIONS (continued)

auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis. 7

A.2

Required Action A.2, which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are ~~powered from the redundant AC electrical power train.~~ INSERT 11 8 This includes motor driven auxiliary feedwater pumps. Single train systems, ~~such as turbine driven auxiliary feedwater pumps, may not be included.~~ INSERT 12 1

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 its loads; ~~and~~ 9 4

6 redundant

b. A redundant required feature on ~~the~~ an other train is inoperable. 1

If at any time during the existence of Condition A (one required offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked. 6

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System INSERT 13 coincident with one or more inoperable required support or supported features, or both, that are associated with ~~the~~ an 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. 5 5

The remaining required OPERABLE offsite circuit(s) and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System INSERT 14. 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 5 5

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8

INSERT 11

designed with redundant safety related trains.

1

INSERT 12

are normally not included, although, for this Required Action, the turbine driven auxiliary feedwater pump is considered redundant to Trains A and B. Redundant required features failures consist of inoperable features associated with a train, redundant to the train that has no offsite power available.

5

INSERT 13

or the required Unit 2 (Unit 1) and Unit 1 (Unit 2) onsite Class 1E Electrical Power Distribution System

5

INSERT 14

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution System when required to be OPERABLE

BASES

ACTIONS (continued)

reasonable time for repairs, and the low probability of a DBA occurring during this period.

A.3

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition A for a period that should not exceed 72 hours. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this ~~C~~ondition, ~~however, the remaining~~ OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System. INSERT 15

1 5 3 required

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.

The second Completion Time for Required Action A.3 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of 144 hours, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional 72 hours (for a total of 9 days) allowed prior to complete restoration of the LCO. The 6 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet the LCO 3.8.1.a or b. ~~This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the 72 hour and 6 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.~~ 5

As in Required Action A.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time that the LCO 3.8.1.a or b was initially not met, instead of at the time Condition A was entered. 5

B.1

To ensure a highly reliable power source remains with an inoperable DG, it is necessary to verify the availability of the offsite circuits on a more

5

INSERT 15

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution System when required to be OPERABLE

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BASES

ACTIONS (continued)

frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. INSERT 15A 5

~~- 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.~~ 7

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems ~~(such as turbine driven auxiliary feedwater pumps) are not included.~~ INSERT 16 1 Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG.

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

a. An inoperable DG exists ~~and~~ 3 4

6 redundant

b. A required feature on ~~the~~ an other train ~~(Train A or Train B)~~ is inoperable. 1

If at any time during the existence of this Condition (one required DG inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time ~~would~~ begin 5 to be tracked. 6 8

5 **INSERT 15A**

As Noted, this Required Action is not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) DG is inoperable.

1 **INSERT 16**

are normally not included, although, for this Required Action, the turbine driven auxiliary feedwater pump is considered redundant to Trains A and B.

BASES

ACTIONS (continued)

Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with ~~the OPERABLE DG~~ another train, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is ~~A~~acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 8 9

In this ~~C~~condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. INSERT 17 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. 1 5

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of ~~the~~ an inoperable DG does not exist on the other required OPERABLE DG(s), 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 or G of LCO 3.8.1 would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG(s), performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of th~~e~~ose DG(s). 5 5 9 6 5

In the event the inoperable DG is restored to OPERABLE status prior to completing either B.3.1 or B.3.2, the [plant corrective action program] will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the ~~24~~ 12 hour constraint imposed while in Condition B. 2 5

According to Generic Letter 84-15 (Ref. 7), [24] hours is reasonable to confirm that the OPERABLE DG(s) is not affected by the same problem as the inoperable DG. INSERT 17A 2 5

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5 **INSERT 17**

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution System when required to be OPERABLE

BASES

ACTIONS (continued)

B.4

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

required

In Condition B, the remaining OPERABLE DG(S) 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. 5 5

INSERT 18

The second Completion Time for Required Action B.4 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, an offsite circuit is inoperable and that circuit is subsequently restored OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of 144 hours, since initial failure to meet the LCO, to restore the DG. At this time, an offsite circuit could again become inoperable, the DG restored OPERABLE, and an additional 72 hours (for a total of 9 days) allowed prior to complete restoration of the LCO. The 6 day Completion Time provides a limit on time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the 72 hour and 6 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met. 5

3.8.1.a or b

As in Required Action B.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition B was entered.

and with inoperability of redundant required features

C.1 and C.2

required

Required Action C.1, which applies when two offsite circuits are inoperable, is intended to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions. The Completion Time for ~~this failure of redundant required features~~ is reduced to 12 hours from that allowed for one train without offsite power (Required Action A.2). The rationale for the reduction to 12 hours is that Regulatory Guide 1.93 (Ref. 6) allows a Completion Time of 24 hours for two required offsite circuits inoperable, 6 6 8

taking this action

5

INSERT 18

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Distribution System when required to be OPERABLE

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BASES

ACTIONS (continued)

based upon the assumption that two complete safety trains are OPERABLE. When a concurrent redundant required feature failure exists, this assumption is not the case, and a shorter Completion Time of 12 hours is appropriate. These features are ~~powered from redundant AC safety trains~~ INSERT 19 (8). This includes motor driven auxiliary feedwater pumps. Single train features~~, such as turbine driven auxiliary pumps, are not included in the list~~ INSERT 20 (1).

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

a. All required offsite circuits are inoperable, and (5) (4)

b. A redundant (6) required feature is inoperable.

If at any time during the existence of Condition C (two required (6) offsite circuits inoperable) a redundant required feature subsequently (8) becomes inoperable, this Completion Time begins to be tracked.

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition C for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources.

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

a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure, and (5) (4)

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.

8

INSERT 19

designed with redundant safety related trains.

1

INSERT 20

are normally not included, although, for this Required Action, the turbine driven auxiliary feedwater pump is considered redundant to Trains A and B. Redundant required features failures consist of inoperable features associated with a train, redundant to the train that has no offsite power available.

BASES

ACTIONS (continued) two

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. 5

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

D.1 and D.2

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

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition D for a period that should not exceed 12 hours.

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

BASES

ACTIONS (continued)

E.1

two required / is / more than two / may not be

With ~~Train A and Train B~~ DGs inoperable, there ~~are~~ no remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, ~~in~~sufficient standby AC sources ~~are~~ available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation. 1 6 1 1

for the majority of ESF equipment

unit

According to Reference 6, with both DGs inoperable, operation may continue for a period that should not exceed 2 hours. INSERT 21 1 1

~~[F.1~~

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

~~This Condition is preceded by a Note that allows the Condition to be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads under any conditions. Implicit in this Note is the concept that the Condition must be retained if any sequencer failure mode results in the inability to start all or part of the safety loads when required, regardless of power availability, or results in overloading the offsite power circuit to a safety bus during an event and thereby causes its failure. Also implicit in the Note, is that the Condition is not applicable to any train that does not have a sequencer.]~~ 3

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1 **INSERT 21**

This Completion Time assumes complete loss of onsite (DG) AC capability to power minimum loads needed to respond to analyzed event.

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BASES

ACTIONS (continued)

F

G.1 and G.2 (5)

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

G

H.1

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

SURVEILLANCE REQUIREMENTS

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with ~~10 CFR 50, Appendix A, GDC 18~~ (Ref. 8). INSERT 21A (9) (10) Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SRs for demonstrating the OPERABILITY of the DGs are in accordance with the recommendations of Regulatory Guide 1.9 (Ref. 3), Regulatory Guide 1.108 (Ref. 9), ~~and~~ Regulatory Guide 1.137 (Ref. 10), and IEEE Standard 387-1995 (Ref. 11) as addressed in the ~~FSAR~~ applicable SR discussion. (1)

(94)

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of ~~[3740]~~ 3910 V is ~~[90]~~% of the nominal 4160 V output voltage. This value, ~~which is specified in ANSI C84.1 (Ref. 11), allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating.~~ INSERT 21B (1) The specified maximum steady state output voltage of ~~[4756]~~ 4400 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 steady state frequencies of the DG (5)

10 **INSERT 21A**

Plant Specific Design Criterion (PSDC) 39

1 **INSERT 21B**

ensures the ESF pumps have an adequate level of voltage so that they are assured of achieving adequate fluid flow to meet their safety and accident mitigation functions.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

59.4

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 21C

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that ~~distribution buses and loads are connected to their preferred power source~~ INSERT 21D, and that appropriate independence of offsite circuits is maintained. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 3.8.1.2 and SR 3.8.1.~~7~~ 8

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~~ 8) 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~~ 8 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~~ the manufacturer~~s~~ recommend~~s~~ 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~~.

8

SR 3.8.1.~~7~~ requires that, at a 184 day Frequency, the DG starts from standby conditions and achieves required voltage and frequency within

1 **INSERT 21C**

ensure the ESF pumps can achieve adequate fluid flow to meet their safety and accident mitigation functions. The minimum voltage and frequency limits specified to be met within the DG start time of 10 seconds are based upon the recommendations given in Regulatory Guide 1.9 (Ref. 3).

6 **INSERT 21D**

the required qualified offsite circuits are OPERABLE

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BASES

SURVEILLANCE REQUIREMENTS (continued)

Section 14.3

10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR, ~~Chapter 15~~ (Ref. 5). 1 2

U

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~~ 8 applies. 5 5

of SR 3.8.1.2

Since SR 3.8.1.~~7~~ 8 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. 5

INSERT 22

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. 6

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~~ 8 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. 5

SR 3.8.1.3

INSERT 22 A

INSERT 22 B

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. 13 13

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~~. 2 2 2 15

INSERT 22C

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

1 **INSERT 22**

, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The voltage and frequency limits are normally achieved within 10 seconds.

13 **INSERT 22A**

Consistent with Regulatory Guide 1.9 (Ref. 3),

13 **INSERT 22B**

90% to 100% of the continuous rating of the DG

15 **INSERT 22C**

being required in order to maintain DG reliability

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BASES

SURVEILLANCE REQUIREMENTS (continued)

This SR is modified by four Notes. Note 1 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 2 states that momentary transients, because of changing bus loads, do not invalidate this test. ~~Similarly, momentary power factor transients above the limit do not invalidate the test.~~ Note 3 indicates that this Surveillance should be conducted on only one DG at a time in order to avoid common cause failures that might result from offsite circuit or grid perturbations. Note 4 stipulates a prerequisite requirement for performance of this SR. A successful DG start must precede this test to credit satisfactory performance. 6

SR 3.8.1.4

INSERT 22D

greater than 15 minutes

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

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.

SR 3.8.1.5

each

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~~ tank~~s~~ once every ~~[~~31~~]~~ days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 10). This SR is for preventative maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance. 6 3 2

1 **INSERT 22D**

of which 31.4 gallons is unusable (due to tank geometry and vortexing considerations) and 70 gallons is usable,

BASES

SURVEILLANCE REQUIREMENTS (continued)

(one per fuel oil transfer system)

SR 3.8.1.6

automatically

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. (1)

[The Frequency for this SR is ~~variable, depending on individual system design, with up to a~~ [92] day ~~interval~~. The [92] day Frequency corresponds to the testing ~~requirements for pumps as contained in the~~ ASME Code ~~Section XI~~ (Ref. 11)~~; however, the design of fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day [and engine mounted] tanks during or following DG testing. In such a case, a 31 day Frequency is appropriate. Since proper operation of fuel transfer systems is an inherent part of DG OPERABILITY, the Frequency of this SR should be modified to reflect individual designs.]~~ (5) (2) (12) (1) (1) OM (5)

~~SR 3.8.1.7~~

~~See SR 3.8.1.2.~~ (8)

INSERT 23 (5)

[SR 3.8.1.8] (9)

Automatic

[T]ransfer of each [4.16 kV ~~ESF~~] bus [power supply from the normal ~~offsite~~ circuit to the ~~alternate~~ offsite circuit] demonstrates the OPERABILITY of the ~~alternate~~ circuit ~~distribution network~~ to power the shutdown loads. The [18 months] 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 months] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

emergency auxiliary (2) (1) (5) INSERT 24 (5) preferred required offsite (24) (1) (2) (1) (24) (2)

INSERT 24A (5)

~~This SR is modified by a Note. The reason for the Note is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in~~ (5)

5

INSERT 23

SR 3.8.1.7

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. While the system design requirements provide for two engine start cycles from each of the two air start receivers associated with each DG without recharging, only one start sequence is required to meet the OPERABILITY requirements (since the accident analysis assumes the DG starts on the first attempt). The pressure specified in this SR reflects the lowest value at which one DG start can be accomplished with one air start receiver.

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.

5

INSERT 24

and the manual alignment to the alternate required offsite circuit

INSERT 24A

As noted (Note 1 to SR 3.8.1.9), SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the onsite electrical power subsystem. This is acceptable since the preferred offsite source would be supplying the onsite electrical power subsystem and a transfer would not be necessary.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

~~MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.]~~ (5)

(5)

SR 3.8.1.~~9~~ 10

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined ~~voltage and~~ frequency and while maintaining a specified margin to the overspeed trip. [For this unit, the single load for each DG ~~and its horsepower rating~~ is ~~as follows:~~ 600 kW.] This Surveillance may be accomplished by either: (a) (6) (6) (2)

(1) INSERT 25

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus ~~or~~ (;) (4)

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

INSERT 26 ~~As required by IEEE-308 (Ref. 12)~~, the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above ~~synchronous~~ nominal speed, whichever is lower. INSERT 27 (1) (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 ~~[3]~~ 2 seconds specified is (5)

1 **INSERT 25**

Voltage and frequency are also verified to reach steady state conditions within 2 seconds.

1 **INSERT 26**

Consistent with Regulatory Guide 1.9 (Ref. 3)

1 **INSERT 27**

This corresponds to 64.4 Hz, which is the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint.

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AC Sources - Operating
B 3.8.1

BASES

SURVEILLANCE REQUIREMENTS (continued)

approximately the 3.49 (1)

equal to 60% of ~~a typical 5~~ second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The 18 month Frequency is ~~consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9)~~. INSERT 28 (1) (10) (24) (5)

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit 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~~ unit shutdown and startup to determine that ~~plant~~ unit 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 28A (12) (9) (1) (1)

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~~ 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 DG excitation levels needed to obtain a power factor of ~~0.9~~ 0.86 may not cause unacceptable voltages on the emergency (2) (9)

1

INSERT 28

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

12

INSERT 28A

Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to 0.9 without exceeding the DG excitation limits. 0.86 2

- 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: 7

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. 5

SR 3.8.1.10 1

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.8,

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. 1 INSERT 28B 13

24 The 18 month Frequency is ~~consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths~~. 2 1

INSERT 29

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

13 **INSERT 28B**

(90% to 100% of the DG continuous rating)

1 **INSERT 29**

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

challenge continued steady state operation and, as a result, unit safety systems. Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than ≤ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to [0.9] without exceeding the DG excitation limits. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.

0.86 (9) (9) (2) (2) (1) (9) (1) unit unit INSERT 29A (12)

-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,

(7)

12

INSERT 29A

Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

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

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

7

SR 3.8.1.10 2 5

INSERT 29B

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

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

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

The Frequency of [~~18 months~~] 24 is ~~consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), takes~~ INSERT 30 into consideration unit conditions required to perform the Surveillance~~, and is intended to be consistent with expected fuel cycle lengths~~. INSERT 31 1 1

INSERT 29B

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.4

1 **INSERT 30**

based on engineering judgement, taking

1 **INSERT 31**

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

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

, 3, or 4 (6) (9) (1) unit (1) unit (1) unit (6) (1) , 3, or 4 (6) INSERT 32 (12)

SR 3.8.1.12 (3) (5)

INSERT 32A (1)

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (10 seconds) from the design basis actuation signal (~~LOCA~~ signal) and operates for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12.d and SR 3.8.1.12.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

(2) (6) ESF actuation (1) INSERT 33 (6) (13) (5)

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or ~~high pressure injection systems~~ are not capable of being operated at full flow, or RHR

(5) centrifugal charging trains (1)

12

INSERT 32

Credit may be taken for unplanned events that satisfy this SR.

1

INSERT 32A

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.5,

6

INSERT 33

In addition, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The voltage and frequency limits are normally achieved within 10 seconds. The time for the DG to reach the steady state voltage and frequency limits is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance. The DG is required to

BASES

SURVEILLANCE REQUIREMENTS (continued)

trains ~~systems~~ performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. 1

INSERT 34

The Frequency of 24 ~~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 24 ~~18~~ month~~s~~ Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 2 1 1 2

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g.**,** post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines unit ~~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 unit ~~plant~~ shutdown and startup to determine that unit ~~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. INSERT 34A 9 1 1 2 12

1

INSERT 34

is based on engineering judgement, taking

12

INSERT 34A

Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.10 (4)

INSERT 34B

This Surveillance demonstrates that DG noncritical protective functions (e.g., ~~high jacket water temperature~~) are bypassed on a loss of voltage signal ~~concurrent with~~ an ESF actuation test signal, and critical protective functions (engine overspeed, generator differential current, low lube oil pressure, high crankcase pressure, and start failure relay) trip the DG to avert substantial damage to the DG unit. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG. (1) (1) (11)

low lube oil pressure

or (5)

(24)

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. (2) (1) (24) (2)

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~~ unit 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~~ unit 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. (9) (1) (1)

INSERT 34C (12)

1 **INSERT 34B**

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.12

12 **INSERT 34C**

Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

- REVIEWER'S NOTE -

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

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

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

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

7

SR 3.8.1.10 5 INSERT 34 E 13 5

INSERT 34D

Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, ≥ [2] hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR. 1 1

8

INSERT 34F

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. 15

INSERT 34G

24

The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. 2 1

INSERT 35

This Surveillance is modified by three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during

1 **INSERT 34D**

This Surveillance demonstrates

13 **INSERT 34E**

(90% to 100% of the DG continuous rating)

1 **INSERT 34F**

The run duration of 8 hours is consistent with IEEE Standard 387-1995 (Ref. 11).

15 **INSERT 34G**

being required in order to maintain DG reliability

1 **INSERT 35**

is based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Note 3 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 3 allows the Surveillance to be conducted as a power factor other than ≤ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained close as practicable to [0.9] without exceeding the DG excitation limits. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.

0.86 (9) (2) (5) unit (9) unit

SR 3.8.1.15 (6) INSERT 35A (5) (12)

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

12

INSERT 35A

Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

24 The ~~18~~ month~~s~~ Frequency is ~~consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5)~~. INSERT 36 (1) (2)

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections ~~in accordance with vendor recommendations in order to maintain DG OPERABILITY~~. The requirement that the diesel has operated for at least ~~2~~ hours at full load 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 DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing. (15) (2) (15)

INSERT 36A

operating experience

SR 3.8.1.~~16~~ 7 (5)

INSERT 36B

~~As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6),~~ this Surveillance ensures that the manual synchronization and ~~automatic~~ load transfer from the DG to the offsite source can be made and the DG can be returned to ready~~-~~to~~-~~load status when offsite power is restored. It also ensures that the auto~~-~~start logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready~~-~~to~~-~~load status when the DG is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the ~~load sequence timers~~ are reset. (1) (1) (5) (1)

individual time delay relays

24 The Frequency of ~~18~~ months~~)~~ is ~~consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), and takes~~ into consideration unit conditions required to perform the Surveillance. INSERT 37 INSERT 38 (2) (1)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1 ~~or 2~~ is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., ~~post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns)~~ provided an assessment determines ~~plant~~ unit 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 (9) (1)

(6) , 3, or 4 (3) (3)

1 **INSERT 36**

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

15 **INSERT 36A**

being required in order to maintain DG reliability

1 **INSERT 36B**

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.11,

1 **INSERT 37**

based on engineering judgement, taking

1 **INSERT 38**

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

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~~ unit shutdown and startup to determine that ~~plant~~ unit safety is maintained or enhanced when the Surveillance is performed in MODE 1, ~~or~~ 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment. INSERT 39

1 6 12 5

[SR 3.8.1.17

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

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.12. The intent in the requirement associated with SR 3.8.1.17.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable.

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

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow 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

12

INSERT 39

Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

~~safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment.]~~ 5

SR 3.8.1.18

1 INSERT 40

1 INSERT 41

Under accident ~~[and loss of offsite power]~~ conditions loads are sequentially connected to the bus by the ~~[automatic load sequencer]~~ individual time delay relays. 3 2 The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. 5 The (10)% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. 2 4 Reference 2 provides a summary of the automatic loading of ~~ESF~~ emergency buses. 1 2

24 The Frequency of [18] months ~~is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes~~ into consideration unit conditions required to perform the Surveillance ~~and is intended to be consistent with expected fuel cycle lengths~~. INSERT 41A 1 INSERT 42 1

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. 8

INSERT 43

~~- 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,~~ 7

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1 **INSERT 40**

or RATs (as applicable)

1 **INSERT 41**

and RATs to restore voltage

1 **INSERT 41A**

based on engineering judgement, taking

1 **INSERT 42**

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

8 **INSERT 43**

This restriction from normally performing the Surveillance in MODE 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 unit 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 unit shutdown and startup to determine that unit safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for the assessment. Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

~~b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~ 7

~~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

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

This Surveillance demonstrates the DG operation, as discussed in the Bases for SR 3.8.1.11, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. 5 2 2

24 INSERT 44

The Frequency of ~~18~~ 24 months INSERT 44 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~~. INSERT 45 1

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, ~~or~~ 2, 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~~ unit 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 3 6 3 1

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1

INSERT 44

is based on engineering judgement, taking

1

INSERT 45

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

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~~ Unit shutdown and startup to determine that ~~plant~~ safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 ~~or~~ , 2, 3, or 4. Risk insights or deterministic methods may be used for the assessment. (1) (6) (5)

SR 3.8.1.20

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

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

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.

INSERT 46 (5)

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. U FSAR, ~~Chapter~~ Section ~~[8]~~ 8.3. (1) (2)
3. Regulatory Guide 1.9, Rev. 3. INSERT 47 (1)
4. ~~FSAR, Chapter [6].~~
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. ~~10 CFR 50, Appendix A, GDC 18.~~ INSERT 48 (1)
9. Regulatory Guide 1.108, Rev. 1, August 1977.

5 **INSERT 46**

SR 3.8.1.21

With the exception of this Surveillance, all other Surveillances of this Specification (SR 3.8.1.1 through SR 3.8.1.20) are applied to Unit 1 (Unit 1) and Unit 2 (Unit 2) sources. This Surveillance is provided to direct that appropriate Surveillances for the required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources are governed by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications. Performance of the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) Surveillances will satisfy the Unit 2 (Unit 1) and Unit 1 (Unit 2) requirements as well as satisfy this Unit 1 (Unit 2) and Unit 1 (Unit 2) Surveillance Requirement. Exceptions are noted to the Unit 2 (Unit 1) and Unit 1 (Unit 2) SRs of LCO 3.8.1. SR 3.8.1.9.b is not required to be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE. SR 3.8.1.18 is not required to be met because the required OPERABLE DG(s) is not required to undergo periods of being synchronized to the offsite circuit. SR 3.8.1.20 is excepted because starting independence is not required with the DG(s) that is not required to be OPERABLE.

The Frequency required by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) SR also governs performance of that SR for Unit 1 (Unit 1) and Unit 2 (Unit 2).

As noted (Note 1 to SR 3.8.1.22), if the Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies, SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, SR 3.8.1.14 through SR 3.8.1.17, and SR 3.8.1.18 are not required to be performed. This ensures that this Unit 1 (Unit 1) and Unit 2 (Unit 2) SR will not require a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR to be performed, when the Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications exempts performance of a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR (however, as stated in the Unit 2 (Unit 1) and Unit 1 (Unit 2) SR 3.8.2.1 Note 1, while performance of an SR exempted, the SR must still be met). As noted (Note 2 to SR 3.8.1.21), SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical power distribution subsystem since the preferred offsite source is required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations.

1 **INSERT 47**

4. UFSAR, Section 8.4.

1 **INSERT 48**

UFSAR, Section 1.4.7.

BASES

REFERENCES (continued)

(1)

INSERT 49

10. Regulatory Guide 1.137, Rev. ~~1~~ 0, ~~(date)~~. October 1979 (2)

(1) (2)

~~11~~. ASME, ~~Boiler and Pressure Vessel Code, Section XI~~. INSERT 50 (1)

~~12. IEEE Standard 308-1978.~~ (1)

1 **INSERT 49**

11. IEEE Standard 387-1995.

1 **INSERT 50**

Operation and Maintenance Standards and Guides (OM Codes)

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1 BASES, AC SOURCES - OPERATING

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

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. This bracketed requirement, information is deleted since it is not applicable.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. Changes are made to reflect changes made to the Specification.

6. Changes are made to reflect the Specifications.

7. The Reviewer's Note is deleted because it is not intended to be included in the plant specific ITS submittal.

8. Changes have been made to be consistent with similar phrases in other Bases.

9. Grammatical/editorial error corrected.

10. CNP Units 1 and 2 were designed and under construction prior to the promulgation of 10 CFR 50, Appendix A. CNP Units 1 and 2 were designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. However, the CNP UFSAR contains discussions of the Plant Specific Design Criteria (PSDCs) used in the design of CNP Units 1 and 2. Bases references to the 10 CFR 50, Appendix A criteria have been replaced with references to the appropriate section of the UFSAR.

11. The description in the Bases for ISTS SR 3.8.1.13 (ITS SR 3.8.1.14) concerning the critical protective function being capable of tripping the DG has been deleted consistent with proposed TSTF-400.

12. TSTF-283, Rev. 3 was approved by the NRC on April. 13, 2000. However, when NUREG-1431, Rev. 2 was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3 have been made.

13. Changes are made to be consistent with Regulatory Guide 1.9, Rev. 3 recommendations.

14. This statement has been deleted since the LCO requirements for the qualified offsite circuits are described in the fifth paragraph of the LCO Section.

15. The recommendations of the CNP DG vendor regarding tear-down inspections do not make specific adjustments in frequencies based on engine overloading. They recommend that frequencies be adjusted based on overall operating history of the machine, including consideration of engine loading. In addition, the statement concerning DG run time to achieve hot conditions is based on operating experience

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1 BASES, AC SOURCES - OPERATING

not manufacturer recommendations. The wording of the Bases has been adjusted to reflect this.

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Specific No Significant Hazards Considerations (NSHCs)

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

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.20

CNP is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of No Significant Hazards Considerations for conversion to NUREG-1431.

CTS 4.8.1.1.2.e.10 requires verifying that with the DG operating in a test mode while connected to its test load, a simulated Safety Injection (SI) signal overrides the test mode by returning the DG to standby operation and ensuring the emergency loads remain powered by offsite power. The ITS does not include this Surveillance Requirement. This changes the CTS by deleting this Surveillance Requirement.

The purpose of CTS 4.8.1.1.2.e.10 is to verify the design of the DG logic when the DG is connected to the test bank. The CNP design includes the capability of paralleling the DG with a test bank instead of actually paralleling the DG with offsite power (i.e., via the emergency buses). However, the test bank only provides a capability to load the DG to approximately 50% of the rating of the DG (i.e., 1690 kW). With the exception of a single Surveillance (CTS 4.8.1.1.2.e.2), all DG loading Surveillances require the DG to be loaded to greater than the rating of the test bank. Thus, the test bank is not allowed to be used to meet these Surveillances. In the ITS, the DG loading required for these Surveillances will also remain greater than the capability of the test bank.
CTS 4.8.1.1.2.e.2, the Surveillance that does not require the DG to be loaded greater than the rating of the test bank, is a test of the DGs capability to reject a load equivalent to the single largest post-accident load. Since this test is normally performed in conjunction with the full load rejection test (CTS 4.8.1.1.2.e.3), the load bank is not used for the test and the DG is normally paralleled with offsite power. In addition, CTS 4.8.1.1.2.e.2 is required to be performed while shutdown and ITS SR 3.8.1.10 maintains this requirement (i.e., it cannot be performed in MODES 1 and 2). Thus, even if this test were performed using the test bank, the unit would not be critical. Furthermore, this change is only requesting the removal of the requirement to test this design feature from the CTS and it will not result in physically removing the feature from the DG logic. Therefore, this change is acceptable since the CTS Surveillance verifies a design feature that cannot be used to meet the requirements for the vast majority of the CTS Surveillances, and the one Surveillance the design feature can be used for is not normally performed using the test bank, and even if performed using the test bank, the Surveillance cannot be performed in MODES 1 and 2. This change is designated as less restrictive because a Surveillance Requirement has been deleted from the CTS.

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

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

The proposed change deletes the requirement to verify a design feature that cannot be used to meet the requirements for the vast majority of the CTS Surveillances, and the one Surveillance the design feature can be used for is not normally performed using the test bank, and even if performed using the test bank, the Surveillance cannot be performed in MODES 1 and 2. This change will not affect the probability of an accident, since the performance of any of the DG Surveillance Requirements is not considered as an initiator of an analyzed accident. The consequences of an analyzed accident cannot be significantly increased since only one SR can be performed using the test bank, and it is normally not performed with a test bank. In addition, if performed with the test bank, it cannot be performed in MODES 1 and 2 (i.e., the reactor will not be critical). Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change deletes the requirement to verify a design feature that cannot be used to meet the requirements for the vast majority of the CTS Surveillances, and the one Surveillance the design feature can be used for is not normally performed using the test bank, and even if performed using the test bank, the Surveillance cannot be performed in MODES 1 and 2. This change will not physically alter the plant (no new or different type of equipment will be installed). In addition, no changes will be made to the operation of the unit. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No.

The proposed change deletes the requirement to verify a design feature that cannot be used to meet the requirements for the vast majority of the CTS Surveillances, and the one Surveillance the design feature can be used for is not normally performed using the test bank, and even if performed using the test bank, the Surveillance cannot be performed in MODES 1 and 2. The margin of safety is not affected by this change because the Surveillance is normally performed without using the test bank (i.e., it is performed in a condition that does not rely on the design feature), and if performed while relying on the test feature (i.e., while paralleled to the test bank), it can only be performed when the unit is not critical. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

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

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.21

CNP is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of No Significant Hazards Considerations for conversion to NUREG-1431.

CTS 3.8.1.1 Action b specifies the compensatory actions for one inoperable DG and CTS 3.8.1.1 Action c specifies the compensatory actions for one inoperable offsite circuit and one inoperable DG. The Actions include a requirement to demonstrate the OPERABILITY of the remaining OPERABLE DG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining DG is demonstrated. ITS 3.8.1 Required Actions B.3.1 and B.3.2 allows 12 hours to perform similar checks on the remaining OPERABLE DGs. This changes the CTS by extending the time to perform these checks from 8 hours to 12 hours.

The purpose of the above specified CTS Actions is to ensure that the other unit DG is not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). Currently, the 8 hour time limit specified is sufficient to actually perform CTS 4.8.1.1.2.a.4, a normal DG start test, on the other unit DG. However, due to the addition of the opposite unit DG requirements discussed in DOC M.2, there is a possibility that ITS 3.8.1 ACTION B will be entered due to an opposite unit DG inoperability. This could result in ITS 3.8.1 Required Action B.3.2 being required on two unit DGs. That is, the DG start test could have to be performed on two DGs. Based on Operations Department experience, it would be difficult to perform a DG start test on two DGs within the current 8 hour time limit, considering the time it normally takes to perform the test on a single DG, as well as to perform pre-evolution briefs for the operating crew and to safely transition between the DG tests. The proposed 12 hour time limit is considered a reasonable time to complete the DG start tests on two DGs. Generic Letter 84-15 identified that a 24 hour time limit was acceptable to perform these common mode failure checks. Since the 12 hour time limit being proposed is within the 24 hour limit allowed by the NRC in Generic Letter 84-15, the change is considered acceptable. In addition, the change is considered acceptable since the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE.

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed change extends the time allowed to perform the DG common mode failure checks from 8 hours to 12 hours. This change will not affect the

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probability of an accident, since the DG is not considered as an initiator of an analyzed accident. The consequences of an analyzed accident will not be significantly increased since the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE and the NRC has approved (in Generic Letter 84-15) up to 24 hours to demonstrate the remaining DG(s) are not inoperable due to common mode failure. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change extends the time allowed to perform the DG common mode failure checks from 8 hours to 12 hours. This change will not physically alter the plant (no new or different type of equipment will be installed). In addition, no changes will be made to the operation of the unit. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No.

The proposed change extends the time allowed to perform the DG common mode failure checks from 8 hours to 12 hours. The margin of safety is not affected by this change because the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE and the NRC has approved (in Generic Letter 84-15) up to 24 hours to demonstrate the remaining DG(s) are not inoperable due to common mode failure. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

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ATTACHMENT 2

ITS 3.8.2, AC Sources - Shutdown

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

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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: M.1

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

M.2

b. One diesel generator with:

101.4 A.5

SR 3.8.2.1

1. A day fuel tank containing a minimum of ~~70~~ gallons of fuel,

See ITS 3.8.3

2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and

LA.1

3. A fuel transfer pump.

M.3

During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment

APPLICABILITY: MODES 5 and 6.

Add proposed ACTIONS Note M.3

ACTION:

Add proposed ACTION A Note

Add proposed Required Action A.1 A.2

L.4

ACTIONS A and B

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2. L.1

additions that could result in loss of required SDM or boron concentration

Add proposed Required Actions A.2.2 and B.2 M.3

Add proposed Required Actions A.2.4 and B.4 M.4

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 Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. L.2

Note to SR 3.8.2.1

Add proposed SR 3.8.2.1 exceptions L.3

L.6

~~Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.~~ A.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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: M.1

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with: M.2

SR 3.8.2.1

1. A day fuel tank containing a minimum of 70 gallons of fuel, 101.4 A.5

2. ~~A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and~~ See ITS 3.8.3 L.5

3. ~~A fuel transfer pump.~~ LA.1 A.4 M.3

Add proposed LCO 3.8.2.c

APPLICABILITY: MODES 5 and 6.

During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

ACTION:

Add proposed ACTIONS Note M.3

Add proposed ACTION A Note

Add proposed Required Action A.1 A.2 L.4

ACTIONS A and B

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ L.1 M.3

Add proposed Required Actions A.2.2 and B.2

additions that could result in loss of required SDM or boron concentration

Add proposed Required Actions A.2.4 and B.4 M.4

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 Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. L.2 L.3

Note to SR 3.8.2.1

Add proposed SR 3.8.2.1 exceptions

~~Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.~~ L.6 A.3

Add SR 3.8.2.1 for Unit 1 AC Source M.5

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ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.8.1.2 does not address the situation when an ESF bus is de-energized as a result of the loss of an AC Source to an ESF bus. A Note has been added to the Required Actions for an inoperable offsite circuit (ITS 3.8.2 ACTION A) which requires entry into the applicable Conditions and Required Actions of LCO 3.8.10 when one required train (ESF bus) is de-energized as a result of an inoperable offsite circuit. This changes the CTS by directing entry into LCO 3.8.10.

AC Sources are considered a support system to the AC Distribution System (ITS 3.8.10). If AC Sources are inoperable such that a distribution subsystem is made inoperable, then ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the AC Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in this event (e.g., RHR-shutdown cooling could be inoperable), specific direction to take appropriate ACTIONS for the Distribution System is added (proposed Note to ITS 3.8.2 ACTION A). This format and construction implements the existing treatment of this condition within the framework of the CNP Unit 1 and 2 CTS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 4.8.1.2 allows certain 18 month Surveillance Requirements, commencing in 1999 during the extended shutdown initiated in 1997, to be delayed one time until just prior to the first entry into MODE 4 following the shutdown. ITS 3.8.2 does not include this allowance.

This allowance in CTS 4.8.1.2 has expired; therefore it will not be included in the ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 (Unit 2 only) CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE and CTS 3.8.1.2.b requires one DG to be OPERABLE. These two required AC Sources are Unit 2 sources. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC Sources) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE - OPERABILITY" includes both a normal and emergency electrical power source requirement. However, there are no specific requirements in Unit 2 CTS 3.8.1.2 requiring the Unit 1 AC Sources to be OPERABLE to support the FHAEV System. In addition, CTS 3.0.5, which provides compensatory actions when an AC Source is inoperable, is not applicable in MODES 5 and 6. Unit 2 ITS LCO 3.8.2.c requires one Unit 1

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qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10. In addition, Unit 2 ITS 3.8.2 ACTION A also applies to an inoperable Unit 1 AC Source. This changes the Unit 2 CTS by explicitly requiring one Unit 1 offsite circuit to be OPERABLE and powering the Unit 1 equipment required to be OPERABLE, and requires the FHAEV System to be declared inoperable or to suspend movement of irradiated fuel assemblies if the Unit 1 AC Source is inoperable.

The purpose of Unit 2 ITS LCO 3.8.2.c is to ensure an AC Source is available to support required equipment. The explicit requirement for the Unit 1 AC Source is not included in Unit 2 CTS 3.8.1.2. However, based on the definition of OPERABILITY, the normal source is required to be OPERABLE to support the FHAEV System. Thus adding the explicit Unit 2 ITS LCO 3.8.2.c requirement is considered administrative since this support component is currently required to be OPERABLE in accordance with the definition of OPERABILITY. The new ACTION to declare the associated equipment inoperable or suspend movement of irradiated fuel assemblies is also administrative since this declaration is currently required by the application of the CTS (equipment is declared inoperable when the associated support equipment is inoperable). This change is designated as administrative because it does not result in a technical change to the Unit 2 CTS.

A.5 CTS LCO 3.8.1.2.b.1 requires a DG fuel day tank to contain a minimum volume of 70 gallons of fuel. ITS SR 3.8.2.1 (which references SR 3.8.1.4) requires a DG fuel day tank to contain $\geq$ 101.4 gallons of fuel oil. This changes the CTS by clarifying that the amount of fuel oil required to be stored in the DG day tank includes both the usable and unusable volumes.

The purpose of CTS LCO 3.8.1.2.b.1 is to ensure the DG has sufficient fuel oil supply to allow the DG to run at full load before one of the fuel oil transfer pumps must be started to replenish the fuel oil supply and ensure uninterrupted DG service. As stated in the CTS Bases, the 70 gallons of fuel required by CTS 3.8.1.2.b.1 is the usable volume. For clarity and for consistency with the fuel oil storage tank volume requirement, the contained volume is provided. Each day tank has 31.4 gallons of unusable volume (taking into account the geometry of the tank and a minimum submergence to suppress vortexing). Therefore, the proposed value of 101.4 gallons ensures 70 gallons of usable fuel oil in the day tank. The change is acceptable since the proposed DG fuel oil volume in each day tank will ensure at least 15 minutes of DG operation. This change is designated as administrative because the day tank volume requirements are now explicit in stating the required volume of 101.4 gallons is a contained volume.

MORE RESTRICTIVE CHANGES

M.1 CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE. ITS LCO 3.8.2.a requires one qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by

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LCO 3.8.10, "Distribution Systems – Shutdown," to be OPERABLE. This changes the CTS by being specific as to what the required circuit must be capable of powering.

The purpose of CTS 3.8.1.2.a is to ensure the offsite circuit is OPERABLE in order to supply the equipment supported by the onsite Class 1E distribution system. The existing requirement of CTS LCO 3.8.1.2.a for one offsite circuit to be OPERABLE during shutdown conditions is not specific as to what that circuit must be powering. The requirement in ITS LCO 3.8.2.a specifies that the circuit must be available to supply power to all equipment required to be OPERABLE in the current plant condition. This change is acceptable since the added restriction conservatively assures the needed offsite circuit is powering all AC loads required to be OPERABLE. This change is designated as more restrictive because more explicit offsite circuit requirements have been added.

M.2 CTS 3.8.1.2.b requires one DG to be OPERABLE. ITS LCO 3.8.2.b requires one DG capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10. This changes the CTS by being specific as to what the required DG must be capable of powering.

The purpose of CTS 3.8.1.2.b is to ensure the DG is OPERABLE. This change provides an explicit requirement as to what the required DG must be capable of powering. Similar to the added restrictions for an OPERABLE offsite circuit (refer to DOC M.1 above), the single unit DG required OPERABLE during shutdown conditions by CTS 3.8.1.2.b is not specific as to what train that DG must be associated with. The requirement in ITS LCO 3.8.2.b will ensure the OPERABLE DG is associated with one or more systems, subsystems, or components required to be OPERABLE. This added restriction enforces a level of Technical Specification control which currently is enforced only by administrative procedures. This change is designated as more restrictive because more explicit DG requirements have been added.

M.3 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 the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. ITS 3.8.2 Required Action A.2.2 (for an inoperable required offsite circuit) and ITS 3.8.2 Required Action B.2 (for an inoperable required DG) requires the immediate suspension of movement of irradiated fuel assemblies. In addition, a Note has been added to the ACTIONS of ITS 3.8.2 which states that LCO 3.0.3 is not applicable. This changes the CTS by requiring the AC Sources to be OPERABLE under more conditions and provides additional compensatory actions when the LCO requirements are not met.

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 in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. The movement of irradiated fuel assemblies may occur during MODE 5 or 6, however the operations could also occur while the unit is operating. CTS 3.8.1.1 (ITS 3.8.1) and CTS 3.8.1.2 do not provide the appropriate compensatory actions. The activity should be suspended immediately when the AC Sources are not available consistent with the immediate actions for CORE ALTERATIONS and positive reactivity changes. The ACTIONS Note which states that LCO 3.0.3 is not applicable is necessary because moving fuel assemblies in MODE 1, 2, 3, or 4 is independent of reactor operations; that is the actions in LCO 3.0.3 will not place the unit in a safe 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). AC Sources provides the power for the AC Distribution System. This change is designated as more restrictive because the Applicability of the Specification has been expanded.

M.4 The CTS 3.8.1.2 Action requires the suspension of CORE ALTERATIONS and certain positive reactivity changes when a required AC Source is inoperable. It does not include an action to restore the inoperable AC Source or to exit the Applicability of the Specification. ITS 3.8.2 Required Actions A.2.4 and B.4 require the immediate initiation of action to restore the required AC Source to OPERABLE status. This changes the CTS by adding explicit Required Actions to restore the inoperable AC Source to OPERABLE status.

The purpose of ITS 3.8.1.2 Required Action A.2.4 and B.4 are to place the unit within the requirements of the LCO. When a required offsite circuit or a required DG is inoperable, the actions imposed by CTS 3.8.1.2 Action a do not necessarily place the unit in a MODE or other specified condition in which CTS LCO 3.8.1.2 is not applicable. Therefore, proposed ITS 3.8.2 Required Actions A.2.4 and B.4 are being added. These Required Actions implement a requirement to immediately initiate action to restore the required AC Sources to an OPERABLE status. These additional restrictions are consistent with implicit assumptions and will ensure action is immediately taken to restore compliance with the LCO requirements. This change is designated as more restrictive because the Required Actions do not exist in the CTS.

M.5 (Unit 2 only) CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE and CTS 3.8.1.2.b requires one DG to be OPERABLE. These two required AC Sources are Unit 2 sources. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC Sources) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE - OPERABILITY" includes both a normal and emergency electrical power source requirement. However, there are no specific requirements in Unit 2 CTS 3.8.1.2 requiring the testing of the Unit 1 AC Sources that support the FHAEV System. Unit 2 ITS LCO 3.8.2.c requires one Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10. This change is discussed in DOC A.4. An explicit SR (ITS SR 3.8.2.1) has been added which requires the applicable SRs of ITS 3.8.1, "AC Sources - Operating," to be applicable to each AC source required to be OPERABLE. This changes the Unit 2 CTS by explicitly requiring Surveillance Requirements for the Unit 1 AC Source required to be OPERABLE to support Unit 2 operation.

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The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.2.1) has been added which requires the applicable SRs of ITS 3.8.1 to be applicable to the Unit 1 AC Source required to be OPERABLE for Unit 2 operation. The added Surveillance helps to ensure the required Unit 1 qualified circuit remains OPERABLE. This change is designated as more restrictive because additional Surveillance Requirements will be applicable to the Unit 2 Technical Specifications.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.1.2.b specifies that a DG be OPERABLE with a fuel transfer pump. ITS LCO 3.8.2.b requires an OPERABLE DG capable of supplying one train of the onsite Class 1E power distribution subsystem(s). This changes the CTS by moving the details that an OPERABLE DG requires "a fuel transfer pump" 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 requirements for an OPERABLE DG and that the fuel oil transfer system operates automatically to transfer fuel oil from the storage tank to the day tank. 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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.1.2 Action specifies the compensatory action for an inoperable required AC Source. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.2 Required Action A.2.3 (for an inoperable required offsite circuit) or Required Action B.3 (for an inoperable required DG) require the immediate suspension of operations involving positive

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reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50ºF or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of this CTS 3.8.1.2 Action is to suspend any positive reactivity additions that could affect the SDM of the reactor core. 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 affected 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 repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water). Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS LCO 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50ºF or less in any one hour period in MODE 5. This limitation has been deleted, since the rate of SDM change is not germane provided SDM is not lost. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of CTS 4.8.1.1.1 and CTS 4.8.1.1.2 except for requirement

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CTS 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1 (it exempts performance of ITS SR 3.8.1.3), however additional SRs are excepted from being performed. ITS SR 3.8.2.1 states that the following SRs are also not required to be performed: SR 3.8.1.10 through SR 3.8.1.12, SR 3.8.1.15 through SR 3.8.1.17, and SR 3.8.1.18. This changes the CTS by not requiring the performance of additional AC Source Surveillances.

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. CTS 4.8.1.2 does not require CTS 4.8.1.1.2.a.5 to be performed (however, it must be met). Many of the currently required Surveillances specified in CTS 4.8.1.2 involve tests that would require the DG to be paralleled to offsite power. This condition (the only required DG and the only required offsite circuit connected) presents a significant risk of a single fault resulting in a station blackout. The NRC has previously recognized this in the exception stated in CTS 4.8.1.2 (4.8.1.1.2.a.5) and provided a Surveillance exception to the 1 hour DG load test to avoid this condition. In an effort to consistently address this concern and to avoid potential conflicting Technical Specifications, the Surveillances that would require the DG to be connected to the offsite source or would require disconnection of the required offsite circuit and deenergization of required buses are excepted from performance requirements. The exception does not take exception to the requirement for the DG to be capable of performing the particular function; just to the requirement to demonstrate it while that source of power is being relied on to support meeting the LCO. The exception is being presented as a Note to ITS SR 3.8.2.1. The excluded Surveillances are CTS 4.8.1.1.2.a.5 (ITS SR 3.8.1.3), the DG 1 hour load test, CTS 4.8.1.1.2.e.2 (ITS SR 3.8.1.10), the single largest load reject test, CTS 4.8.1.1.2.e.3 (ITS SR 3.8.1.11), the full load rejection test, CTS 4.8.1.1.2.e.4 (ITS SR 3.8.1.12), the simulated loss of offsite power test, CTS 4.8.1.1.2.e.7 (ITS SR 3.8.1.15), the 8 hour endurance run, CTS 4.8.1.1.2.e.7 (ITS SR 3.8.1.16), the hot re-start test, CTS 4.8.1.1.2.e.9 (ITS SR 3.8.1.17), the DG synchronization test, and CTS 4.8.1.1.2.e.11 (ITS SR 3.8.1.18), the DG automatic sequence time delay relay test. This change is acceptable since it is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 6 - Deletion Of Surveillance Requirements)* CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1 (see DOC L.2). However, additional ITS SRs are excepted from being required to be met. ITS SR 3.8.2.1 states, in part, that the following SRs are not required to be met: SR 3.8.1.9 and SR 3.8.1.20. This changes the CTS by not requiring certain Surveillances to be met. Further changes to CTS 3.8.1.2 are discussed in DOC L.6.

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The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. 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 3.8.1.9), the offsite source transfer verification test, and CTS 4.8.1.1.2.f.3 (ITS SR 3.8.1.20), the DG simultaneous start test. SR 3.8.1.9 is not required to be met since the auxiliary source cannot power the Class 1E electrical power distribution subsystems in these conditions and since only one offsite circuit is required to be OPERABLE. SR 3.8.1.20 is excepted because starting independence is not required with only one DG required to be OPERABLE. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 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 a loss of offsite power 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., CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM or boron concentration). Since 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. In this event it may not be necessary to suspend all CORE ALTERATIONS, irradiated fuel handling, and operations involving positive reactivity additions that could result in loss of required SDM or boron concentration as required by CTS 3.8.1.2 Action (and as modified by DOC L.1). Conservative actions can be assured if all required equipment without offsite power is declared inoperable and the associated ACTIONS of the individual equipment 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.

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L.5 *(Category 1 – Relaxation of LCO Requirements*) (Unit 2 only) CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE and CTS 3.8.1.2.b requires one DG to be OPERABLE. These two required AC Sources are Unit 2 sources. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC Sources) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE - OPERABILITY" includes both a normal and emergency electrical power source requirement. However, there are no specific requirements in Unit 2 CTS 3.8.1.2 requiring the Unit 1 AC Sources to be OPERABLE to support the FHAEV System. In addition, CTS 3.0.5, which provides compensatory actions when an AC Source is inoperable, is not applicable in MODES 5 and 6. Unit 2 ITS LCO 3.8.2.c requires one Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10. This changes the Unit 2 CTS by explicitly requiring only one Unit 1 AC Source (the offsite source) associated with the Unit 1 equipment required to be OPERABLE to support Unit 2 operation.

The purpose of Unit 2 ITS LCO 3.8.2.c is to ensure an AC Source is available to support required equipment. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The explicit requirements for AC Sources of the Unit 1 sources are not included in CTS 3.8.1.2 for Unit 2. However, based on the definition of OPERABILITY, both the normal and emergency sources are required to be OPERABLE to support the FHAEV System. Thus, deleting the explicit requirement that a DG is OPERABLE is less restrictive since currently one is required. In general, when the unit is shutdown, 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. This change is acceptable since 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 significant number of required testing and maintenance activities is also required. In MODES 5 and 6, the activities are generally planned and administratively controlled. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.6 CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1 (see DOC L.2). However, additional ITS SRs are excepted from being required to be met. ITS SR 3.8.2.1 states, in part, that the following SRs are not required to be met: SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only) and SR 3.8.1.19. This changes the CTS by not requiring certain Surveillances to be met. Further changes to CTS 3.8.1.2 are discussed in DOC L.3.

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DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. 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 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), and CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs 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 Surveillance Requirements have been deleted from the CTS.

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

CTS

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:

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown", ~~and~~ ; {Unit 2 only} (1)

b. One diesel generator (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10. ; and (1) {Unit 2 only}

INSERT 1 (2)

DOC M.3

APPLICABILITY: MODES 5 and 6,
During movement of ~~recently~~ irradiated fuel assemblies. {Unit 2 only} (3)

INSERT 1A (7)

ACTIONS

DOC M.3

- NOTE -
LCO 3.0.3 is not applicable.

Action

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ~~One~~ or more {Unit 2 only} required offsite circuit(s) {Unit 2 only} inoperable. {Unit 1 only}		- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A.	(4) (2)
	A.1	Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	OR		

2

INSERT 1
(Unit 2 only)

DOC A.4 c. One Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10.

7

INSERT 1A

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately ③
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
⟨Unit 2 only⟩	A.2.4 Initiate action to restore required offsite ~~power~~ circuit(s) to OPERABLE status.	Immediately ②
B. ~~One~~ required DG inoperable. Action	B.1 Suspend CORE ALTERATIONS.	Immediately ④ ②
	AND	
	B.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately ③
	AND	
	B.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.4	Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.2.1 (4.8.1.2)	- NOTES - (15) 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, (10) (17) (12) and SR 3.8.1.18, ~~and SR 3.8.1.19~~. (2) (3) (5) (6) ~~2. SR 3.8.1.12 and SR 3.8.1.19 are not required to be met when associated ECCS subsystems(s) are not required to be OPERABLE per LCO 3.5.3, "ECCS-Shutdown."~~ (5) For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources - Operating," except SR 3.8.1.8, ~~SR 3.8.1.17~~, SR 3.8.1.13, SR 3.8.1.19, and SR 3.8.1.20, are applicable. (9) (5)	In accordance with applicable SRs (6)

SR 3.8.1.14 (ESF actuation signal portion only) (5)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

1. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

2. An additional requirement has been added to ISTS LCO 3.8.2 for Unit 2 to ensure the appropriate AC Source is OPERABLE during the movement of irradiated fuel assemblies in the auxiliary building. The new requirement was added as LCO 3.8.2.c. This modification was necessary since the Fuel Handling Area Exhaust Ventilation (FHAEV) System is supplied by Unit 1 AC Sources. In addition, ITS 3.8.2 ACTION A for Unit 2 has been modified to reflect this change.

3. The brackets are removed and the proper plant specific information/value is provided.

4. Since only one circuit and one DG are required, the term "One" is redundant and has been deleted, consistent with other similar Conditions in the ISTS (e.g., ISTS 3.5.3).

5. These changes have been included consistent with proposed TSTF-433, Rev. 0. In addition, ISTS SR 3.8.1.13 (ITS SR 3.8.1.14) has been deleted from Note 1 to SR 3.8.2.1 and added to those Surveillances not required to be met. ISTS SR 3.8.1.13 (ITS SR 3.8.1.14) is the verification that the DG’s automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus or an actual or simulated ESF actuation signal. The ESF actuation signal portion of this Surveillance is not required to be met because the ESF actuation signal is not required to be OPERABLE. This change is consistent with the technical analysis for TSTF-433 modifications.

6. The SRs have been changed to be consistent with the changes made to the Surveillance Requirements in ITS 3.8.1.

7. The Applicability has been clarified since CNP has two units, and irradiated fuel movement can occur in three different locations.

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Improved Standard Technical Specifications (ISTS) Bases Markup and 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, INSERT 1 ensures that: ① ③

a. The unit can be maintained in the shutdown or refueling condition for extended periods; ②

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and ②

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident. ~~involving handling recently irradiated fuel. Due to radioactive decay, AC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)].~~ ① ③

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

During MODES 1, 2, 3, and 4, various deviations from the analysis assumptions and design requirements are allowed within the Required Actions. This allowance is in recognition that certain testing and

3

INSERT 1

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABLE SAFETY ANALYSES (continued)

maintenance activities must be conducted provided an acceptable level of risk is not exceeded. During MODES 5 and 6, performance of a significant number of required testing and maintenance activities is also required. In MODES 5 and 6, the activities are generally planned and administratively controlled. Relaxations from MODE 1, 2, 3, and 4 LCO requirements are acceptable during shutdown modes based on:

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

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

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

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

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

– shutdown

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

(4) Unit 2 only

LCO Unit 2 only

One offsite circuit capable of supplying the onsite Class 1E power distribution subsystem(s) of LCO 3.8.10, "Distribution Systems - Shutdown," ensures that all required loads are powered from offsite power. An OPERABLE DG, associated with the distribution system train required to be OPERABLE by LCO 3.8.10, ensures a diverse power source is available to provide electrical power support, assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit(s) and DG ensures the availability of sufficient AC sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~involving handling recently irradiated fuel~~).

most of the (4)

(3)

INSERT 2

(3) Unit 2 only

(3) Unit 2 only

(1)

(3)

The qualified offsite circuit(s) must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident,

(3)

3

INSERT 2
(Unit 2 only)

In addition, to ensure the remainder of the loads are powered from offsite power, one Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required to be OPERABLE by LCO 3.8.10. This will ensure that Unit 2 will have sufficient offsite power to support the Fuel Handling Area Exhaust Ventilation (FHAEV) System since this system is supplied by Unit 1 AC sources.

BASES

LCO (continued)

while connected to the ~~Engineered Safety Feature (ESF)~~ emergency (4) bus(es). ~~Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit.~~ (12)

~~[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.]~~ INSERT 3 (1)

(3) required (3)

The required DG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ~~ESF~~ emergency bus on detection of bus undervoltage. This sequence must be accomplished within [10] seconds. The DG must be capable of accepting required loads within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ~~ESF~~ emergency buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with the engine hot and DG in standby at ambient conditions. (4) (1) INSERT 4 (5)

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY. INSERT 5 (4)

~~[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)

~~It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply all required trains.~~ (11) INSERT 6 (3) <Unit 2 only>

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies provide assurance that: (1) INSERT 7 (3)

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core; (2)

b. Systems needed to mitigate a fuel handling accident ~~[involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)]~~ are available; (1) (2)

1

INSERT 3
(Unit 1 only)

The preferred qualified offsite circuit consists of RATs TR101CD and TR101AB, as applicable, the cabling and breakers to the required 4.16 kV buses 1A, 1B, 1C, and 1D, the required 4.16 kV buses 1A, 1B, 1C, and 1D, and the cabling and breakers to the required 4.16 kV emergency buses T11A, T11B, T11C, and T11D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to the required 4.16 kV emergency buses T11A, T11B, T11C, and T11D.

1

INSERT 3
(Unit 2 only)

The preferred qualified offsite circuit consists of RATs TR201CD and TR201AB, as applicable, the cabling and breakers to the required 4.16 kV buses 2A, 2B, 2C, and 2D, the required 4.16 kV buses 2A, 2B, 2C, and 2D, and the cabling and breakers to the required 4.16 kV emergency buses T21A, T21B, T21C, and T21D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to the required 4.16 kV emergency buses T21A, T21B, T21C, and T21D.

5

INSERT 4

Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the DG to reject a load equivalent to its associated single largest post-accident load.

4

INSERT 5

The necessary portions of the Essential Service Water System and Ultimate Heat Sink capable of providing cooling to the required DG are also required.

3

INSERT 6
(Unit 2 only)

Additionally, unit's electrical sources must include electrical sources from Unit 1 that is required to support the FHAEV System when handling fuel in the auxiliary building. Either the preferred or alternate Unit 1 source is required. The preferred qualified offsite circuit is supplied via reserve auxiliary transformer (RAT) TR101CD and TR101AB. A 34.5 kV line supplies RAT TR101CD and RAT TR101AB. RAT TR101CD supplies the Train A 4.16 kV bus T11D via bus 1D. The preferred offsite circuit extends to Train A 600 V bus 11D since an FHAEV fan is supplied from this bus. RAT TR101AB supplies the Train B 4.16 kV bus T11A via bus 1A. The preferred offsite circuit extends to Train B 600 V bus 11A since an FHAEV fan is supplied from this circuit. A 69 kV line supplies the alternate qualified offsite circuit. The 69 kV line supplies transformer TR12EP-1 which can be manually aligned to directly supply Train A 4.16 kV bus T11D and Train B 4.16 kV bus T11A. The alternate offsite source is also required to supply the associated 600 V AC bus.

3

INSERT 7

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABILITY (continued)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and (S) (2)

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

If

An offsite circuit would be considered inoperable if it were not available to one required ~~ESF~~ train. ~~Although~~ two trains are required by LCO 3.8.10, the one train with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and ~~recently~~ irradiated fuel movement. By the allowance of the option to declare required features inoperable, with no offsite power available, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS. (5) (1)

<Unit 2 only>

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4

(S)

(6) required

With the offsite circuit not available to all required trains, the option would still exist to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required DG inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of ~~recently~~ irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (~~Mode~~ 5) or boron concentration (~~Mode~~ 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. (3) (1) (6)

(5) INSERT 9

INSERT 8 (5)

5

INSERT 8

specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM),"

5

INSERT 9

specified in LCO 3.9.1, "Boron Concentration."

BASES

ACTIONS (continued)

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. 7

moderator temperature coefficient

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~~ emergency 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. 8 4

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~~ is not required to be met since only one offsite circuit is required to be OPERABLE. ~~SR 3.8.1.17 is not required to be met because the required OPERABLE DG(s) is not required to undergo periods of being synchronized to the offsite circuit.~~ SR 3.8.1.20 is excepted because starting independence is not required with the DG(s) that is not required to be ~~operable~~.

9 to be applicable 3 INSERT 10 5 3 INSERT 11 10 INSERT from page B 3.8.2-6 9

5

INSERT 10

the auxiliary source cannot power the Class 1E electrical power distribution subsystems in these conditions and since

3 10

INSERT 11

13 14 (ESF actuation signal portion only)

SR 3.8.1.~~12~~, SR 3.8.1.~~13~~, and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE.

BASES

SURVEILLANCE REQUIREMENTS (continued)

a the Note (10)

This SR is modified by ~~two~~ Notes. The reason for ~~Note 1~~ is to preclude requiring the OPERABLE DG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of SRs, and to preclude deenergizing a required 4160 V ~~ESF~~ emergency bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR. ~~Note 2 states that SRs 3.8.1.12 and 3.8.1.19 are not required to be met when its associated ECCS subsystem(s) are not required to be OPERABLE. These SRs demonstrate the DG response to an ECCS signal (either alone or in conjunction with a loss-of-power signal). This is consistent with the ECCS instrumentation requirements that do not require the ECCS signals when the ECCS System is not required to be OPERABLE per LCO 3.5.3, "ECCS-Shutdown."~~ (8) (4) (9) (10)

(9) move to page B 3.8.2-5 as indicated

REFERENCES None.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.2 BASES, AC SOURCES - SHUTDOWN

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

2. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

3. Changes are made to the Bases to reflect changes made to the Specification.

4. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

5. Changes are made to reflect the actual Specification.

6. Changes are made to be consistent with other places in the Bases and Specifications.

7. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

8. Spelling/grammatical error corrected.

9. Editorial change made for enhanced clarity.

10. These changes are made to reflect the modifications in proposed TSTF-433, Rev. 0.

11. This statement is discussing the cross-tying of distribution buses and is not applicable to this AC Sources Specification. Therefore it has been deleted. This allowance has been described in the Bases for ITS LCO 3.8.10, "Distribution Systems - Shutdown."

12. This statement has been deleted since the LCO requirements for the qualified offsite circuits are described in the next paragraph of the LCO Section.

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Specific No Significant Hazards Considerations (NSHCs)

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

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.6

CNP is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of No Significant Hazards Considerations for conversion to NUREG-1431.

CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1. However, additional ITS SRs are excepted from being required to be met. ITS SR 3.8.2.1 states, in part, that the following SRs are not required to be met: SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only) and SR 3.8.1.19. This changes the CTS by not requiring certain Surveillances to be met. Further changes to CTS 3.8.1.2 are discussed in DOC L.3.

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. 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 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), and CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal).

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

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

Response: No.

The proposed change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), and CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs 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 will not affect the probability of an accident, since neither these SRs nor an ESF actuation signal are considered as an initiator of an analyzed accident. The consequences of an analyzed accident would not be significantly increased because the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently (and this SR is being maintained). Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), and CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs 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 will not physically alter the plant (no new or different type of equipment will be installed). In addition, no changes will be made to the operation of the unit. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No.

The proposed change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), and CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), and SR 3.8.1.19 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal). The margin of safety is not affected by this change because the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently (and this SR is being maintained). Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

ATTACHMENT 3

ITS 3.8.3, Diesel Fuel Oil

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

ITS 3.8.3

A.1

ITS

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 — A.2

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

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and

See ITS 3.8.1

b. Two separate and independent diesel generators, each with:

1. A separate day fuel tank containing a minimum of 70 gallons of fuel,

LA.1

SR 3.8.3.1

2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and

See ITS 3.8.1

3. A separate fuel transfer pump.

When associated DG is required to be OPERABLE — A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

ACTION:

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.1

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

~~*Tanks are separate between diesels but shared between Units 1 and 2.~~ — LA.1

ITS 3.8.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.2

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

L.3

a. ~~In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by~~:

See ITS 3.8.1

1. Verifying the fuel level in the day tank.

SR 3.8.3.1

2. Verifying the fuel level in the fuel storage tank, every 31 days

L.2

3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,

4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz,*

See ITS 3.8.1

5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and

6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.

b. By removing accumulated water~~***~~

A.3

1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and

See ITS 3.8.1

SR 3.8.3.3

2) From the storage tanks at least once per 31 days.

Add proposed SR 3.8.3.2

A.4

c. By sampling new fuel oil~~***~~ in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and

M.1

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

See ITS 5.5

* The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

** Momentary load transients do not invalidate this test.

See ITS 3.8.1

~~*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.~~

A.3

Add proposed ACTION C

Add proposed ACTION D for accumulated water

M.1

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ITS 3.8.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60° when compared to the supplier's certificate.

See ITS 5.5

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.

M.1

e. At least once per 18 months, during shutdown, by:

1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

See ITS 3.8.1

~~*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.~~

Add proposed ACTION B

M.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.

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.

10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:

a) Returning the diesel generator to standby operation, and

b) Verifying the emergency loads are serviced by offsite power.

11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

See ITS 3.8.1

f. ~~At least once per 10 years by:~~

~~1. Employing one of the following cleaning methods to clean the fuel oil storage tanks:~~

~~a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or~~

LA.2

* Momentary transients outside the load and power factor range do not invalidate this test.

** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours or until operating temperature has stabilized.

See ITS 3.8.1

ITS 3.8.3

A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

LA.2

3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

See ITS 3.8.1

*Shall be performed after any modifications which could affect diesel generator interdependence.

See ITS 3.8.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

L.2

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the *OL issuance date shall be included in the computation of the "last 20 valid tests.*"

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS 3.8.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SHUTDOWN

Add proposed LCO 3.8.3 — A.2

LIMITING CONDITION FOR OPERATION

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

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

1. A day fuel tank containing a minimum of 70 gallons of fuel,

See ITS 3.8.2

SR 3.8.3.1 2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and

3. A fuel transfer pump.

See ITS 3.8.2

APPLICABILITY: ~~MODES 5 and 6.~~ When associated DG is required to be OPERABLE — A.2

ACTION: Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

See ITS 3.8.2

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1, SR 3.8.3.2, SR 3.8.3.3 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

See CTS markup pages 2 of 14 through 5 of 14

Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.

See ITS 3.8.2

ITS 3.8.3

ITS

A.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 — A.2

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

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two separate and independent diesel generators, each with:

1. A separate day fuel tank containing a minimum of 70 gallons of fuel,

See ITS 3.8.1

LA.1

2. A ~~separate~~ fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and

See ITS 3.8.1

3. A separate fuel transfer pump.

When associated DG is required to be OPERABLE — A.2

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

Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

ACTION:

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

See ITS 3.8.1

~~*Tanks are separate between diesels but shared between Units 1 and 2.~~

LA.1

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ITS 3.8.3

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.2

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

L.3

a. ~~In accordance with the frequency specified in Table 4.8-1~~ ~~on a STAGGERED TEST BASIS by~~:

See ITS 3.8.1

1. Verifying the fuel level in the day tank,

SR 3.8.3.1

2. Verifying the fuel level in the fuel storage tank, every 31 days

L.2

3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,

4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz,*

See ITS 3.8.1

5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and

6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.

b. By removing accumulated water***:

A.3

1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and

See ITS 3.8.1

SR 3.8.3.3

2) From the storage tanks at least once per 31 days.

Add proposed SR 3.8.3.2

A.4

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and

M.1

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

See ITS 5.5

* The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

** Momentary load transients do not invalidate this test.

See ITS 3.8.1

*** ~~The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.~~

A.3

Add proposed ACTION C

Add proposed ACTION D for accumulated water

M.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

See ITS 5.5

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A~~*~~.

M.1

e. At least once per 18 months, during shutdown, by:

1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

See ITS 3.8.1

Add proposed ACTION B

M.1

~~* The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.~~

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ITS 3.8.3

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.

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.

10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:

   a) Returning the diesel generator to standby operation, and

   b) Verifying the emergency loads are serviced by offsite power.

11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

See ITS 3.8.1

f. ~~At least once per 10 years by:~~

   1) ~~Employing one of the following cleaning methods to clean the fuel oil storage tanks:~~

      a) ~~Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or~~

LA.2

* Momentary transients outside the load and power factor range do not invalidate this test.

** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours or until operating temperature has stabilized.

See ITS 3.8.1

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ITS 3.8.3

A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

LA.2

3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

See ITS 3.8.1

*Shall be performed after any modifications which could affect diesel generator interdependence.

See ITS 3.8.1

ITS 3.8.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

L.2

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 — A.2

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

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

1. A day fuel tank containing a minimum of 70 gallons of fuel,

See ITS 3.8.2

SR 3.8.3.1 — 2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and

3. A fuel transfer pump.

See ITS 3.8.2

APPLICABILITY: ~~MODES 5 and 6.~~ When associated DG is required to be OPERABLE — A.2

ACTION: Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

See ITS 3.8.2

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1, SR 3.8.3.2, SR 3.8.3.3 — 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

See CTS markup pages 9 of 14 through 14 of 14

Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.

See ITS 3.8.2

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DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 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 LCO and Applicability for the ITS diesel fuel oil Specification. ITS LCO 3.8.3, "Diesel Fuel Oil," states that the stored diesel fuel oil shall be within limits for each required DG. The Applicability for this requirement is when associated DG is required to be OPERABLE. This changes the CTS by combining the requirements for diesel fuel oil into one Specification.

This change is acceptable because the current requirements are translated into ITS form with no technical changes. Diesel fuel oil is a support system for each DG. The CTS and ITS maintain this relationship between the DGs and the Diesel Fuel Oil System without any changes in the technical requirements. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 4.8.1.1.2.b.2 requires the removal of accumulated water from the diesel fuel oil storage tanks at least once per 31 days. CTS 4.8.1.1.2.b footnote *** states that the actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. For CTS 4.8.1.1.2.b.2, the Bases state that the removal of accumulated water as required by CTS 4.8.1.1.2.b.2 is performed by drawing the contents off the bottom of the tank until acceptable results are obtained for either a tape test or a water and sediment test. An acceptable result for the water and sediment content is a measured value less than 0.05 percent volume. ITS SR 3.8.3.3 specifies to check and remove accumulated water from each fuel oil storage tank. ITS 3.8.3 ACTION D states that with one or more DGs with diesel fuel oil not within limits for reasons other than Condition A, B, or C, to immediately declare the associated DG inoperable. ITS 3.8.3 Conditions A, B, and C are not related to accumulated water, therefore, if for some reason accumulated water could not be removed, then ITS 3.8.3 ACTION D would be entered and the associated DG could be declared inoperable. This changes the CTS by providing an ACTION for diesel fuel oil not within limits (in this case, fuel oil accumulated water present).

The purpose of CTS 4.8.1.1.2.b.2 is to check and remove any accumulated water to help ensure microbiological fouling does not cause fuel oil degradation. The CTS 4.8.1.1.2.b Footnote *** and associated Bases do not really provide any specific action for accumulated water. ITS 3.8.3 ACTION D requires entry for diesel fuel oil not within limit for reasons other than Condition A, B, or C. The ITS SR 3.8.3.3 Bases state that the presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance. The ITS 3.8.3 guidance is consistent with the current intent of the CTS. If accumulated water could not be removed, the DG would be declared inoperable. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d specify the requirements for the properties of new and stored fuel oil, respectively. The technical content of CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d is being moved to ITS 5.5.11. A Surveillance Requirement is added (ITS SR 3.8.3.2) to clarify that the tests of the Diesel Fuel Oil Testing Program must also be completed and passed for determining OPERABILITY of the DG fuel oil subsystem.

The purpose of CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d are to ensure the new and stored diesel fuel oil properties are consistent with the specified standards. This change simply moves the actual properties to ITS 5.5.11. Any technical changes will be addressed in the Discussion of Changes for ITS 5.5. This change is acceptable since this is a presentation preference that maintains current requirements except for those discussed in the Discussion of Changes for ITS 5.5. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d specify the requirements for the properties of new and stored fuel oil, respectively. CTS 4.8.1.1.2.c footnote *** and CTS 4.8.1.1.2.d footnote * state that the actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. The requirements in CTS 4.8.1.1.2.c.1), 2), and 3) apply to properties associated with the new fuel oil. The properties must be met before adding the new fuel to the storage tank. There are no actions specified in the Bases for these properties since the new fuel will not be added to the storage tank unless these properties are within limits. CTS 4.8.1.1.2.c.4) applies to the new fuel oil properties which must be evaluated within 31 days after the fuel is added to the storage tank. The CTS 3/4.8 Bases provides the following guidance and actions for CTS 4.8.1.1.2.c.4): a) The sample specified in CTS 4.8.1.1.2.c.4) is sent offsite for testing; b) A serious attempt will be made to meet the 31 day limit on the offsite tests; however, if for reason this limit is not met (e.g., if the sample is lost or broken or if the results are not received in 31 days), the DGs should not be considered inoperable; c) If the sample is lost, broken, or fails the offsite tests and the new oil has already been put into the storage tank, the offsite tests will be performed on a sample taken from the storage tank; and d) If the results on the subsequent storage tank sample are not within specified limits, the DGs should be considered OPERABLE and the out-of-spec properties should be returned to within specification as soon as possible. CTS 4.8.1.1.2.d applies to particulate contamination of the fuel in the storage tank. The CTS 3/4.8 Bases provides the following guidance and actions for CTS 4.8.1.1.2.d. If the monthly storage tank sample taken fails the particulate contamination test, the DG should be considered inoperable and the contamination level should be restored to below 10 mg/liter as soon as possible. ITS 3.8.3 ACTION B specifies the compensatory actions for one or more DG with stored fuel oil total particulates

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DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

not within limits. ITS 3.8.3 Required Action B.1 requires the restoration of the fuel oil total particulates to within limits in 7 days. ITS 3.8.3 ACTION C specifies the compensatory actions for one or more DGs with new fuel oil properties not within limits. ITS 3.8.3 Required Action C.1 requires the restoration of the stored fuel oil properties to within limits within 30 days. This changes the CTS by providing explicit ACTIONS for fuel oil total particulates and new fuel oil properties limits not met.

The purpose of CTS 4.8.1.1.2.c and associated Bases is to provide the appropriate property limits for new and stored fuel and to provide the appropriate compensatory actions for when the stored fuel oil properties are not within limits. The purpose of CTS 4.8.1.1.2.d and associated Bases is to provide the appropriate limit for total particulate contamination and to provide the appropriate compensatory actions for when the total particulate contamination is not within limit. This change provides explicit Required Actions and Completion Times for restoring both total particulates and fuel oil properties to within limits. ITS 3.8.3 ACTION B is entered as a result of a failure to meet the acceptance criterion of total particulate concentration specified in ITS 5.5.11.c. 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, particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, re-sampling and re-analysis of the DG fuel oil. ITS 3.8.3 ACTION C is entered as a result of failure to meet the requirements specified in ITS 5.5.11.b. With the new fuel oil properties defined in the Bases for ITS SR 3.8.3.2 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 did not cause the stored fuel oil to be outside of the required limits, or to restore the stored fuel oil properties to within limits. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the stored fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function. This change is designated as more restrictive because explicit Required Actions and Completion Times are included in the Technical Specifications for stored fuel oil total particulates and new diesel fuel oil properties not within limits.

RELOCATED SPECIFICATIONS

None

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DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description including Design Limits)* CTS LCO 3.8.1.1.b.2 requires a "separate" fuel storage system for each required DG. CTS 3.8.1.1.b.2 footnote * states that the tanks are "separate between diesels but shared between Units 1 and 2." ITS 3.8.3 does not state that the fuel oil storage tanks are separate between diesels, or that they are shared between Units 1 and 2. This changes the CTS by moving these details 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 requirement that the required fuel storage tank contains the specified volume of diesel fuel oil. 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.

LA.2 *(Type 6 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS 4.8.1.1.2.f.1 requires a cleaning of the fuel oil storage tanks by one of two methods every 10 years. CTS 4.8.1.1.2.f.2 requires the performance of a precision leak detection test to verify that the leakage rate from the fuel oil system is $\leq$ .05 gallons/hour. 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.f.1 is to ensure the contaminant level is below 10 mg/l. The purpose of CTS 4.8.1.1.2.f.2 is to satisfy the requirements of the National Fire Protection Association (NFPA) 329 and 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 DG during a design basis accident. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the UFSAR and any 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.

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DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.1.1 and 3.8.1.2 Actions do not provide explicit compensatory actions if the volume of fuel oil in the storage tank is less than the specified limit. Thus, if the minimum indicated volume is not met, the associated DG must be declared inoperable and CTS 3.8.1.1 Action b or the CTS 3.8.1.2 Action must be entered, as applicable. ITS 3.8.3 ACTION A allows the unit to not declare the associated DG inoperable as long as the volume of stored fuel oil is greater than a six day limit (i.e., > 39,500 gallons). In this situation, ITS 3.8.3 Required Action A.1 allows 48 hours to restore the fuel oil volume to within limits. If this Required Action and associated Completion Time is not met or if the DG fuel oil storage tank volume is ≤ to 39,500 gallons, the associated DG must be declared inoperable immediately (ITS 3.8.3 ACTION D). In addition, a Note has been added to the ITS 3.8.3 ACTIONS that allows separate Condition entry for each DG. This changes the CTS by allowing each DG not to be declared inoperable with the fuel oil storage tank volume not within the specified Surveillance limit as long as each DG has enough fuel oil for 6 days (> 39,500 gallons) of operation at full load.

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. 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 DBA occurring during the repair period. The addition of ITS 3.8.3 ACTION A will allow the associated DG not to be declared inoperable with the stored diesel fuel oil volume not within the specified Surveillance limit as long as each DG has enough fuel oil for 6 days operation at full load. In this Condition, the 7 day fuel oil supply for a DG 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 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 diesel fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the affected DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a specifies that each DG shall be demonstrated OPERABLE in accordance with the frequency specified in Table 4.8-1 on a

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DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

STAGGERED TEST BASIS. CTS Table 4.8-1 specifies the test frequency based on the number of failures that have occurred in testing each DG during the previous 20 tests. If the number of failures do not exceed the specified limit, testing is to be performed every 31 days. If failure occurs above the specified limit, then testing is conducted every 7 days. CTS 4.8.1.1.2.a.2 requires the verification of the fuel level in the fuel storage tank. ITS SR 3.8.3.1 requires the verification that each fuel oil storage tank contains the specified volume limit every 31 days. This changes the CTS by deleting the requirement to verify the fuel oil storage tank level at an increasing frequency based on the number of DG failures. The deletion of the STAGGERED TEST BASIS requirement is discussed in DOC L.3.

The purpose of CTS 4.8.1.1.2.a.2 is to ensure the DG has the appropriate amount of diesel fuel oil for continuous operation for 7 days. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The CTS test frequency has been changed by deleting the requirement to perform the Surveillance in accordance with the DG Test Schedule Table and includes a Frequency of 31 days. This change is acceptable because the DG failures that result in a more frequent DG test frequency have no impact on the fuel oil storage tank's ability to perform their intended functions because the fuel oil storage tank is normally maintained well above the minimum. The 31 day Frequency is adequate to ensure that a sufficient supply of diesel fuel oil is available, since low level alarms are provided and unit operators would be aware of any large uses of diesel fuel oil during this period. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 (*Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a states that each DG shall be demonstrate OPERABLE in accordance with the frequency specified in Table 4.8-1 "on a STAGGERED TEST BASIS." CTS 4.8.1.1.2.a.2 requires the verification of the fuel level in the fuel storage tank. ITS SR 3.8.3.1 requires the verification that each fuel oil storage tank contains the specified volume limit every 31 days. The Surveillance Frequency for ITS SR 3.8.3.1 is every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS. The deletion to monitor the fuel oil storage tank volume more frequently based on the number of DG failures is discussed in DOC L.2.

The purpose of CTS 4.8.1.1.2.a is to demonstrate the OPERABILITY of the DG(s) and the associated support equipment (fuel oil day tank and fuel oil transfer system). The purpose of CTS 4.8.1.1.2.a.2 is to ensure the DG has the appropriate amount of diesel fuel oil for continuous operation for 7 days. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change deletes the requirement to perform CTS 4.8.1.1.2.a.2 (SR 3.8.3.1) on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that have demonstrated that staggered testing has negligible impact on component reliability. These analytical and subjective

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) is not as significant as initially thought, 4) has no impact on failure frequency, 5) introduces additional stress on components such as DGs potentially causing increased component failures rates and component wearout, 6) results in reduced redundancy testing, and 7) increases likelihood of human error by increasing testing intervals. Therefore, the DG System staggered testing requirements have been deleted. This change is designated as less restrictive because the Surveillance is not required to be performed on a STAGGERED TEST BASIS in the ITS.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, ~~Lube Oil, and Starting Air~~ 1

3.8.1.1
3.8.1.2

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

DOC. A2

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

DOC L.1

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L.1 A. One or more DGs with fuel ~~level~~ Volume < ~~[33,000]~~ 46000 gal and > ~~[28,285]~~ 39,500 gal in storage tank.	A.1 Restore fuel oil ~~level~~ Volume to within limits.	48 hours 2
~~B. One or more DGs with lube oil inventory < [500] gal and > [425] gal.~~	~~B.1 Restore lube oil inventory to within limits.~~	~~48 hours~~ 1
4.8.1.1.2.d footnote* ~~C~~ B. One or more DGs with stored fuel oil total particulates not within limit.	~~C~~ B.1 Restore fuel oil total particulates to within limits.	7 days 1
4.8.1.1.2.c footnote *** ~~D~~ C. One or more DGs with new fuel oil properties not within limits.	~~D~~ C.1 Restore stored fuel oil properties to within limits.	30 days 1
~~E. One or more DGs with starting air receiver pressure < [225] psig and ≥ [125] psig.~~	~~E.1 Restore starting air receiver pressure to ≥ [225] psig.~~	~~48 hours~~ 1

Diesel Fuel Oil, Lube Oil, and Starting Air (1)
3.8.3

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
(D) E. Required Action and associated Completion Time not met. OR One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or D. (C)	E.1 (D) Declare associated DG inoperable.	Immediately (1)

4.8.1.1.2.c footnote ***, DOC L.1

(1) (1)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ [33,000] gal of fuel. 46,000	31 days (2)
SR 3.8.3.2	Verify lubricating oil inventory is ≥ [500] gal.	31 days (1)
SR 3.8.3.3 (2)	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 (1)
SR 3.8.3.4	Verify each DG air start receiver pressure is ≥ [225] psig.	31 days (1)
SR 3.8.3.5 (3)	Check for and remove accumulated water from each fuel oil storage tank.	[31] days (1) (2)

3.8.1.1.b.2, 3.8.1.2.b.2, 4.8.1.1.2.a.2

DOC A.4

4.8.1.1.2.b.2

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.3, DIESEL FUEL OIL

1. The ISTS 3.8.3 requirements for lube oil and starting air subsystems have not been included in ITS 3.8.3. The starting air subsystem requirements have been incorporated into ITS 3.8.1. Each DG has two air start receivers, and the pressure limit included in the ITS is the pressure needed for one DG start sequence. The ITS considers the DG to be OPERABLE when one air start receiver has the capacity for one DG start sequence. Therefore, CNP does not consider it appropriate to adopt the starting air subsystem allowances in ISTS 3.8.3. DG lube oil storage requirements are administratively controlled to ensure a sufficient supply of lube oil is available onsite to support at least 7 days of DG operation, similar to the ISTS requirements. Therefore, the ACTIONS and Surveillance Requirements for lube oil are not being retained in ITS 3.8.3. The ITS 3.8.3 title and requirements have been revised, and subsequent requirements are renumbered, as required, to reflect his change.

2. The brackets are removed and the proper plant specific information/value is provided.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air 1

BASES

BACKGROUND

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

2 8.4 4 INSERT 1 3 one

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground. unit 3

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

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

~~Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s).~~

3

INSERT 1

However, while each storage tank is separate between the DGs of a unit, each storage tank is shared with a DG on the other unit.

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BASES

APPLICABLE SAFETY ANALYSES

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

U 3 4 2 14 14

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).

s 1

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 DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power. DG day tank fuel requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources - Operating," and LCO 3.8.2, "AC Sources - Shutdown."

1 transient 3

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

1

APPLICABILITY

anticipated operational transient

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

3 1 s 15

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each DG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable DG subsystem. Complying with the Required Actions for one inoperable DG subsystem may allow for continued

BASES

ACTIONS (continued)

operation, and subsequent inoperable DG subsystem(s) are governed by separate Condition entry and application of associated Required Actions.

A.1

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

~~B.1~~

~~With lube oil inventory < 500 gal, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.~~ (1)

(B) ~~C~~.1 (1)

(2) This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.~~3~~. 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 (1) (6)

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 inoperable. The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the DG fuel oil.

(C) D.1 (1)

With the new fuel oil properties defined in the Bases for SR 3.8.3.4 (2) not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function. (1)

~~E.1~~

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

(D) F.1

With a Required Action and associated Completion Time not met, or one or more DG's fuel oil, ~~lube oil, or starting air~~ subsystem not within limits (1) for reasons other than addressed by Conditions A ~~through E~~ , B, or C, the associated DG may be incapable of performing its intended function and 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 DG's operation for 7 days at full load. The 7 day period is sufficient time to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

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

~~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 DG. The [500] gal requirement is based on the DG manufacturer consumption values for the run time of the DG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the DG, when the DG lube oil sump does not hold adequate inventory for 7 days of full load operation without the level reaching the manufacturer recommended minimum level.~~

~~A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run time are closely monitored by the unit staff.~~ 1

SR 3.8.3.~~3~~ 2 1

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: 6

a. Sample the new fuel oil in accordance with ASTM D4057-[~~ ~~] 81 (Ref. ~~6~~ 6 5) 2 5

5

b. Verify ~~in accordance with the tests specified in ASTM D975-[ ] (Ref. 6)~~ that the sample has INSERT 1A an absolute specific gravity at 60/60°F 4 3

3 4 **INSERT 1A**

: (1) when tested in accordance with ASTM D1298-80 (Ref. 5)

INSERT 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

82 88 30 40 3 4

of ≥ 0.83 and ≤ 0.89 or an API gravity at 60°F of ≥ 27° and ≤ 39°, a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F, and

INSERT 3 (2) 31 INSERT 4 5

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-[ ] (Ref. 6).

5 82 2 3

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.

6 INSERT 5 6 6

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

81 82 5 2 3 2 3

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.

83 5 2 3

Particulate concentrations should be determined in accordance with ASTM D2276-[ ] Method A (Ref. 6). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. ~~[For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be considered and tested separately.]~~ 2

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

3

INSERT 2

, an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate, or a specific gravity of within 0.0016 at 60/60° when compared to the supplier's certificate; (2)

3

INSERT 3

or Saybolt viscosity at 100°F of $\geq$ 32.6 and $\leq$ 40.1, if gravity was not determined by comparison with supplier's certification, when tested in accordance with ASTM 975-81 (Ref. 5)

3

INSERT 4

when tested in accordance with ASTM D975-81 (Ref. 5);

6

INSERT 5

within 31 days following addition of the new fuel oil to the fuel oil storage tank(s)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~SR 3.8.3.4~~

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

~~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.~~

(3) SR 3.8.3.~~6~~

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

REFERENCES

1. U FSAR, Section ~~[9.5.4.2]~~ 8.4. (2) (3)
2. Regulatory Guide 1.137, October 1979.
3. ANSI N195-1976, Appendix B.
4. ~~FSAR, Chapter [6].~~ (3)
(4) ~~5~~. U FSAR, Chapter ~~[15]~~ 14. (2) (3)

D1298-80

BASES

REFERENCES (continued)

81 81 82

5 ~~6~~. ASTM Standards: D4057-[ ], D975-[ ], D4176-[ ], ~~D1552-[ ]~~, 2 3
82 D2622-[ ], and D2276-[ ], Method A. 83

6 ~~7~~. ASTM Standards, D975-[ ], Table 1. 2 3

81

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.3 BASES, DIESEL FUEL OIL

1. Changes are made to the Bases to reflect changes made to the Specifications.

2. The brackets are removed and the proper plant specific information/value is provided.

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. Editorial change made for enhanced clarity.

5. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

6. Changes are made to the Bases to reflect the actual Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.3, DIESEL FUEL OIL

There are no specific NSHC discussions for this Specification.

ATTACHMENT 4

ITS 3.8.4, DC Sources - Operating

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

ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LA.1

LIMITING CONDITION FOR OPERATION

electrical power subsystems

See ITS 3.8.9

LCO 3.8.4.a 3.8.2.3 The following D.C. ~~bus trains~~ shall be energized and OPERABLE with tie breakers between bus trains open:

See ITS 3.8.9

B

TRAIN ~~AB~~ consisting of 250-volt D.C. bus AB, 250-~~volt D.C. battery bank No. 1AB~~, and a ~~full capacity charger~~, and

LA.1

See ITS 3.8.9

A

TRAIN ~~CD~~ consisting of 250-volt D.C. bus CD, 250-~~volt D.C. battery bank No. 1CD~~, and a ~~full capacity charger~~.

LA.1

Add proposed LCO 3.8.4.c

APPLICABILITY: MODES 1, 2, 3 and 4.

A.2

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus 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.

See ITS 3.8.9

L.1

ACTIONS A and B

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.

ACTION C

Add proposed ACTION E

A.2

Add proposed SR Notes 1 and 2

SURVEILLANCE REQUIREMENTS

M.1

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.4.1 a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1 4. The overall battery voltage is greater than or equal to ~~250 volts~~. to the minimum established float voltage

L.5

Add proposed SR 3.8.4.4

M.1

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ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

SR 3.8.4.2 c. At least once per ~~18~~ 24 months by: L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,~~

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,~~

L.3

SR 3.8.4.2 3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 d. At least once per ~~18~~ 24 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

L.2 A.3 L.4 LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

Note 1 to SR 3.8.4.3

See ITS 3.8.6

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. 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.

See ITS 3.8.6

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

electrical power subsystems

LA.1

See ITS 3.8.9

LCO 3.8.4.b 3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

LA.1

APPLICABILITY: MODES 1, 2 and 3.

ACTION

ACTION D With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

A.4

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

SR 3.8.4.1 a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1 4. The overall battery voltage is greater than or equal to 250 volts.

to the minimum established float voltage

L.5

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.4.2 c. At least once per ~~18~~ 24 months by: L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.~~ L.3

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.~~

SR 3.8.4.2 3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 d. At least once per ~~18~~ 24 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle ~~with the battery charger disconnected.~~ L.2 A.3 L.4 LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. See ITS 3.8.6

Note 1 to SR 3.8.4.3 *When this test is performed in place of a battery service test, a modified performance test shall be conducted.*

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. 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. See ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LA.1

electrical power subsystems

See ITS 3.8.9

LCO 3.8.4.a 3.8.2.3 The following D.C. ~~bus trains~~ shall be energized and OPERABLE with tie breakers between bus trains open:

B

TRAIN ~~AB~~ consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

See ITS 3.8.9

LA.1

A

TRAIN ~~CD~~ consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

See ITS 3.8.9

LA.1

Add proposed LCO 3.8.4.c

A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus 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.

See ITS 3.8.9

L.1

ACTIONS A and B

ACTION C

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.

Add proposed ACTION E

A.2

SURVEILLANCE REQUIREMENTS

Add proposed SR Notes 1 and 2

M.1

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.4.1 a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1 4. The overall battery voltage is greater than or equal to ~~250 volts~~ to the minimum established float voltage

L.5

Add proposed SR 3.8.4.4

M.1

ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

SR 3.8.4.2 — c. At least once per ~~18~~ 24 months by: L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,~~

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,~~

L.3

SR 3.8.4.2 — 3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 — d. At least once per ~~18~~ 24 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

L.2 A.3 L.4 LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

See ITS 3.8.6

Note 1 to SR 3.8.4.3

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. 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.

See ITS 3.8.6

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ITS

A.1

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ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LA.1

LIMITING CONDITION FOR OPERATION

electrical power subsystems

See ITS 3.8.9

LCO 3.8.4.b

3.8.2.5 The following D.C. ~~bus train~~ shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

LA.1

APPLICABILITY: MODES 1, 2 and 3.

ACTION

ACTION D

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

A.4

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

SR 3.8.4.1

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1

4. The overall battery voltage is greater than or equal to 250 volts.

to the minimum established float voltage

L.5

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.4.2 c. At least once per ~~18~~ 24 months by: L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.~~

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.~~ L.3

SR 3.8.4.2 3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 d. At least once per ~~18~~ 24 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle ~~with the battery charger disconnected~~. L.2 A.3 L.4 LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. See ITS 3.8.6

Note 1 to SR 3.8.4.3 When this test is performed in place of a battery service test, a modified performance test shall be conducted.

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. 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. See ITS 3.8.6

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A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.8.2.3 only provides requirements for the unit DC Sources; it does not provide any requirements for the opposite unit DC Sources. CTS LCO 3.7.4.1 requires two independent essential service water loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABILITY requires all attendant equipment (including both the normal and emergency electrical power sources) to be capable of performing its required function. Thus, the opposite unit DC Sources may be required to be OPERABLE. In addition, this would require declaring the affected ESW train inoperable when an associated opposite unit DC Source is inoperable. ITS LCO 3.8.4.c requires opposite unit Train A and Train B 250 VDC electrical power subsystems capable of supplying the opposite unit Essential Service Water (ESW) components required by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. Also, ITS 3.8.4 ACTION E has been added and covers the situation when a required opposite unit Train A or Train B or both electrical power subsystems are inoperable. ITS 3.8.4 ACTION E requires the immediate declaration that the associated ESW train(s) are inoperable. This changes the CTS by providing an explicit LCO and ACTION for the opposite unit Train A and B 250 VDC Sources.

The purpose of ITS LCO 3.8.4.c is to ensure the appropriate DC Sources are available to support the ESW System when the ESW System headers between the units are not isolated. This change is acceptable because safety related equipment is shared between both units when an ESW header between the two units is open. The added LCO requirement is consistent with the CTS since the definition of OPERABLE - OPERABILITY requires all attendant equipment to be capable of performing its required function, and the added ACTION is also consistent with the CTS. This change is designated as administrative because the CTS requirements remain unchanged.

A.3 CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.4.3 requires the verification that the 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. Note 2 to ITS SR 3.8.4.3 specifies that this Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. In addition, Note 2 states that

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credit may be taken for unplanned events that satisfy this SR. This changes the CTS by adding the allowance that credit may be taken for unplanned events that satisfy the associated SR. Additional changes to CTS 4.8.2.3.2.d and CTS 4.8.2.5.2.d are discussed in DOC L.4.

The ITS Note clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.8.2.5 Action states that with the Train N 250 VDC battery and/or its charger inoperable, to declare the turbine driven auxiliary feedwater pump inoperable "and follow the Action statement of Specification 3.7.1.2." ITS 3.8.4 ACTION D covers the situation when the Train N 250 VDC electrical power subsystem is inoperable. ITS 3.8.4 Required Action D.1 is to immediately declare the turbine driven auxiliary feedwater train inoperable. This changes the CTS by deleting the detail to follow the Action statement of Specification 3.7.1.2.

The purpose of the CTS 3.8.2.5 Action to follow the Action Statement of Specification 3.7.1.2 is to alert the user of the appropriate Specification to enter when the turbine driven auxiliary feedwater train is declared inoperable. It is an ITS convention to not include these types of cross-references. This change is designated as administrative as it incorporates an ITS convention with no technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.2.3.2 specifies the DC Source Surveillance requirements associated with the given unit. It does not explicitly specify the Surveillance Requirements for the DC Sources associated with the opposite unit. CTS LCO 3.7.4.1 requires two independent essential service water loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABLE - OPERABILITY requires all attendant equipment (including both the normal and emergency electrical power sources) to be capable of performing its required function. However, there are no specific requirements in the CTS requiring testing of the opposite unit DC Sources. ITS LCO 3.8.4.c requires opposite unit Train A and Train B 250 VDC electrical power subsystem(s) capable of supplying the opposite unit ESW components required by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. This change is discussed in DOC A.2. An explicit Surveillance Requirement has been added (ITS SR 3.8.4.4) that requires certain Surveillance Requirements to be met for the opposite unit 250 VDC Sources. This Surveillance specifies that the opposite unit Train A and Train B 250 VDC electrical power subsystem SRs are applicable. Two Notes have been added to the Surveillance Table to clarify which Surveillances apply to the unit DC Sources and which are applicable to the opposite unit DC Sources. This changes the CTS by adding explicit Surveillance Requirements for these opposite unit 250 VDC Sources.

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.4.4) has been added which requires the opposite unit DC Sources SRs to be applicable. The added Surveillance helps to ensure the required opposite unit 250 VDC electrical power subsystems remain OPERABLE. This change is designated as more restrictive because an additional Surveillance Requirement will be applicable to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.2.3 states that DC bus trains AB and CD shall be energized and OPERABLE with tie breakers between bus trains open. The details of what constitutes Train AB and Train CD are also listed. Train AB consists of 250 VDC bus AB, 250 VDC battery bank No. 1AB (Unit 1) and 2AB (Unit 2), and a full capacity charger. Train CD consists of 250 VDC bus CD, 250 VDC battery bank No. 1CD (Unit 1) and 2CD (Unit 2), and a full capacity charger. CTS 3.8.2.5 states that DC bus Train N shall be energized and OPERABLE. The details of what constitutes the N train are also listed. Train N consists of the 250 VDC bus N, 250 VDC battery bank N, and a full capacity charger. ITS LCO 3.8.4 requires the DC electrical power subsystems to be OPERABLE, which include the Train A and Train B 250 VDC electrical power subsystems (LCO 3.8.4.a), and the Train N 250 VDC electrical power subsystem (LCO 3.8.4.b). This changes the CTS by moving the details of the components of the DC Sources (battery and charger) from the CTS to the Bases. The 250 VDC buses are part of the Distribution System Specification (ITS 3.8.9) and all aspects of the buses are addressed in ITS 3.8.9.

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 statement for the Train A and Train B 250 VDC electrical power subsystems and the Train N 250 VDC electrical power subsystem. 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.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery. Each of these Surveillance Requirements specifies that the battery charger must be disconnected throughout the test. ITS SR 3.8.4.3 requires the verification that the 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. This changes the CTS by moving details concerning the status of the battery charger (disconnected throughout the test) from the CTS to the ITS Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to perform the battery service test on the Train A, Train B, and Train N batteries. 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 to the ITS Bases.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.3 Action b states that with one Train A or Train B 250 VDC battery and/or its charger inoperable, to restore the inoperable battery and/or charger to OPERABLE status within 2 hours. ITS 3.8.4 ACTION A has been added which covers the condition for one required Train A or Train B battery charger 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 $\leq$ 2 amps once per 12 hours and ITS 3.8.4 Required Action A.3 requires the restoration of the battery charger to OPERABLE status within 7 days. This changes the CTS by extending the time a required battery charger may be inoperable.

The purpose of CTS 3.8.2.3 is to ensure that the Train A and Train B DC Sources are capable of supplying 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 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 DBA occurring during the repair period. The proposed ITS 3.8.4 ACTION A provides a 7 day restoration time for an inoperable Train A or Train B battery charger. However, this time is contingent on a focused and tiered approach to assuring adequate battery capability is maintained. The first priority for the operator is to minimize the battery discharge,

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

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 7 day restoration period, this appears to be an acceptable relaxation. Since the focus of this allowance is that battery capacity be preserved and assured, the means of accomplishing this may be to utilize the spare battery charger that could be employed within the initial 2 hours, while in other cases it may be the degraded inservice charger that can continue 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.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.8.2.3.2.c.3 requires the verification that the required Train A and Train B battery chargers will supply at least 300 amperes at greater than or equal to 250 VDC for at least 4 hours. CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. CTS 4.8.2.5.2.c.3 requires the verification that the Train N battery charger will supply at least 25 amperes at greater than or equal to 250 VDC for at least 4 hours. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The Frequency of performance of these Surveillances is every 18 months. ITS SR 3.8.4.2 requires the verification that each required Train A and Train B battery charger supplies $\geq$ 300 amps and the required Train N battery charger supplies $\geq$ 25 amps at $\geq$ 250 VDC for $\geq$ 4 hours. ITS SR 3.8.4.3 requires the verification that the 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. The Frequency of testing of ITS SR 3.8.4.2 and ITS SR 3.8.4.3 is once every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.8.2.3.2.c.3 and CTS 4.8.2.5.2.c.3 is to ensure the associated battery chargers can perform their associated design function. The purpose of CTS 4.8.2.3.2.d and CTS 4.8.2.5.2.d is to ensure the batteries can perform their associated design function. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance

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ITS 3.8.4, DC SOURCES - OPERATING

data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the charger test and the battery service test is acceptable because the battery and charger are checked during the cycle by ensuring the battery terminal voltage is greater than or equal to the minimum established float voltage. Additional justification for extending the Surveillance test interval is that the 250 VDC Sources are designed to be single failure proof, therefore ensuring system availability in the event of a failure of a 250 VDC train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.3.2.c.1, for the Train A and Train B batteries, and CTS 4.8.2.5.2.c.1, for the Train N battery, require the verification that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance. CTS 4.8.2.3.2.c.2, for the Train A and Train B batteries, and CTS 4.8.2.5.2.c.2, for the Train N battery, require the removal of visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material. ITS 3.8.4 does not include these requirements for battery inspections, the removal of visible corrosion, and the verification that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material. This changes the CTS by deleting the explicit battery requirements from the Technical Specifications.

The purpose of CTS 4.8.2.3.2.c.1 and CTS 4.8.2.3.2.c.2, for the Train A and Train B batteries, and CTS 4.8.2.5.2.c.1 and CTS 4.8.2.5.2.c.2, for the Train N battery, is to ensure that the proper preventative maintenance type of battery activities are performed. In accordance with ITS SR 3.0.1, when any SR is not met, the LCO is not met. This is based on the premise that SRs represent the minimum acceptable requirements for OPERABILITY of the required equipment. However, the failure to meet these specific Surveillances do not necessarily mean that the equipment is not capable of performing its safety function. When the Train A and Train B batteries are capable of meeting ITS SR 3.8.4.1, the battery terminal voltage verification and ITS SR 3.8.4.3, the battery capacity test, they are considered to be able to meet their safety function. This also applies to the equivalent Train N SRs. The Surveillances that are proposed to be deleted are considered preventative maintenance type activities and are not considered the minimum acceptable requirements for OPERABILITY of the batteries. This change is acceptable because the SR requirements proposed in ITS 3.8.4 continue to ensure that the batteries are maintained consistent with the safety analyses and licensing basis. In addition, ITS 5.5.15 "Battery Monitoring and Maintenance Program," requires a program for battery maintenance based on

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the recommendations of IEEE 450-1995. The requirement to perform these battery preventative maintenance activities are consistent with IEEE 450-1995, and as such, will be maintained in the CNP procedures implementing ITS 5.5.15. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.4.3 requires the verification that the 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. Note 2 to ITS SR 3.8.4.3 specifies that 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 unit is maintained or enhanced. This changes the CTS by allowing the test to be performed in MODES other than MODE 5 or 6 as long as an assessment determines the safety of the unit is maintained or enhanced.

The purpose of the shutdown restrictions in CTS 4.8.2.3.2.d and CTS 4.8.2.5.2.d is to ensure the batteries are not tested in a condition that may compromise unit safety. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the strict restriction on unit conditions. 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, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L.5 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.a.4 requires the Train A and Train B 250 VDC batteries to have an overall voltage of greater than or equal to 250 VDC. CTS 4.8.2.5.2.a.4 requires the Train N 250 VDC battery overall voltage to be greater than or equal is 250 VDC. 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 deleting the actual value for the minimum overall battery voltage.

The purpose of CTS 4.8.2.3.2.a.4 and 4.8.2.5.2.a.4 is to help ensure the effectiveness of the batteries to perform their intended function. This change is acceptable because it has been determined that the relaxed Surveillance Requirement 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 deleting the actual battery terminal voltage limit (250 VDC) and replacing it with the minimum established design limit. This change is acceptable since the proposed value will continue to ensure that the battery

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DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

remains OPERABLE to perform its specified safety function. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.2.3
LCO 3.8.2.5

LCO 3.8.4	The ~~Train A and Train B~~ following DC electrical power subsystems shall be OPERABLE: (1)
	INSERT 1 (1)
APPLICABILITY:	MODES 1, 2, 3, and 4.
	INSERT 2 (1)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ~~[or two]~~ battery charger ~~[s on one train]~~ inoperable. (3) (2) DOC L.1 Train A or Train B	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND	
	A.2 Verify battery float current ≤ ~~[2]~~ amps.	Once per ~~[12]~~ hours (2)
	AND	
	A.3 Restore required battery charger ~~[s]~~ to OPERABLE status. (2)	7 days
LCO 3.8.2.3 Action b ~~[B. One [or two] batter[y][ies on one train] inoperable.~~	~~B.1 Restore batter[y][ies] to OPERABLE status~~	~~[2] hours]~~ (7)
LCO 3.8.2.3 Action b ~~C~~ B. One DC electrical power subsystem inoperable for reasons other than Condition A ~~[or B]~~.	~~C~~ B.1 Restore DC electrical power subsystem to OPERABLE status.	~~[2]~~ hours (1) (2) (7) (2) (7)
LCO 3.8.2.3 Action b ~~D~~ C. Required Action and Associated Completion Time of Condition A or B not met. (1)	~~D~~ C.1 Be in MODE 3.	6 hours (7) (1)
	AND	
	~~D~~ C.2 Be in MODE 5.	36 hours (7)

INSERT 3 (1)

1

INSERT 1

LCO 3.8.2.3 a. Train A and Train B 250 VDC electrical power subsystems;

LCO 3.8.2.5 b. Train N 250 VDC electrical power subsystem; and

DOC A.2 c. Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power subsystems capable of supplying the Unit 2 (Unit 1) and Unit 1 (Unit 2) Essential Service Water System components required by LCO 3.7.8, “Essential Service Water (ESW) System.”

1

INSERT 2

-NOTE-

Train N 250 VDC electrical power subsystem is not required to be OPERABLE in MODE 4.

1

INSERT 3

3.8.2.5 Action	D. Train N DC electrical power subsystem inoperable.	D.1 Declare the turbine driven auxiliary feedwater train inoperable.	Immediately
DOC A.2	E. One or both required Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B electrical power subsystems inoperable.	E.1 Declare the associated ESW train(s) inoperable.	Immediately

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CTS

SURVEILLANCE REQUIREMENTS INSERT 4 (1)

	SURVEILLANCE	FREQUENCY		
4.8.2.3.2.a.4, 4.8.2.5.2.a.4	SR 3.8.4.1 Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days		
4.8.2.3.2.c.3, 4.8.2.5.2.c.3 INSERT 4A INSERT 4B	SR 3.8.4.2 Verify each battery charger supplies ≥ [400] 300 amps ~~at greater than or equal to the minimum established~~ float voltage ≥ 250 VDC (6) for ≥ [8] (4) 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.~~ (6)	[18] 24 months	(1) (2) (3) (2) (1)	
4.8.2.3.2.e, 4.8.2.5.2.e 4.8.2.3.2.d, 4.8.2.5.2.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 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] unit (4) is maintained or enhanced. INSERT 5 (5) 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] 24 months	(2)	

INSERT 6 (1)

1 **INSERT 4**

-NOTES-

DOC M.1 1. SR 3.8.4.1 though SR 3.8.4.3 are applicable only to Unit 1 (Unit 1) and Unit 2 (Unit 2) DC electrical power subsystems.

2. SR 3.8.4.4 is applicable only to the required Unit 2 (Unit 1) and Unit 1 (Unit 2) DC electrical power subsystem(s).

---

1 3 **INSERT 4A**

required Train A and Train B

1 3 **INSERT 4B**

and the required Train N battery charger supplies $\geq$ 25 amps

5 **INSERT 5**

Credit may be taken for unplanned events that satisfy this SR.

1 **INSERT 6**

DOC M.1	SR 3.8.4.4	--- -NOTE- When Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies in the containment or auxiliary building, the following Unit 2 (Unit 1) and Unit 1 (Unit 2) SRs are not required to be performed: SR 3.8.4.3. --- For the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power subsystems, the SRs of the Unit 2 (Unit 1) and Unit 1 (Unit 2) Specification 3.8.4 are applicable.	In accordance with applicable SRs

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.4, DC SOURCES - OPERATING

1. Additional requirements were added to ISTS LCO 3.8.4 to ensure the appropriate DC Sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4. The new requirements were added as LCO 3.8.4.b and LCO 3.8.4.c. LCO 3.8.4.b and the Applicability Note have been added to reflect existing requirements associated with the Train N 250 VDC Source, which supports the turbine driven auxiliary feedwater train. The Applicability of this DC electrical power subsystem is consistent with the turbine driven auxiliary feedwater train. LCO 3.8.4.c has been added due to a shared system (Essential Service Water System) between both units. ITS 3.8.4 Conditions A, B, and C have been modified to apply only for Train A and Train B 250 VDC Sources. ACTION D has been added to cover the condition when the Train N 250 VDC Source is inoperable and ACTION E has been added to cover inoperabilities associated with opposite unit DC Source inoperabilities. The Required Actions are to declare the associated components inoperable. This is consistent with the current licensing basis. Two Notes have been added to the Surveillance Requirements Table and an additional Surveillance (SR 3.8.4.4) has been added to clearly define the Applicability of the Surveillances for both units and to ensure the opposite unit DC Sources are OPERABLE, when required.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. The term "required" has been added since each DC Source has two battery chargers, but only one is required to be OPERABLE.

4. Changes are made (additions, deletions, and/or changes) to the ISTS, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

5. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

6. The current licensing basis battery charger design voltage output is being provided, consistent with the current value in CTS 4.8.2.3.2.c.3 and CTS 4.8.2.5.2.c.3. In addition, the alternate charger testing method is not being included, consistent with current licensing basis.

7. The bracketed ISTS 3.8.4 ACTION B has been deleted since it is not necessary. ISTS 3.8.4 ACTION C (ITS 3.8.4 ACTION B) covers the condition of an inoperable battery. Due to this deletion, the subsequent ACTIONS have been renumbered.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources - Operating

BASES INSERT 1 (1)

BACKGROUND

The ~~station~~ DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment and preferred AC vital bus power (via inverters). As required by 10 CFR 50, Appendix A, GDC 17 (Ref. 1), the DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3). INSERT 2 (1)

Train A and Train B 250V

Trains A, B, and N

INSERT 2A

The ~~[125/~~250~~]~~ VDC electrical power sub system ~~consists of~~ are ~~two~~ independent ~~and redundant~~ safety related Class 1E DC electrical power subsystems ~~([Train A and Train B])~~. Each subsystem consists of ~~two~~ ~~[125]~~ 250 VDC batter~~ies~~y ~~[each battery [50]% capacity]~~ one full capacity, ~~the associated~~ two battery charger~~(s)~~ ~~for each battery~~, and all the associated control equipment and interconnecting cabling. INSERT 2B (1) (2)

Each Train A and Train B ~~The~~ 250 VDC source is obtained by use of ~~the~~ one ~~two~~ ~~125~~ 250 VDC batter~~ies~~y connected in series. Additionally there is ~~[one]~~ ~~spare~~ battery charger per subsystem, which provides backup service in the event that the ~~preferred~~ normal battery charger is out of service. If the ~~spare~~ standby battery charger is substituted for one of the ~~preferred~~ normal battery chargers, ~~then~~ the requirements of independence and redundancy between subsystems are maintained. INSERT 3 (1) (2)

consisting of 116 lead acid cells

During normal operation, the ~~[125/~~250~~]~~ VDC load is powered from the associated battery charger~~s~~ with the batter~~ies~~y floating on the system. In case of loss of normal power to the battery charger, the DC load is automatically powered from the ~~station~~ associated batteries. (2) (1)

Train A, Train B, or Train N

The ~~[~~Train A and Train B~~]~~ DC electrical power subsystems provide ~~the~~ control power for its associated Class 1E AC power load group, ~~[~~4.16~~]~~ kV switchgear ~~, and [480] V load centers~~ 600 V, and 480V. The Train A and Train B 250 V DC electrical power subsystems also provide DC electrical power to the inverters, which in turn power the 120V AC vital buses. (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 electrical power system consists of the Train A and Train B 250 VDC electrical power subsystems and the Train N 250 VDC electrical power system. Unit 2 (Unit 1) and Unit 1 (Unit 2) also has an identical set of DC electrical power subsystems. When the Essential Service Water (ESW) trains are not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW trains, the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power distribution subsystems are required to support Unit 1 (Unit 2) and Unit 2 (Unit 1) ESW operation.

1

INSERT 2

The Train N 250 VDC electrical power subsystem provides a reliable source for power and control of the turbine driven auxiliary feedwater train.

1

INSERT 2A

The Trains A and B 250 VDC electrical power subsystems are also redundant.

1

INSERT 2B

supplying power to the associated bus within the train

1

INSERT 3

The Train N 250 VDC source is obtained by use of one 250 VDC battery consisting of 117 lead acid cells connected in series.

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BASES

BACKGROUND (continued)

1

Each 125/250 VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from the other subsystem to ensure that a single failure in one subsystem does not cause a failure in a redundant subsystem. There is no sharing between redundant Class 1E subsystems ~~such as batteries, battery chargers, or distribution panels~~. 1

DC electrical power

Train A and Train B

Section 8.3.4

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.

INSERT 4 1

Each 4

and Train N 3

The batteries for Train A ~~and~~ Train B DC electrical power subsystems are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. ~~The minimum design voltage limit is 105/210 V.~~ 10

1 INSERT 5 1

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 V for a [58] cell battery (i.e., cell voltage of [2.065] volts per cell (Vpc)).~~ 10 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~~, 10 the battery cell will maintain its capacity for ~~[30] days~~ without further charging per manufacturer's instructions. 1 Optimal long term performance however, is obtained by maintaining a float voltage [2.20] to 2.2[5] Vpc. 2 This provides adequate over-potential, which limits the formation of lead sulfate and self discharge. ~~The nominal float voltage of [2.22] Vpc corresponds to a total float voltage output of [128.8] V for a [58] cell battery as discussed in the FSAR, Chapter [8] (Ref. 4).~~ 10

some time

2

3

Each Train A ~~and~~ Train B DC electrical power subsystem battery charger has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient excess capacity to restore the battery from the design minimum charge to its fully charged state ~~within 24 hours~~ while supplying normal steady state loads discussed in the FSAR, ~~Chapter~~ [8] (Ref. 4).

, and Train N 1

4 and 5 3 1

4 Sections 8.3.4 and 8.3.6

Each required

~~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

4 1 6

1

INSERT 4

The Train N 250 VDC battery has adequate storage capacity to meet the duty cycle(s) discussed in the UFSAR Section 8.3.6 (Ref. 5).

1

INSERT 5

Also, the batteries are sized to provide the minimum required voltage for essential components in the system.

.

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BASES

BACKGROUND (continued)

battery. This assures the internal losses of a battery are overcome and the battery is maintained in a fully charged state.

When desired, the charger can be placed in the equalize mode. The equalize mode is at a higher voltage than the float mode and charging current is correspondingly higher. The battery charger is operated in the equalize mode after a battery discharge or for routine maintenance. Following a battery discharge, the battery recharge characteristic accepts current at the current limit of the battery charger (if the discharge was significant, e.g., following a battery service test) until the battery terminal voltage approaches the charger voltage setpoint. Charging current then reduces exponentially during the remainder of the recharge cycle. For example, since Lead-calcium batteries have Nominal 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. ①

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the (u) FSAR, ~~Chapter [6] (Ref. 5) and~~ Chapter ~~[15]~~ 14 (Ref. 6), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation. ① ②

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 (j) and ⑨

b. A worst-case single failure.

The DC sources - Operating satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). ②

LCO

~~The DC electrical power subsystems, each subsystem consisting of [two] batteries, battery charger [for each battery] and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train~~ INSERT 6 ③ are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it

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3

INSERT 6

The DC electrical power subsystems — with a) each Train A and Train B 250 VDC subsystem consisting of one 250 VDC battery, one battery charger and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train, b) the Train N 250 VDC subsystem consisting of one 250 VDC battery, one battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated bus, and c) the required Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power subsystems capable of supplying the ESW System components when required by LCO 3.7.8, “Essential Service Water (ESW) System each consisting of one 250 VDC battery, one battery charger and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train

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DC Sources - Operating
B 3.8.4

BASES

LCO (continued)

associated with the

transient

in a safe condition after an anticipated operational ~~occurrence~~ (AOO) or a postulated DBA. Loss of any train DC electrical power subsystem does not prevent the minimum safety function from being performed (Ref. 4).

7

1

An OPERABLE DC electrical power subsystem requires ~~all required~~ batteries and ~~respective~~ chargers to be operating and connected to the associated DC buses.

a

one

4

1

APPLICABILITY

INSERT 7

~~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:

3

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

anticipated operational transients

9

1

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

INSERT 8

3

The DC electrical power requirements for MODES 5 and 6 are addressed in the Bases for LCO 3.8.5, "DC Sources - Shutdown."

INSERT 9

4

ACTIONS

A.1, A.2, and A.3

required Train A or Train B

3

Condition A represents ~~one train with~~ one ~~or two~~ battery chargers inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or 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.

2

(specified in SR 3.8.4.1 Bases)

6

3

INSERT 7

Train A and Train B 250 VDC electrical power subsystems and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B DC electrical power subystems

3

INSERT 8

The Train N 250 VDC electrical power subsystem is required to be OPERABLE in MODES 1, 2, and 3 to support the turbine driven auxiliary feedwater train in the event that it is called upon to function when the Main Feedwater System is lost.

4

INSERT 9

and other conditions in which DC electrical power subsystems are required

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BASES

ACTIONS (continued)

- 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 having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within [12] hours, avoiding a premature shutdown with its own attendant risk. 2

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. 8

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action A.2).

Required Action A.2 requires that the battery float current be verified as less than or equal to [2] amps. This indicates that, if the battery had been discharged as the result of the inoperable battery charger, it has now been fully recharged. If at the expiration of the initial [12] hour period the battery float current is not less than or equal to [2] amps this indicates there may be additional battery problems ~~and the battery must be declared inoperable~~. and ACTION C must be entered 2 2 2 4

BASES

ACTIONS (continued)

Required Action A.3 limits the restoration time for the inoperable battery charger to 7 days. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g., balance of plant non-Class 1E battery charger). The 7 day Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status.

B.1

~~- REVIEWER'S NOTE -~~
~~The 2 hour Completion Times of Required Actions B.1 and C.1 are in brackets. Any licensee wishing to request a longer Completion Time will need to demonstrate that the longer Completion Time is appropriate for the plant in accordance with the guidance in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications."~~

5

~~Condition B represents one train with one [or two] batter[y][ies] inoperable. With one [or two] batter[y][ies] inoperable, the DC bus is being supplied by the OPERABLE battery charger[s]. Any event that results in a loss of the AC bus supporting the battery charger[s] will also result in loss of DC to that train. Recovery of the AC bus, especially if it is due to a loss of offsite power, will be hampered by the fact that many of the components necessary for the recovery (e.g., diesel generator control and field flash, AC load shed and diesel generator output circuit breakers, etc.) likely rely upon the batter[y][ies]. In addition the energization transients of any DC loads that are beyond the capability of the battery charger[s] and normally require the assistance of the batter[y][ies] will not be able to be brought online. The [2] hour limit allows sufficient time to effect restoration of an inoperable battery given that the majority of the conditions that lead to battery inoperability (e.g., loss of battery charger, battery cell voltage less than [2.07] V, etc.) are identified in Specifications 3.8.4, 3.8.5 and 3.8.6 together with additional specific completion times.~~

3

B ~~C~~.1 INSERT 10 3 3

Condition ~~C~~ B represents one train with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for complete loss of DC power to the affected train. The 2 hour limit is

3

INSERT 10

Train A or Train B 250 VDC electrical power subsystem

BASES

ACTIONS (continued)

consistent with the allowed time for an inoperable DC distribution ~~system~~ sub train. 1

If one of the ~~required~~ Train A or Train B 250V DC electrical power subsystems is inoperable for reasons other than Condition A ~~or B~~ (e.g., inoperable battery or inoperable battery charger and associated inoperable battery), the remaining DC electrical power subsystem has the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst- case single failure could, however, result in the loss of minimum necessary DC electrical subsystems to mitigate a worst case accident, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 8) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown. 3 3 1

C.1 and C.2 3

INSERT 11

If ~~the inoperable DC electrical power subsystem cannot be restored to OPERABLE status within the required Completion Time~~, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit systems. The Completion Time to bring the unit to MODE 5 is consistent with the time required in Regulatory Guide 1.93 (Ref. 8). 3

INSERT 12 3

INSERT 13 3

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state while supplying the continuous steady state loads of the associated DC subsystem. On float charge, battery cells will receive adequate current to optimally charge the battery. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the minimum float voltage established by the battery manufacturer (2.20 Vpc or ~~127.6~~ 255.2 V at the battery terminals). This voltage maintains the battery plates in a condition that supports maintaining the grid life (expected to be approximately 20 years). The 2 INSERT 14 3 2 DC 1

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3

INSERT 11

any Required Action and associated Completion Time of Condition A or B is not met

3

INSERT 12

D.1

If the Train N DC electrical power subsystem is inoperable, the Train N powered system is not capable of performing its intended function. Immediately declaring the affected supported feature, e.g., the turbine driven AFW train, inoperable allows the ACTIONS of LCO 3.7.5, "Auxiliary Feedwater System (AFW)," to apply appropriate limitations on continued reactor operation.

E.1

If one or both required Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B DC electrical power subsystems are inoperable, the associated ESW train(s) are not capable of performing their intended function. Immediately declaring the affected supported feature, e.g., ESW train, inoperable allows the ACTIONS of LCO 3.7.8 to apply appropriate limitations on continued reactor operation.

3

INSERT 13

The Surveillances are modified by two Notes to clearly identify how the Surveillances apply to the Unit 1 (Unit 1) and Unit 2 (Unit 2) DC electrical power subsystems. Note 1 states that SR 3.8.4.1 through SR 3.8.4.3 are applicable only to Unit 1 (Unit 1) and Unit 2 (Unit 2) DC electrical power subsystems and Note 2 states that SR 3.8.4.4 is applicable only to the Unit 2 (Unit 1) and Unit 1 (Unit 2) DC electrical power subsystems. These Notes are necessary since Unit 2 (Unit 1) and Unit 1 (Unit 2) DC electrical power subsystems are not required to perform all of the Surveillances associated with the Unit 2 (Unit 1) and Unit 1 (Unit 2) DC electrical power subsystems (e.g., SR 3.8.4.3 is not required to be performed on the Unit 2 (Unit 1) and Unit 1 (Unit 2) batteries under certain conditions when not in MODE 1, 2, 3, or 4 for the Train A and B batteries and MODE 1, 2, or 3 for the Train N battery).

3

INSERT 14

of the Train A and Train B batteries and 2.20 Vpc or 257.4 VDC for the Train N battery.
.

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BASES

SURVEILLANCE REQUIREMENTS (continued) Conservative when compared 1

7 day Frequency is ~~consistent~~ with manufacturer recommendations and IEEE-450 (Ref. ~~8~~ 9). 1

SR 3.8.4.2

This SR verifies the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. 9), the battery charger supply is recommended to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensure that these requirements can be satisfied.

Train A and Train B required 3

≥ 300 ≥ 250 VDC

This SR ~~provides two options. One option~~ requires that each battery 3 2 charger be capable of supplying ~~[400]~~ amps at ~~the minimum established float voltage~~ for ~~[8]~~ ≥ 24 hours. INSERT 15 3 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 lease [2] hours~~. 2 6 15

INSERT 15A 1

~~The other option requires that each battery charger be capable of recharging the battery after a service test coincident with supplying the largest coincident demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur). This level of loading may not normally be available following the battery service test and will need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing criteria since the battery recharge is affected by float voltage, temperature, an the exponential decay in charging current. The battery is recharged when the measured charging current is ≤ [2] amps.~~ 3

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~~ 24 month~~s~~ intervals. ~~In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.~~ 2 3

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

3

INSERT 15

and the Train N battery charger is capable of supplying $\geq$ 25 amps at $\geq$ 250 VDC for $\geq$ 4 hours

1

INSERT 15A

to detect significant charger failures

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BASES

SURVEILLANCE REQUIREMENTS (continued)

INSERT 16 (1)

power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in ~~Reference 4~~ the applicable design documents. (1)

The Surveillance Frequency of ~~[18~~ 24 months~~]~~ (2) ~~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].~~ INSERT 17 (1)

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, 3, (4) or ~~2~~ (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~~ unit (1) shutdown and startup to determine that ~~plant~~ safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, (4) or ~~2~~ (4). Risk insights or deterministic methods may be used for the assessment. INSERT 18 (7) (6) (2)

INSERT 19 (3)

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17. (6)
2. Regulatory Guide 1.6, March 10, 1971. (1) (2)
3. IEEE-308-~~[1978]~~ 1980.
4. (U)FSAR, ~~Chapter [8]~~ Section 8.3.4 (1)
5. UFSAR, Section 8.3.6. (1)
~~5. FSAR, Chapter [6].~~
6. (U)FSAR, Chapter ~~[15]~~ 14. (1) (2)
7. UFSAR, Section 8.5.

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1

INSERT 16

The battery charger must be disconnected throughout the performance of the battery service test.

1

INSERT 17

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

7

INSERT 18

Credit may be taken for unplanned events that satisfy this SR.

3

INSERT 19

SR 3.8.4.4

With the exception of this Surveillance, all other Surveillances of this Specification (SR 3.8.4.1 through 3.8.4.3) are applied to the Unit 1 (Unit 1) and Unit 2 (Unit 2) DC sources. This Surveillance is provided to direct that appropriate Surveillances for the required Unit 2 (Unit 1) and Unit 1 (Unit 2) DC sources are governed by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications. Performance of the applicable opposite unit Surveillances will satisfy the opposite unit requirements as well as satisfy the given unit Surveillance Requirement.

The Frequency required by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) SR also governs performance of that SR for Unit 1 (Unit 1) and Unit 2 (Unit 2).

As noted, when Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies in the containment or auxiliary building, SR 3.8.4.3 is not required to be performed. This ensures that a Unit 1 (Unit 1) and Unit 2 (Unit 2) SR will not require a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR to be performed, when Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications exempts performance of a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR (however, as stated in the Unit 2 (Unit 1) and Unit 1 (Unit 2) SR 3.8.5.1 Bases, while performance of an SR is exempted, the SR must still be met).

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BASES

REFERENCES (continued)

8 → 7. Regulatory Guide 1.93, December 1974. 1

9 → 8. IEEE-450-1995. 1 2

10 → 9. 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 ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. Changes are made to the Bases which reflect changes to the Specification.

4. Changes are made to be consistent with the actual Specification.

5. The “Reviewer’s Note” has been deleted since it is not intended to be included in the plant specific ITS submittals.

6. Grammatical/editorial/spelling error corrected.

7. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

8. These two paragraphs have been deleted. ITS 3.8.4 ACTION A provides actions for when a battery charger is inoperable. The discussion provided in the two paragraphs is related to why a charger is inoperable if Required Action A.1 cannot be met, or if the charger is operating in the current limit mode, why Required Action A.2 might not be able to be met within the 12 hour Completion Time. These two paragraphs are not necessary. ACTION A is applicable when a charger is inoperable; thus stating the charger is inoperable if the battery float voltage cannot be restored within 2 hours is redundant. In addition, stating that Required Action A.2 might not be able to be met if the charger is in the current limit mode is unnecessary. If the charger is OPERABLE and in service, then ACTION A is not applicable. Thus, Required Action A.2 does not have to be met and the discussion concerning the condition of the battery charger is moot. The remaining paragraphs in the Bases for ACTION A are sufficient to discuss the requirements of ITS 3.8.4 ACTION A.

9. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

10. These battery design values have been deleted, since they are more specific than necessary and are not required to provide sufficient background for this Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.4, DC SOURCES - OPERATING

There are no specific NSHC discussions for this Specification.

ATTACHMENT 5

ITS 3.8.5, DC Sources - Shutdown

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

ITS 3.8.5

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown."

M.1

LIMITING CONDITION FOR OPERATION

One

power subsystem

LCO 3.8.5

3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and~~ ~~bus~~ shall be ~~energized~~ ~~and~~ OPERABLE:

LA.1

See ITS 3.8.10

~~1 - 250-volt D.C. bus, and~~

~~1 - 250-volt battery bank and charger associated with the above D.C. bus.~~

LA.1

APPLICABILITY: MODES 5 and 6, and during movement of irradiated fuel.

A.4

ACTION:

Add ACTIONS Note

A.2

ACTION A

With less than the above complement of D.C. equipment ~~and bus~~ OPERABLE

See ITS 3.8.10

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes ~~except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~

that could result in loss of required SDM or boron concentration.

L.1

b. Immediately initiate actions to restore the required D.C. electrical equipment ~~and bus~~ to OPERABLE status.

See ITS 3.8.10

c. Immediately declare associated required residual heat removal loop(s) inoperable.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.10

SR 3.8.5.1

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

Add proposed Note to SR 3.8.5.1

L.2

ITS 3.8.5

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." M.1

One

power subsystem

LCO 3.8.5 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical equipment and bus shall be energized and OPERABLE: LA.1

See ITS 3.8.10

1 - 250-volt D.C. bus, and

1 - 250-volt battery bank and charger associated with the above D.C. bus. LA.1

APPLICABILITY: MODES 5 and 6. A.3

and during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

ACTION: Add ACTIONS Note A.2

ACTION A With less than the above complement of D.C. equipment and bus OPERABLE.

See ITS 3.8.10

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

that could result in loss of required SDM or boron concentration. L.1

b. Immediately initiate actions to restore the required D.C. electrical equipment and bus to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.10

SR 3.8.5.1 4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

Add proposed Note to SR 3.8.5.1 L.2

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.8.2.4 (Unit 1) is applicable during MODES 5 and 6, and during the movement of irradiated fuel. CTS 3.8.2.4 (Unit 2) is applicable only during MODES 5 and 6, however CTS 3.8.2.4 Action a (Unit 2) requires movement of irradiated fuel assemblies to be suspended if the required DC electrical equipment is inoperable. ITS 3.8.5 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. In addition, 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 Note to the ACTIONS stating that LCO 3.0.3 is not applicable. The change to the Unit 1 Applicability is discussed in DOC A.4 and the change to the Unit 2 Applicability is discussed in DOC A.3.

The purpose of CTS 3.8.2.4 is to ensure that at least one 250 VDC battery bank and associated charger is OPERABLE to support equipment required to be OPERABLE. 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 shutdown it would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as administrative as it is a clarification of the intent of CTS LCO 3.0.3 that does not result in a technical change to the CTS.

A.3 (Unit 2 only) CTS 3.8.2.4 is applicable during MODES 5 and 6. However, CTS 3.8.2.4 Action a requires movement of irradiated fuel assemblies to be suspended if the required DC electrical equipment is inoperable. ITS 3.8.5 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This changes the Unit 2 CTS by adding the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment.

The purpose of CTS 3.8.2.4 is to ensure that at least one 250 VDC battery bank and associated charger is OPERABLE to support equipment required to be OPERABLE. This change adds the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

containment. This Applicability is consistent with the Applicability of Unit 1 CTS 3.8.2.4 and consistent with CTS 3.8.2.4 Action a of Unit 2, which states to suspend movement of irradiated fuel when the required 250 VDC battery bank and associated charger is inoperable. This change is designated as administrative as it is a clarification of the intent of Unit 2 CTS 3.8.2.4 that does not result in a technical change to the Unit 2 CTS.

A.4 (Unit 1 only) CTS 3.8.2.4 Applicability includes "during movement of irradiated fuel." ITS 3.8.5 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment." This changes the Unit 1 CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.8.2.4, with respect to fuel handling, is to ensure adequate DC Sources are available to power equipment required to mitigate a fuel handling accident. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, in lieu of the current wording which just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the Unit 1 CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS LCO 3.8.2.4 requires one 250 VDC battery bank and charger associated with the specified 250 VDC bus to be OPERABLE. ITS LCO 3.8.5 requires the Train A or Train B 250 VDC electrical power subsystem to be OPERABLE to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." This changes the CTS by being specific as to what the required DC electrical power subsystem must be powering.

The purpose of CTS LCO 3.8.2.4 is to ensure the Train A or Train B 250 VDC electrical power subsystem is OPERABLE to support the specified 250 VDC bus. The existing requirement of CTS LCO 3.8.2.4 is not specific as to what the 250 VDC bus must be powering. The requirement in ITS LCO 3.8.5 specifies that the DC electrical power subsystem must support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." This change is acceptable since the added restriction conservatively assures the required DC electrical power subsystem is capable of powering at least one required train to support equipment required by other LCOs. This change is designated as more restrictive because more explicit DC electrical power subsystem requirements are specified (i.e., supporting equipment required to be OPERABLE) in the ITS than in the CTS.

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.4 requires one "250 VDC battery bank and charger" associated with the specified 250 VDC bus to be OPERABLE. ITS LCO 3.8.5 requires one Train A or Train B 250 VDC electrical power subsystem to be OPERABLE to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." This changes the CTS by moving the details of what constitutes the required Train A or Train B 250 VDC electrical power subsystem 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 retains the requirement that the Train A or Train B 250 VDC electrical power subsystem to be OPERABLE to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." 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 the system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.4 Action a specifies the compensatory action for an inoperable required DC Source. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.5 Required Action A.3 requires the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50ºF or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of CTS 3.8.2.4 Action a is to suspend any positive reactivity additions that could affect the SDM of the reactor core. 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

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

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 DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water). Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross-reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS LCO 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50ºF or less in any one-hour period in MODE 5. This limitation has been deleted. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.2.4.2 requires the demonstration of the OPERABILITY of the 250 VDC battery and charger in accordance with the Surveillance Requirements of CTS 4.8.2.3.2. ITS 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 SR 3.8.4.3 does not have to be performed. This changes the CTS by allowing a certain SR not to be performed. Changes to the Surveillances of CTS 4.8.2.3.2 are discussed in the Discussion of Changes for ITS 3.8.4, "DC Sources - Operating."

The purpose of the ITS SR 3.8.5.1 Note is to ensure that required equipment is not made inoperable by testing when the equipment is the only OPERABLE equipment available to support unit operations. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. ITS SR 3.8.4.3 is the battery

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

capacity test. The performance of SR 3.8.4.3 involve tests that would cause the only required OPERABLE Train A or Train B 250 VDC electrical power subsystem to be rendered inoperable. This condition presents a significant risk if an event were to occur during the test. The NRC has previously provided Surveillance exceptions in the CNP Unit 1 and Unit 2 CTS to avoid a similar condition for the AC Sources, but the exceptions have not been applied to DC Sources. In an effort to consistently address this concern, ITS SR 3.8.5.1 has a Note that excludes performance requirements of Surveillances that would require the required OPERABLE DC electrical power subsystem to be rendered inoperable. This allowance does not take exception to the requirement for the DC electrical power subsystem to be capable of performing the particular function, but just to the requirement to demonstrate that capability while that source of power is being relied on to support meeting the LCO. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources - Shutdown

3.8.2.4

LCO 3.8.5 ~~[DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."]~~ (1)

INSERT 1 (2)

Train A or Train B 250V

~~[One]~~ DC electrical power subsystem shall be OPERABLE. (3)

~~- REVIEWER'S NOTE -~~
~~This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only one DC electrical power subsystem to be OPERABLE. Action A the bracketed optional wording in Condition B are also eliminated for this case. The first option above is adopted for plants that have a licensing basis (CTS) requiring the same level of DC electrical power subsystem support as is required for power operating conditions.~~ (1)

APPLICABILITY: MODES 5 and 6,
During movement of ~~[recently]~~ irradiated fuel assemblies. (3)

INSERT 2 (6)

ACTIONS

DOC A.2

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~[A. One [or two] battery charger[s on one train] inoperable.~~ ~~AND~~	~~A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.~~ ~~AND~~	~~2 hours~~ (1)

2

INSERT 1

to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown."

6

INSERT 2

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
The redundant train battery and charger[s] OPERABLE.	A.2 Verify battery float current ≤ [2] amps. AND A.3 Restore battery charger[s] to OPERABLE status.	Once per [12] hours 7 days]
A B. One or more required DC electrical power subsystem(s) inoperable [for reasons other than Condition A OR Required Action and associated Completion Time of Condition A not met].	B.1 Declare affected required feature(s) inoperable. OR B.2.1 Suspend CORE ALTERATIONS. AND B.2.2 Suspend movement of [recently] irradiated fuel assemblies. AND B.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND B.2.4 Initiate action to restore required DC electrical power subsystem(s) to OPERABLE status.	Immediately Immediately Immediately Immediately Immediately

Act...

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	- NOTE - is 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, and SR 3.8.4.3.	In accordance with applicable SRs

4.8.2.4.2

7

5

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.5, DC SOURCES - SHUTDOWN

1. The bracketed optional ISTS LCO 3.8.5 and “Reviewer’s Note” have been deleted since the current licensing basis only requires one DC electrical power subsystem to be OPERABLE. ISTS 3.8.5 ACTION A has been deleted since only one required DC electrical power subsystem is specified in the LCO. This allowance is only acceptable if the first option of the LCO is used. The subsequent Condition and Required Actions have been renumbered and modified, as applicable.

2. The second option of ISTS LCO 3.8.5 is not specific as to what the DC electrical power subsystem must be powering. The LCO has been modified to require the Train A or Train B 250 VDC electrical power subsystem to be powering a DC train required OPERABLE by LCO 3.8.10.

3. The brackets are removed and the proper plant specific information/value is provided.

4. ISTS 3.8.5 Required Action B.1 provides an option to declare affected required feature(s) inoperable with one or more required DC electrical power subsystems inoperable. The ISTS Bases states that this is acceptable because the remaining train with DC power available may be capable of supporting sufficient features to allow continuation of CORE ALTERATIONS and fuel movement. Thus, this Required Action assumes two DC power sources are required by the LCO. This option has been deleted since only one Train A or Train B 250 VDC electrical power subsystem is required to be OPERABLE by the LCO. Subsequent Required Actions have been renumbered and modified, as applicable.

5. Change made to be consistent with the Writers Guide for the Improved Standard Technical Specifications, NEI 01-03.

6. The Applicability has been clarified, since CNP has two units and irradiated fuel movement can occur in three different locations.

7. The allowance to not perform SR 3.8.4.2 has been deleted. The CNP design includes two battery chargers per train. Therefore, the battery charger SR can be performed without making the train inoperable.

Improved Standard Technical Specifications (ISTS) Bases Markup and 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." 4

APPLICABLE SAFETY ANALYSES

4 The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, ~~Chapter [6] (Ref. 1) and~~ Chapter [15] 14 (Ref. 2 1), 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. 1 2

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

5 INSERT 1

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; 3

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and 3

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 [ ] 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 Design Basis Accidents (DBAs) that are analyzed in MODES 1,2,3, and 4 have no specific analyses in MODES 5 and 6 because the energy contained 1

5 **INSERT 1**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABLE SAFETY ANALYSES (continued)

within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ 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 ~~S~~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. (4) (7)

~~The~~ DC ~~s~~ources - Shutdown satisf~~y~~ies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (2)

LCO

The One DC electrical power subsystem~~s~~, ~~[each required]~~ ~~[the required]~~ ~~[subsystem~~ consisting of ~~two~~ one batter~~ies~~y, one battery charger ~~per battery~~, and the corresponding control equipment and interconnecting cabling ~~within [one] the train~~, ~~[are]~~ is required to be OPERABLE to support ~~[required] [one]~~ train~~[s]~~ of the distribution sub~~system~~s 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~~). (1) (1)

Train A or Train B 250 V

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, INSERT 2 provide assurance that: (1) (5)

5

INSERT 2

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABILITY (continued)

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core, 3

b. Required features needed to mitigate a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)] are available, 1

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and 3

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.

A.1, A.2, and A.3

- REVIEWER'S NOTE -

ACTION A is included only when plant-specific implementation of LCO 3.8.5 includes the potential to require both trains of the DC System to be OPERABLE. If plant-specific implementation results in LCO 3.8.5 requiring only one trains of the DC System to be OPERABLE, then ACTION A is omitted and ACTION B is renumbered as ACTION A. 5

Condition A represents one train with one [or two] battery chargers inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or

BASES

ACTIONS (continued)

equal to the minimum established float voltage within 2 hours. This time provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring the battery terminal voltage to greater than or equal to the minimum established float voltage provides good assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability.

- REVIEWER'S NOTE -

A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).

5

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.

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting modes, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit modes that is necessary during the recovery period following a battery discharge event that the DC system is designed for.

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action A.2).

BASES

ACTIONS (continued)

~~Required Action A.2 requires that the battery float current be verified as less than or equal to [2] amps. This indicates that, if the battery had been discharged as the result of the inoperable battery charger, it has now been fully recharged. If at the expiration of the initial [12] hour period the battery float current is not less than or equal to [2] amps this indicates there may be additional battery problems and the battery must be declared inoperable.~~ (5)

~~Required Action A.3 limits the restoration time for the inoperable battery charger to 7 days. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g. balance of plant non-Class 1E battery charger). The 7 day Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status.~~

A.1, A.2, A.3, and A.4 ~~B.1, B.2.1, B.2.2, B.2.3, and B.2.4~~ (5)

~~[If two trains are required by LCO 3.8.10, the remaining train with DC power available may be capable of supporting sufficient systems to allow continuation of CORE ALTERATIONS and fuel movement] [involving handling recently irradiated fuel]. By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCO ACTIONS. In many instances this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend~~ INSERT 3 (5)

CORE ALTERATIONS, movement of ~~[recently]~~ irradiated fuel assemblies, and operations involving positive reactivity additions~~)~~ that could result in ~~failure to meet the minimum SDM or boron concentration limit~~ INSERT 4 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 (Reactor Coolant System) 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 (Moderator Temperature Coefficient) must also be evaluated to ensure they do not result in a loss of required SDM. (1) (5) (5) (6) (4) (4)

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

5

INSERT 3

With the required Train A or Train B 250 VDC electrical power subsystem inoperable, the minimum required DC power sources are not available. Therefore, suspension of

6

INSERT 4

7

8

loss of required SDM (Mode 5) specified in LCO 3.1.1, “SHUTDOWN MARGIN (SDM),” or boron concentration (Mode 6) specified in LCO 3.9.1, “Boron Concentration,” 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.

5

BASES

ACTIONS (continued)

subsystem(s) and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the unit safety systems. (1)

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 (15) 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. (5)

REFERENCES

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

(1) 2. (U) FSAR, Chapter [15]. (14) (2) (1)

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.5 BASES, DC SOURCES - SHUTDOWN

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

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

5. Changes are made to the Bases which reflect changes made to the Specification.

6. TSTF-286, Rev. 2, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-286, Rev. 2, have been made.

7. Typographical error corrected.

8. Changes made to be consistent with other places in the Bases.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.5, DC SOURCES - SHUTDOWN

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 6

ITS 3.8.6, Battery Parameters

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

ITS 3.8.6

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 1AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 1CD, and a full capacity charger.

See ITS 3.8.4 and 3.8.9

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

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus 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.

See ITS 3.8.9

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.

See ITS 3.8.4

Add proposed ACTIONS A, B, C, D, E, and F — L.1

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.6.2

a. At least once per ~~7~~ 31 days by verifying that: — L.2

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

SR 3.8.6.2

3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and — L.4

4. The overall battery voltage is greater than or equal to 250 volts.

See ITS 3.8.4

Add proposed SR 3.8.6.4 — M.1

ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

M.2

31 days for electrolyte level

b. At least once per 92 days by verifying that:

L.4

2.07

SR 3.8.6.5 1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

L.3

2. ~~The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~

greater than or equal to minimum established design limits

L.5

SR 3.8.6.3 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

See ITS 3.8.4

A.3

SR 3.8.6.6 e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

L.6

See ITS 3.8.4

or modified performance discharge

L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.~~ 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.

LA.1

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 A.2

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE: See ITS 3.8.5 and 3.8.10

1 - 250-volt D.C. bus, and See ITS 3.8.10

1 - 250-volt battery bank and charger associated with the above D.C. bus. See ITS 3.8.10

APPLICABILITY: MODES 5 and 6, and during movement of irradiated fuel. A.2

ACTION:

Add proposed ACTIONS A, B, C, D, E, and F L.1

With less than the above complement of D.C. equipment and bus OPERABLE

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2. See ITS 3.8.5 and 3.8.10

b. Immediately initiate actions to restore the required D.C. electrical equipment and bus to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable. See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. See ITS 3.8.10

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See CTS markup pages 1 of 10 and 2 of 10

ITS 3.8.6

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

See ITS 3.8.4 and 3.8.9

APPLICABILITY: MODES 1, 2 and 3. — A.2

ACTION

Add proposed ACTIONS A, B, C, D, E, and F — L.1

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

See ITS 3.8.4 and 3.8.9

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

L.2

SR 3.8.6.2 a. At least once per 7 31 days by verifying that:

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

SR 3.8.6.2 3. The pilot cell voltage is greater than or equal to 2.13 2.07 volts, and — L.4

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

b. At least once per 92 days by verifying that: — 31 days for electrolyte level — M.2

SR 3.8.6.5 1. The voltage of each connected cell is greater than or equal to 2.13 2.07 volts under float charge. — L.4

2. ~~The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~ — L.3

SR 3.8.6.3 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~ greater than or equal to minimum established design limits — L.5

Add proposed SR 3.8.6.4 — M.1

ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

See ITS 3.8.4

d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle with the battery charger disconnected.

A.3

SR 3.8.6.6

e. At least once per 60 months, conduct a performance test of battery capacity ~~during shutdown (MODES 5 or 6)~~, by verifying that the battery capacity is at least 80% of the manufacturer's rating. *When this test is performed in place of a battery service test, a modified performance test shall be conducted.*

or modified performance discharge

L.6

See ITS 3.8.4

L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. 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.

LA.1

ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open: — See ITS 3.8.4 and 3.8.9

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

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

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus 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. — See ITS 3.8.9

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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. — See ITS 3.8.4

Add proposed ACTIONS A, B, C, D, E, and F — L.1

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability. — See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.6.2 a. At least once per ~~7~~ 31 days by verifying that: — L.2

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

SR 3.8.6.2 3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and — L.4

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

Add proposed SR 3.8.6.4 — M.1

ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

M.2

31 days for electrolyte level

b. At least once per 92 days by verifying that:

L.4

2.07

SR 3.8.6.5

1. The voltage of each connected cell is greater than or equal to ~~2.13~~ volts under float charge.

2. ~~The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~

L.3

greater than or equal to minimum established design limits

L.5

SR 3.8.6.3

3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

See ITS 3.8.4

d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

A.3

SR 3.8.6.6

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

L.6

See ITS 3.8.4

or modified performance discharge

L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.~~ 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.

LA.1

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6

A.2

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

See ITS 3.8.5 and 3.8.10

1 - 250-volt D.C. bus, and

See ITS 3.8.10

1 - 250-volt battery bank and charger associated with the above D.C. bus.

See ITS 3.8.5

APPLICABILITY: MODES 5 and 6.

A.2

ACTION:

Add proposed ACTIONS A, B, C, D, E, and F

L.1

With less than the above complement of D.C. equipment and bus OPERABLE.

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

See ITS 3.8.5 and 3.8.10

b. Immediately initiate actions to restore the required D.C. electrical equipment and bus to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.10

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See CTS markup pages 6 of 10 and 7 of 10

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ITS 3.8.6

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger.

See ITS 3.8.4 and 3.8.9

APPLICABILITY: MODES 1, 2 and 3. — A.2

ACTION

Add proposed ACTIONS A, B, C, D, E, and F — L.1

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2.

See ITS 3.8.4 and 3.8.9

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

SR 3.8.6.2 — a. At least once per ~~7~~ 31 days by verifying that: — L.2

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

SR 3.8.6.2 — 3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and — L.4

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

b. At least once per ~~92~~ days by verifying that: 31 days for electrolyte level — M.2 — L.4

SR 3.8.6.5 — 1. The voltage of each connected cell is greater than or equal to ~~2.13~~ 2.07 volts under float charge.

2. ~~The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test,~~ and — L.3

SR 3.8.6.3 — 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~ greater than or equal to minimum established design limits — L.5

Add proposed SR 3.8.6.4 — M.1

ITS 3.8.6

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

See ITS 3.8.4

d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle with the battery charger disconnected.

A.3

L.6

SR 3.8.6.6

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

See ITS 3.8.4

or modified performance discharge

L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.~~ 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.

LA.1

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DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.8.2.3 is applicable during MODES 1, 2, 3, and 4. CTS 3.8.2.4 (Unit 1) is applicable during MODES 5 and 6 and during movement of irradiated fuel. CTS 3.8.2.4 (Unit 2) is applicable during MODES 5 and 6. CTS 3.8.2.5 is applicable during MODES 1, 2, and 3. ITS LCO 3.8.6 requires the battery parameters for the Trains A, B, and N 250 VDC batteries, and opposite unit Trains A and B 250 VDC batteries to be within limits. ITS 3.8.6, which only covers the requirements for battery parameters, is applicable when the associated DC electrical power subsystems are required to be OPERABLE. This changes the CTS by combining the requirements for the Train A, B, and N 250 VDC battery parameters into one Specification and replacing the actual MODES with the phrase "When associated DC electrical power subsystems are required to be OPERABLE."

The purpose of ITS 3.8.6 is to cover the battery parameter requirements for the Trains A, B, and N 250 VDC batteries in one Specification. This change combines the CTS 3.8.2.3, 3.8.2.4, and 3.8.2.5 requirements for the Trains A, B, and N 250 VDC battery parameters into one Specification. There are no technical changes as a result of this change since it simply converts the Specifications into the format of the ITS. 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 below. Any changes to the LCO and Applicability of the Trains A, B, and N 250 VDC, and opposite unit Trains A and B 250 VDC batteries are discussed in the Discussion of Changes for ITS 3.8.4 and 3.8.5. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 CTS 4.8.2.3.2.e requires the performance test of battery capacity on the Trains A and B 250 VDC batteries. CTS 4.8.2.5.2.e requires the performance test of battery capacity on the Train N 250 VDC battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.6.6 requires the same test, but a Note to SR 3.8.6.6 specifies that this Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. In addition, the Note states that credit may be taken for unplanned events that satisfy this SR. This changes the CTS by adding the allowance that credit may be taken for unplanned events that satisfy the associated SR. Additional changes to CTS 4.8.2.3.2.e and CTS 4.8.2.5.2.e are discussed in DOC L.6.

The ITS Note clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.2.3.2 specifies the Surveillances for the Trains A and B 250 VDC batteries while the unit is operating and CTS 4.8.2.4.2 specifies the Surveillances for the Trains A and B 250 VDC batteries during shutdown. CTS 4.8.2.5.2 specifies the Surveillances for the Train N 250 VDC battery. ITS 3.8.6 adds two new Surveillances. ITS SR 3.8.6.1 requires the verification every 7 days that each battery float current is $\leq$ 2 amps. ITS SR 3.8.6.4 requires the verification every 31 days that each battery pilot cell temperature is greater than or equal to the minimum established design limits. This changes the CTS by adding explicit Surveillances for battery float current and pilot cell temperature.

The purpose of SR 3.8.6.1 is to assist in the determination of the state of charge of the battery while the purpose of SR 3.8.6.4 is to ensure the pilot cell electrolyte temperature is maintained above the limit to assure the battery can provide the required current and voltage to meet the design requirements. The specified float current is based on the float current that is indicative of a charged battery. Temperatures lower than assumed in battery sizing calculations act to inhibit or reduce battery capacity. These Surveillances are consistent with IEEE 450-1995. This change is acceptable since the Surveillances are necessary to help ensure the batteries remain OPERABLE. This change is designated as more restrictive because explicit Surveillance Requirements have been added.

M.2 CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3 require verification that electrolyte level of each battery connected cell be within limit every 92 days. ITS SR 3.8.6.3 requires verification of each battery connected cell electrolyte level is greater than or equal to the established limit every 31 days. This changes the CTS by increasing the Frequency of performance of the Surveillances from 92 days to 31 days.

The purpose of CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3 is to ensure the electrolyte level is within the specified limit to ensure the battery plates suffer no physical damage and maintains adequate electron transfer capability. The applicable IEEE 450-1995 standard recommends a Surveillance Frequency of 31 days. The change is acceptable since it will help ensure the battery plates will not suffer physical damage and maintain adequate electron transfer capability. This change is designated as more restrictive because the Surveillance Requirement Frequency has been increased.

RELOCATED SPECIFICATIONS

None

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DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.2.3.2.e and CTS 4.8.2.5.2.e require the performance of a battery performance test. The Surveillance requires a more frequent performance if the battery shows signs of "degradation" or has reached 85% of the service life expected for the application. The CTS further states that degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. ITS SR 3.8.6.6 requires verification of the battery capacity when subjected to a performance discharge test or a modified performance discharge test. The Surveillance is also required more frequently when the battery shows degradation or has reached 85% of the expected life, but the definition of what constitutes "degradation" is not included. This changes the CTS by moving the detail on how degradation is determined 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 SR 3.8.6.6 retains the requirement to verify the battery capacity when subjected to a performance discharge test or a modified performance discharge test. The Surveillance also requires more frequent performance when the battery shows degradation or has reached 85% of the expected life. 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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.3 Action b specifies the compensatory actions for inoperable batteries associated with the Trains A and B 250 VDC electrical power subsystem during MODES 1, 2, 3, and 4. The compensatory action requires restoration within 2 hours before commencing a reactor shutdown. CTS 3.8.2.4 Actions a and b specify the compensatory actions for inoperable batteries associated with the Trains A and B 250 VDC electrical power subsystem during MODES 5 and 6, and (for Unit 1 only) during movement of irradiated fuel. The compensatory actions require immediate actions to suspend certain activities and to commence actions to restore the inoperable equipment to OPERABLE status. CTS 3.8.2.5 Action specifies the compensatory actions for the battery associated with the Train N 250 VDC electrical power subsystem during MODES 1, 2, and 3. The compensatory action is to immediately declare the associated equipment inoperable and take the appropriate actions for an inoperable turbine driven auxiliary feedwater train. In lieu of immediately declaring the associated battery inoperable, the ITS 3.8.6 ACTIONS provide compensatory actions for when battery parameters are not within limits that may be taken prior to declaring the associated battery

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

inoperable. This changes the CTS by adding compensatory actions specifically designed for battery parameters.

The purpose of the ITS 3.8.6 ACTIONS is to 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 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 DBA occurring during the repair period. ACTIONS have been added to allow a short time 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. ITS 3.8.6 ACTION A requires the performance of SR 3.8.4.1 in 2 hours, the performance of SR 3.8.6.1 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. ITS 3.8.6 ACTION B requires the performance of SR 3.8.4.1 in 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. ITS 3.8.6 ACTION C 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 D covers the condition of one or more batteries with pilot cell electrolyte temperature less than the minimum established design limits. ITS 3.8.6 ACTION D 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 batteries in redundant trains with battery parameters not within limits. ITS 3.8.6 ACTION E requires restoration of the battery parameters for battery in one train to within limits within 2 hours. ITS 3.8.6 ACTION F covers the condition when a Required Action and associated Completion Time of any of the above ACTIONS could not be met, or if one or more batteries with one or more battery cells float voltage and float current are not within limits, or if ITS SR 3.8.6.6 is not met. ITS 3.8.6 ACTION F requires the immediate declaration that the associated battery is inoperable. The allowances are considered acceptable since only a short time is allowed to exist with battery parameters not within limits. In addition, when redundant batteries have battery parameters not within limit, only 2 hours is allowed to restore at least one redundant train before declaring the battery 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.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.2.3.2.a.3 and CTS 4.8.2.5.2.a.3 require the verification that the pilot cell voltage is greater than or equal to the specified limit every 7 days. ITS SR 3.8.6.2 requires the verification of each pilot battery cell voltage every

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DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

31 days. This changes the CTS by extending the Surveillance interval for verification of pilot cell voltage from 7 days to 31 days.

The purpose of ITS 3.8.6.2 is to ensure the cell float voltages are equal to or greater than the short term absolute minimum voltage. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change extends the Surveillance Frequency from 7 days to 31 days for verification of pilot cell voltage. This change is acceptable since ITS 5.5.15, "Battery Monitoring and Maintenance Program," has been added which 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 ITS SR 3.8.6.2 limit of 2.07 V. Therefore, since the ITS 5.5.15 program has been added, this change in Frequency is considered acceptable. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.3.2.a.1 and CTS 4.8.2.5.2.a.1 require the verification that the electrolyte level of each pilot cell is between the minimum and maximum level indication marks.
CTS 4.8.2.3.2.a.2 and CTS 4.8.2.5.2.a.2 require the verification that the pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200.
CTS 4.8.2.3.2.b.2 and CTS 4.8.2.5.2.b.2 require the verification that the specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test. ITS 3.8.6 does not include these Surveillances. This changes the CTS by deleting these Surveillances.

The purpose of CTS 4.8.2.3.2.a.1 and CTS 4.8.2.5.2.a.1, the electrolyte level verification, is to ensure the battery cells contain sufficient electrolyte level for electron transfer capability and the purpose of CTS 4.8.2.3.2.a.2, CTS 4.8.2.3.2.b.2, CTS 4.8.2.5.2.a.2, and CTS 4.8.2.5.2.b.2, the specific gravity verification, is to ensure the state of charge of each cell. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. 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. The specified Surveillances have been deleted, however other Surveillances are included which help to ensure the batteries will function as designed. ITS SR 3.8.6.1 (discussed in DOC M.1) requires the verification that each battery float current is ≤ 2 amps every 7 days and ITS SR 3.8.6.3 requires the verification that each battery connected cell electrolyte level is greater than or equal to minimum established design limits every 31 days. IEEE 450-1995, Section 4.5 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. The Frequency for verification of electrolyte level in CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3, for each connected cell, has been increased from every

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

92 days to every 31 days as discussed in DOC M.2. These Surveillances give a better indication of the overall battery conditions. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.a.3 and CTS 4.8.2.5.2.a.3 require the verification that the pilot cell voltage is $\geq$ 2.13 V. CTS 4.8.2.3.2.b.1 and CTS 4.8.2.5.2.b.1 require the verification that the connected cell voltage is $\geq$ 2.13 V. ITS SR 3.8.6.2 requires the verification of each pilot cell voltage is $\geq$ 2.07 V. ITS SR 3.8.6.5 requires the verification that each battery connected cell voltage is $\geq$ 2.07 V. This changes the CTS by reducing the acceptance criteria for pilot cell and battery connected cell voltage limits from $\geq$ 2.13 V to $\geq$ 2.07 V.

The purpose of the proposed Surveillance limit in ITS SR 3.8.6.2 and SR 3.8.6.5 is to ensure the cell voltages are greater than or equal to the short term absolute minimum voltage. This change is acceptable because it has been determined that the relaxed Surveillance Requirement 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 and battery connected cell voltage limits from $\geq$ 2.13 V to $\geq$ 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 5.5.15, "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 Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.5 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3 require the verification that the battery electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark. ITS SR 3.8.6.3 requires the verification that the battery connected cell electrolyte level is greater than or equal to minimum established design limits. This changes the CTS by deleting the specific value for the lower electrolyte level limit and deleting the upper electrolyte level limit requirement.

The purpose of the proposed Surveillance limit in ITS SR 3.8.6.3 is to ensure the battery plates do not suffer physical damage and maintain adequate electron transfer capability. This change is acceptable because it has been determined that the relaxed Surveillance Requirement 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 deleting the specific value for the lower electrolyte level limit and replacing it with the minimum established design limit and deleting the upper electrolyte level limit requirement. This change is acceptable since the proposed level will continue to ensure that the battery and the cells remain OPERABLE to perform its specified safety function. This

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DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.6 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.2.3.2.e requires the performance of a battery performance test on the Trains A and B 250 VDC batteries. CTS 4.8.2.5.2.e requires the performance of a battery performance test on the Train N 250 VDC battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.6.6 requires the same tests. A Note to SR 3.8.6.6 specifies that 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 unit is maintained or enhanced. This changes the CTS by allowing the test to be performed in MODES other than MODE 5 or 6 as long as an assessment determines the safety of the unit is maintained or enhanced.

The purpose of the shutdown restriction in CTS 4.8.2.3.2.e and CTS 4.8.2.5.2.e is to ensure the batteries are not tested in a condition that can compromise unit safety. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the strict restriction on unit conditions. 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, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L.7 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.e requires the performance of a battery performance test on the Trains A and B 250 VDC batteries. CTS 4.8.2.5.2.e requires the performance of a battery performance test on the Train N 250 VDC battery. ITS SR 3.8.6.6 requires the performance of a performance discharge test or a modified performance discharge test. This changes the CTS by adding the allowance to perform a modified performance discharge test instead of the performance discharge test.

The purpose of ITS SR 3.8.6.6 is to verify the capacity is $\geq$ 80% of the manufacturer's rating. This change is acceptable because it has been determined that the relaxed Surveillance Requirement 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 adding the allowance to perform a modified performance discharge test instead of the performance discharge test. The modified performance discharge test is performed by testing the battery using the service test profile for the first 4 hours followed by the performance discharge test profile for the remainder of the test. Since the amps removed during the first four hours can be accurately calculated, the test rate can be changed to that of the modified performance discharge test without compromising the results of the performance discharge test. This method is consistent with IEEE 450-2002, Annex I (Type 3). This change is designated as

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less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

- REVIEWER'S NOTE -

~~Licensees must implement a program, as specified in Specification 5.5.17, to monitor battery parameters that is based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice For Maintenance, Testing, And Replacement Of Vented Lead-Acid Batteries For Stationary Applications."~~ 1

DOC A.2

LCO 3.8.6 Battery parameters for Train A and Train B batteries shall be within limits. 2

INSERT 1

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC L.1 A. One [or two] battery/ies on one train with one or more battery cells float voltage < [2.07] V. (more)	A.1	Perform SR 3.8.4.1.	2 hours 3
	AND		
	A.2	Perform SR 3.8.6.1.	2 hours
	AND		
	A.3	Restore affected cell voltage ≥ [2.07] V.	24 hours 3
(more) B. One [or two] battery/ies on one train with float current > [2] amps. DOC L.1	B.1	Perform SR 3.8.4.1.	2 hours 3
	AND		
	B.2	Restore battery float current to ≤ [2] amps.	[12] hours 3

2

INSERT 1

, Train N, and Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B

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ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
DOC L.1	- NOTE - Required Action C.2 shall be completed if electrolyte level was below the top of plates.		- NOTE - Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates.		
more	C. One ~~or two~~ battery ies ~~on one train~~ with one or more cells electrolyte level less than minimum established design limits.	C.1	Restore electrolyte level to above top of plates	8 hours	3
		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 L.1 more	D. One ~~or two~~ battery ies ~~on one train~~ with pilot cell electrolyte temperature less than minimum established design limits.	D.1	Restore battery pilot cell temperature to greater than or equal to minimum established design limits	12 hours	3
DOC L.1	E. ~~One or more~~ batteries in redundant trains with battery parameters not within limits.	E.1	Restore battery parameters for batteries y in one train to within limits.	2 hours	2

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC L.1	F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR more One or two batteries on one train with one or more battery cells float voltage < 2.07 V and float current > 2 amps. OR SR 3.8.6.6 not met.	F.1 Declare associated battery inoperable.	Immediately	3 5

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
DOC M.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 battery float current is ≤ 2 amps.	7 days	3
4.8.2.3.2.a.3, 4.8.2.5.2.a.3	SR 3.8.6.2	Verify each battery pilot cell voltage is ≥ 2.07 V.	31 days	3
4.8.2.3.2.b.3, 4.8.2.5.2.b.3	SR 3.8.6.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	31 days	
DOC M.1	SR 3.8.6.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	31 days	

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.8.2.3.2.b.1, 4.8.2.5.2.b.1	SR 3.8.6.5	Verify each battery connected cell voltage is ≥ [2.07] V.	92 days	3
4.8.2.3.2.e, 4.8.2.5.2.e	SR 3.8.6.6	- NOTE - This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR.	INSERT 2	4
		Verify battery capacity is ≥ [80%] of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation, or has reached [85]% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached [85]% of the expected life with capacity ≥ 100% of manufacturer's rating	3

4

INSERT 2

However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ unit is maintained or enhanced.

6

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.6, BATTERY PARAMETERS

1. The "Reviewer Note" has been deleted since it is not intended to be retained in the plant specific ITS submittal.

2. ISTS LCO 3.8.6 has been modified to be consistent with the requirements specified in ITS LCO 3.8.4. Additional requirements were added to ISTS LCO 3.8.6 to ensure the appropriate DC Sources are OPERABLE. In addition, due to the addition of these DC Sources, ISTS 3.8.6 Conditions A, B, C, D, and F have been modified to allow batteries in two trains to have battery parameters not within limits. ITS 3.8.6 ACTION E will ensure that if batteries in redundant trains have battery parameters not within limits, the restoration time is properly limited consistent with the intent of the ISTS 3.8.6 ACTIONS.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

5. ISTS 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. Thus in the ISTS, LCO 3.0.3 would have to be entered. To preclude an LCO 3.0.3 entry, ISTS 3.8.6 Condition F has been modified to cover the case when SR 3.8.6.6 is not met. ACTION F will require the associated battery to be declared inoperable. This is also consistent with the current licensing basis.

6. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Parameters

BASES

electrical 7

1 INSERT 1

BACKGROUND

This LCO delineates the limits on battery float current as well as electrolyte temperature, level, and float voltage for the DC power subsystem batteries. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources - Operating," and LCO 3.8.5, "DC Sources - Shutdown." In addition to the limitations of this Specification, the ~~licensee controlled program~~ also implements a program specified in Specification 5.5.[17] for monitoring various battery parameters that is based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice For Maintenance, Testing, And Replacement Of Vented Lead-Acid Batteries For Stationary Applications" (Ref. 1).

7 cell 15 3

The battery cells are of flooded lead acid construction with a nominal specific gravity of [1.215]. ~~This specific gravity corresponds to an open circuit battery voltage of approximately 120 V for [58] cell battery (i.e., cell voltage of [2.065] volts per cell (Vpc)).~~ The open circuit voltage is the voltage maintained when there is no charging or discharging. Once fully charged with its open circuit voltage ~~≥ [2.065] 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] 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 9 9 some time 1 1 2 9

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, ~~Chapter [6] (Ref. 1) and~~ Chapter [15] (Ref. 2), assume Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation.

U 14 2 1

INSERT 2

~~The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions, in the event of:~~

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

8

1

INSERT 1

Battery Monitoring and Maintenance Program

8

INSERT 2

The specific Applicable Safety Analyses for the DC Electrical Power System are provided in the Bases for LCO 3.8.4 and LCO 3.8.5.

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. A worst case single failure. 8

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

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~~ transient 2 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~~ INSERT 3 1 is conducted as specified in Specification 5.5.~~17~~ 15. 3

APPLICABILITY

The battery parameters are required solely for the support of the associated DC electrical power subsystems. Therefore, battery parameter limits are only required when the DC electrical power ~~source~~ subsystem is required to be OPERABLE. Refer to the Applicability discussion in Bases for LCO 3.8.4 and LCO 3.8.5. 7

ACTIONS

A.1, A.2, and A.3

With one or more cells in one or more batteries ~~in one train~~ 3 < [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

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.

1

INSERT 3

Battery Monitoring and Maintenance Program

BASES

ACTIONS (continued)

B.1 and B.2

One or more batteries ~~in one train~~ with float > [2] amps indicates that a partial discharge of the battery capacity has occurred. This may be due to a temporary loss of a battery charger or possibly due to one or more battery cells in a low voltage condition reflecting some loss of capacity. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage. If the terminal voltage is found to be less than the minimum established float voltage there are two possibilities, the battery charger is inoperable or is operating in the current limit mode. ~~Condition A addresses charger inoperability.~~ If the charger is operating in the current limit mode after 2 hours that is an indication that the battery has been substantially discharged and likely cannot perform its required design functions. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action B.2). The battery must therefore be declared inoperable.

3 1

7

1

If the float voltage is found to be satisfactory ~~but there are one or more battery cells with float voltage less than [2.07] V, the associated "OR" statement in Condition F is applicable and the battery must be declared inoperable immediately. If float voltage is satisfactory and there are no cells less than [2.07] V~~ there is good assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action B.2) from any discharge that might have occurred due to a temporary loss of the battery charger.

7

1

~~- 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

A discharged battery with float voltage (the charger setpoint) across its terminals indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function

BASES

ACTIONS (continued)

of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within [12] hours, avoiding a premature shutdown with its own attendant risk. 1

If the condition is due to one or more cells in a low voltage condition but still greater than [2.07] V and float voltage is found to be satisfactory, this is not indication of a substantially discharged battery and [12] hours is a reasonable time prior to declaring the battery inoperable. 1 1

Since Required Action B.1 only specifies "perform," a failure of SR 3.8.4.1 acceptance criteria does not result in the Required Action not met. However, if SR 3.8.4.1 is failed, the appropriate Condition(s), depending on the cause of the failure, is entered.

C.1, C.2, and C.3

With one or more batteries in one train with one or more cells electrolyte level above the top of the plates, but below the minimum established design limits, the battery still retains sufficient capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of electrolyte level not met. Within 31 days the minimum established design limits for electrolyte level must be re-established. 3

15

With electrolyte level below the top of the plates there is a potential for dryout and plate degradation. Required Actions C.1 and C.2 address this potential (as well as provisions in Specification 5.5.17, "Battery Monitoring and Maintenance Program"). They are modified by a note that indicates they are only applicable if electrolyte level is below the top of the plates. Within 8 hours level is required to be restored to above the top of the plates. The Required Action C.2 requirement to verify that there is no leakage by visual inspection and the Specification 5.5.17.b item to initiate action to equalize and test in accordance with manufacturer's recommendation are taken from Annex D of IEEE Standard 450-1995. They are performed following the restoration of the electrolyte level to above the top of the plates. Based on the results of the manufacturer's recommended testing the battery(ies) may have to be declared inoperable and the affected cell(s) replaced. 11 11 3 5 15 3 1

BASES

ACTIONS (continued)

D.1

With one or more batteries in one train with pilot cell temperature less than the minimum established design limits, 12 hours is allowed to restore the temperature to within limits. A low electrolyte temperature limits the current and power available. Since the battery is sized with margin, while battery capacity is degraded, sufficient capacity exists to perform the intended function and the affected battery is not required to be considered inoperable solely as a result of the pilot cell temperature not met.

E.1

With one or more batteries in redundant trains with battery parameters not within limits there is not sufficient assurance that battery capacity has not been affected to the degree that the batteries can still perform their required function, given that redundant batteries are involved. With redundant batteries involved this potential could result in a total loss of function on multiple systems that rely upon the batteries. The longer Completion Times specified for battery parameters on non-redundant batteries not within limits are therefore not appropriate, and the parameters must be restored to within limits on at least one train within 2 hours. 3

F.1

3

With one or more batteries with any battery parameter outside the allowances of the Required Actions for Condition A, B, C, D, or E, INSERT 3A sufficient capacity to supply the maximum expected load requirement is not assured and the corresponding battery must be declared inoperable. Additionally, discovering one or more batteries in one train with one or more battery cells float voltage less than [2.07] V and float current greater than [2] amps indicates that the battery capacity may not be sufficient to perform the intended functions. The battery must therefore be declared inoperable immediately. 1

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

3 **INSERT 3A**

or failure of the battery performance discharge test (SR 3.8.6.6),

BASES

SURVEILLANCE REQUIREMENTS (continued) more conservative than the recommendations of 2

a charged battery. Use of float current to determine the state of charge of the battery is consistent with IEEE-450 (Ref. 1). The 7 day Frequency is consistent with IEEE-450 (Ref. 1).

This SR is modified by a Note that states the float current requirement is not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. When this float voltage is not maintained the Required Actions of LCO 3.8.4 ACTION A are being taken, which provide the necessary and appropriate verifications of the battery condition. Furthermore, the float current limit of 2 amps is established based on the nominal float voltage value and is not directly applicable when this voltage is not maintained. 1

INSERT 4 1

SR 3.8.6.2 and SR 3.8.6.5

Optimal long term battery performance is obtained by maintaining a float voltage greater than or equal to the minimum established design limits provided by the battery manufacturer, which corresponds to 130.5 V at the battery terminals, or 2.20 Vpc. This provides adequate over-potential, which limits the formation of lead sulfate and self discharge, which could eventually render the battery inoperable. Float voltages in this range or less, but greater than 2.07 Vpc, are addressed in Specification 5.5.17. SRs 3.8.6.2 and 3.8.6.5 require verification that the cell float voltages are equal to or greater than the short term absolute minimum voltage of 2.07 V. The Frequency for cell voltage verification every 31 days for pilot cell and 92 days for each connected cell is consistent with IEEE-450 (Ref. 1). 1 2 1 3 15 1

SR 3.8.6.3

INSERT 4A 2

The limit specified for electrolyte level ensures that the plates suffer no physical damage and maintains adequate electron transfer capability. The Frequency is consistent with IEEE-450 (Ref. 1).

INSERT 5 1

SR 3.8.6.4

This Surveillance verifies that the pilot cell temperature is greater than or equal to the minimum established design limit (i.e., 40°F). Pilot cell electrolyte temperature is maintained above this temperature to assure the battery can provided the required current and voltage to meet the design requirements. Temperatures lower than assumed in battery sizing calculations act to inhibit or reduce battery capacity. The Frequency is consistent with IEEE-450 (Ref. 1). 1

1

INSERT 4

257.5 V for a 116 cell battery and 259.7 V for a 117 cell battery

2

INSERT 4A

(i.e., greater than or equal to the low level mark)

1

INSERT 5

60ºF for the Train A and Train B 250 VDC batteries and 45ºF for the Train N 250 VDC battery

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. as specified in IEEE-450 (Ref. 1) (2)

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. performance discharge (2)

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. INSERT 6 discharge modified (5) (2)

The acceptance criteria for this ~~Surveillance~~ (3) are consistent with IEEE-450 (Ref. ~~3~~) and IEEE-485 (Ref. ~~4~~). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements. Furthermore, the battery is sized to meet the assumed duty cycle loads when the battery design capacity reaches this ~~(80)~~% limit. (1) (1) (2) (1)

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery

2 **INSERT 6**

However, currently the modified performance discharge test is performed by testing the battery using the service test profile for the first 4 hours followed by the performance discharge test profile for the remainder of the test.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's ratings. Degradation is indicated, according to IEEE-450 (Ref. 3), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 3).

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

12 month and 60 month; 90% of; INSERT 7; , 3, or 4; INSERT 8; 1997; 14; (1) (2) (5) (6) (7)

REFERENCES

1. FSAR, Chapter [6].

2. FSAR, Chapter [15].

3. IEEE-450-[1995].

4. IEEE-485-[1983], June 1983.

1 **INSERT 7**

The 24 month Frequency is derived from the recommendations of IEEE-450 (Ref. 1).

6 **INSERT 8**

Credit may be taken for unplanned events that satisfy this SR.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.6 BASES, BATTERY PARAMETERS

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

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. Changes are made to reflect those changes made to the Specifications.

4. The “Reviewer’s Note” has been deleted since it is not intended to be included in the plant specific ITS submittals.

5. Grammatical/editorial/spelling error corrected.

6. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

7. Changes are made to reflect the Specification.

8. ISTS 3.8.6 is applicable when associated DC electrical power subsystems are required to be OPERABLE. The DC electrical power subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 (ISTS 3.8.4) and in MODES 5 and 6 and during movement of irradiated fuel assemblies (ISTS 3.8.5). The Applicable Safety Analyses Bases only discusses accident analyses related to MODES 1, 2, 3, and 4; it does not discuss events in MODES 5 and 6 and during movement of irradiated fuel assemblies. Therefore, for completeness, the Applicable Safety Analyses for MODES 5 and 6 and during movement of irradiated fuel assemblies needs to be discussed. However, in lieu of adding this large description from the ISTS 3.8.5 Bases, the MODES 1, 2, 3, and 4 description has been deleted and in its place a statement has been added referencing the Applicable Safety Analyses Bases for ITS 3.8.4 and ITS 3.8.5. This is consistent with the manner in which similar information in one ISTS Bases is referenced in another ISTS Bases (e.g., the ISTS 3.8.5 Background Bases references ISTS 3.8.4 Background Bases).

9. These battery design values have been deleted because they are more specific than necessary and are not required to provide sufficient background for this Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.6, BATTERY PARAMETERS

There are no specific NSHC discussions for this Specification.

ATTACHMENT 7

ITS 3.8.7, Inverters - Operating

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

ITS 3.8.7

A.1

ITS

ELECTRICAL POWER SYSTEMS

~~3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS~~

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses: — See ITS 3.8.9

4160-volt Emergency Bus #T 11A & T 11B

4160-volt Emergency Bus #T 11C & T 11D

600-volt Emergency Bus #11A & 11B — See ITS 3.8.9

600-volt Emergency Bus #11C & 11D

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

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

ACTION: — One — Add proposed Required Action A.1 Note — 24 — L.1

ACTION A — With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY

ACTION C — within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B — M.1

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1 — 4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability. — M.2

Train A and B — s shall be OPERABLE — LA.1

LCO 3.8.7 — *Energized from its associated inverter connected to a DC bus.

ITS 3.8.7

A.1

ITS

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses:

See ITS 3.8.9

4160-volt Emergency Bus #T 21A & T 21B

4160-volt Emergency Bus #T 21C & T 21D

600-volt Emergency Bus #21A & 21B

600-volt Emergency Bus #21C & 21D

See ITS 3.8.9

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

APPLICABILITY: MODES 1, 2, 3 and 4.

M.1

ACTION:

One

Add proposed Required Action A.1 Note

24

L.1

ACTION A With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY

ACTION C within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B

M.1

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1 4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

M.2

Train A and B

s shall be OPERABLE

LA.1

LCO 3.8.7

*Energized from its associated inverter connected to a DC bus.

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DISCUSSION OF CHANGES
ITS 3.8.7, INVERTERS - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

MORE RESTRICTIVE CHANGES

M.1 The CTS 3.8.2.1 Action specifies the compensatory actions for one or more inoperable 120 VAC inverters. The compensatory action is to restore the inoperable inverters to OPERABLE status within 8 hours. ITS 3.8.7 ACTION A covers the condition of one inoperable Train A or Train B inverter. ITS 3.8.7 ACTION A requires the restoration of the inoperable inverter to OPERABLE status within 24 hours. ITS 3.8.7 ACTION B covers the condition of two inverters in one train inoperable, and requires restoration of one inverter to OPERABLE status within 6 hours. This changes the CTS by: a) requiring one inverter to be restored to OPERABLE status within 6 hours instead of 8 hours when two inverters are inoperable in the same train; and b) requiring entry into LCO 3.0.3 with two or more inverters in different trains inoperable. The change covering the extension in time for restoration of one inoperable inverter is discussed in DOC L.1.

The purpose of ITS 3.8.7 ACTIONS A and B is to limit the time the unit may operate with inoperable inverters. With inverters in different trains inoperable, the associated 120 VAC vital buses may be powered by its auxiliary power system source or its associated regulated 600/120 VAC transformer via the inverter. These sources will not provide an uninterrruptible source for the required equipment during a loss of offsite power. In this situation, an immediate shutdown is appropriate. This change is designated as more restrictive because when one or more inverters in different trains are found to be inoperable, LCO 3.0.3 must be entered immediately.

M.2 CTS 4.8.2.1 requires the specified AC buses to be determined OPERABLE every 7 days and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.7.1 requires the verification of correct inverter voltage, frequency, and alignment to the associated 120 VAC vital buses every 7 days. This changes the CTS by requiring the specific verification of the inverter voltage and frequency every 7 days.

The purpose of this change is to ensure the instrumentation channels are provided with proper voltage from the AC vital bus when powered by the associated inverter. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required inverters. Proper voltage and frequency from the inverters to the vital AC buses ensures proper voltage and frequency is supplied to the instrumentation channels that provide inputs to the

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DISCUSSION OF CHANGES
ITS 3.8.7, INVERTERS - OPERATING

Reactor Trip System and Engineered Safety Features Actuation System. This change is designated as more restrictive because the ITS requires verification of the correct voltage and frequency, where the CTS does not provide explicit requirements for the inverter.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.1 footnote * states that each 120 VAC vital bus must be energized from its associated inverter connected to a DC bus. ITS LCO 3.8.7 requires the Train A and Train B inverters to be OPERABLE. This changes the CTS by moving the procedural detail that the inverters must be "connected to a DC bus" and that they must be energizing the associated 120 VAC vital buses from the CTS to the ITS Bases.

The removal of these details for meeting Technical Specifications 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 (LCO 3.8.7) that the Train A and Train B inverters shall be OPERABLE and ITS SR 3.8.7.1 requires correct inverter voltage, frequency, and alignment to the associated 120 VAC vital buses. The Bases includes the detail that the inverters must be supplied by the associated Train A or Train B 250 VDC bus and that the 120 VAC vital buses must be energized from the inverters. 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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.2.1 Action specifies the compensatory for one or more inoperable 120 VAC inverters. The compensatory action is to restore the inoperable inverters to OPERABLE status within 8 hours. ITS 3.8.7 ACTION A covers the condition of one Train A or Train B inoperable inverter. ITS 3.8.7 ACTION A requires the restoration of the inoperable inverter within 24 hours. However, the additional 16 hours is only allowed if the associated 120 VAC vital bus remains energized. This changes the CTS by allowing one inverter to be inoperable for 24 hours, provided the associated 120 VAC vital bus remains energized. The change to the number of inverters that can be inoperable is discussed in DOC M.1.

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DISCUSSION OF CHANGES
ITS 3.8.7, INVERTERS - OPERATING

The purpose of the CTS 3.8.2.1 Action is to limit the time the 120 VAC inverters can be inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. This change extends the time an inverter can be inoperable from 8 hours to 24 hours. Experience has shown that a 24 hour restoration time for an inoperable inverter is appropriate, as long as the associated 120 VAC vital bus can be energized from an auxiliary power system source or the regulated 600/120 VAC transformer via the inverter. This is ensured by the added Note to ACTION A, which requires entry into applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," if the 120 VAC vital bus is de-energized. During this additional 16 hours, the 120 VAC vital bus is energized and can perform its design function during a LOCA event, assuming no loss of offsite power. If the associated 120 VAC vital bus is de-energized, ITS 3.8.9 ACTION B will require it to be re-energized within 8 hours, consistent with the time required in the CTS 3.8.2.1 Action. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters - Operating

LCO 3.8.2.1 Footnote *

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] energizedfrom [its/their] [Class 1E constant voltage sourcetransformers] [inverter using internal AC source], and~~

~~b. All other AC vital buses are energized from theirassociated OPERABLE inverters.]~~

(2)

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ~~required~~ inverter inoperable.	A.1	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any 120V AC vital bus de-energized. Restore inverter to OPERABLE status.	 24 hours INSERT 1
C ~~B~~. Required Action and associated Completion Time not met.	C ~~B~~.1 AND	Be in MODE 3.	6 hours

Action (1) (3) (6)

Action (6)

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3.8.7

6

INSERT 1

DOC M.1	B. Two inverters in one train inoperable.	B.1 Restore one inverter to OPERABLE status.	6 hours

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
Action	C.2	Be in MODE 5.	36 hours

6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.2.1 SR 3.8.7.1	Verify, for each inverter, correct inverter voltage, frequency, and alignment to ~~required~~ the associated 120 V AC vital buses.	7 days

5 4 5 3

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.7, INVERTERS - OPERATING

1. The word "required" has been deleted from the LCO and Condition A since all Train A and Train B inverters are required.

2. This allowance of the ISTS LCO 3.8.7 Note has been deleted because CNP does not need to disconnect the 120 VAC vital bus during an equalizing charge.

3. Changes made to be consistent with changes made in another Specification.

4. The brackets are removed and the proper plant specific information/value is provided.

5. The SR has been modified to reflect that each inverter must have proper voltage, frequency, and alignment to its associated 120 VAC vital bus.

6. ITS 3.8.7 Condition B has been added to allow two inverters on the same train to be inoperable for up to 6 hours. The CNP design incorporates two 120 VAC inverters on each train. As written, ISTS 3.8.7 requires entry into LCO 3.0.3 when two inverters in the same train are inoperable since no ACTION exists for when more than one inverter is inoperable. The inoperability of two inverters in the same train does not place the unit outside of its design basis because the other train remains OPERABLE to support safeguards operation. Therefore, entry into LCO 3.0.3 is not necessary in this condition. An allowed outage time of 6 hours has been selected to be consistent with the allowed outage time in ISTS 3.3.1 for a single inoperable Reactor Trip System train. This is also more conservative than the 8 hours allowed in the CTS when two inverters are inoperable. In addition, the subsequent ACTION has been renumbered.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.7 Inverters - Operating

BASES

BACKGROUND

120 V   associated 120 VAC   120 V   INSERT 1   each   INSERT 2   1

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 bus~~es~~. The inverters can be powered from an ~~internal AC source/rectifier or from the station battery~~. The ~~station battery~~ provides an uninterruptible power source for the instrumentation and controls for the Reactor ~~Protective~~ System (R~~P~~S) and the Engineered Safety Feature Actuation System (ESFAS). Specific details on inverters and their operating characteristics are found in the FSAR, Chapter [8] (Ref. 1).

INSERT 3   INSERT 4   inverter   T   Trip   4   1   2

APPLICABLE SAFETY ANALYSES

14   2   1   UFSAR   2   T   1

The initial conditions of Design Basis Accident (DBA) and transient analyses in ~~the FSAR, Chapter [6] (Ref. 2) and~~ Chapter ~~[15]~~ (Ref. ~~3~~), assume Engineered Safety Feature systems are OPERABLE. The inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the R~~P~~S 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.

120 V   1

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:

3

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

b. A worst case single failure.

electrical   Inverters - Operating   ies   1

Inverters are a part of the distribution system and, as such, satisf~~y~~ Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

120 V   1   1

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.

transient

1

INSERT 1

bus electrical power distribution subsystems

1

INSERT 2

There are two inverters per train (i.e., Train A and Train B), for a total of four inverters.

1

INSERT 3

Train A or Train B 250 VDC bus or a regulated 600/120 VAC transformer

1

INSERT 4

Each inverter is normally supplied from the Train A or Train B 250 VDC bus. If the associated Train A or Train B 250 VDC bus fails or if the DC to AC section of the inverter fails, the AC vital bus is transferred to the regulated 600/120 VAC transformer.

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BASES

LCO (continued)

Maintaining the required inverters OPERABLE ensures that the redundancy incorporated into the design of the RPS and ESFAS instrumentation and controls is maintained. The four inverters (two per train) ensure an uninterruptible supply of AC electrical power to the AC vital buses even if the 4.16 kV safety buses are de-energized. T 1 120 V 1 emergency 4 1

Operable inverters require the associated vital bus to be powered by the inverter with output voltage and frequency within tolerances, and power input to the inverter from a 125 VDC ~~station battery. Alternatively, power supply may be from an internal AC source via rectifier as long as the station battery is available as the uninterruptible power supply.~~ INSERT 5 bus 2

~~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.~~ 4

~~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 anticipated operational transients 1

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

1 **INSERT 5**

Train A or Train B 250

BASES

APPLICABILITY (continued)

INSERT 6 — 5

Inverter requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.8, "Inverters - Shutdown."

ACTIONS

A.1

Train A or Train B — 4

120V — 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~~. INSERT 7 — 2 — 6

INSERT 8

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~~. — 1

INSERT 8A

taken

Required Action A.1 allows 24 hours to fix the inoperable inverter and return it to service. The 24 hour limit is based upon engineering judgment, taking into consideration the time required to repair an inverter and the additional risk to which the unit is exposed because of the inverter inoperability. This has to be balanced against the risk of an immediate shutdown, along with the potential challenges to safety systems such a shutdown might entail. When the AC vital bus is powered from its ~~constant voltage source~~, 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.

120V — 1

INSERT 8B — 1

120V — 1

INSERT 9

C

~~B~~.1 and ~~B~~.2

Train A or Train B inverter(s) — 4 — 4

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

unit — 1

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

the 120 V — 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

associated — 4

INSERT 10 — 1

5 **INSERT 6**

and other conditions in which the inverters are required

2 **INSERT 7**

regulated 600/120 VAC transformer via the inverter

1 **INSERT 8**

LCO 3.8.9, “Distribution Systems - Operating” addresses this action however, pursuant to LCO 3.0.6, this action would not be entered even if the 120 VAC vital bus were de-energized.

1 **INSERT 8A**

proper action for a de-energized 120 VAC

1 **INSERT 8B**

regulated 600/120 VAC transformer

4

INSERT 9

B.1

With two inverters in the same train inoperable, the remaining inverters are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in one of the two remaining inverters could result in the minimum ESF functions not being supported. Therefore, one of the inverters must be restored to OPERABLE status within 6 hours.

The 6 hour Completion Time is consistent with that allowed for an inoperable RTS train and an inoperable ESFAS train, since the inverters support the 120 VAC vital buses, which in turn support the RTS and ESFAS trains.

1

INSERT 10

Each inverter must be connected to its associated 250 VDC bus.

BASES

SURVEILLANCE REQUIREMENTS (continued) 120 V

(T) 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. (1)

REFERENCES

1. U FSAR, Chapter 8. (1) (2)
2. ~~FSAR, Chapter [6].~~ (1)
3. U FSAR, Chapter ~~15~~ 14. (1) (2)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.7 BASES, INVERTERS - OPERATING

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

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

4. Changes are made to reflect those changes made to the ISTS.

5. Changes are made to be consistent with the Specifications.

6. Editorial correction made.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.7, INVERTERS - OPERATING

There are no specific NSHC discussions for this Specification.

ATTACHMENT 8

ITS 3.8.8, Inverters - Shutdown

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

ITS 3.8.8

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

1 - 4160-volt Emergency Bus, and

1 - 600-volt Emergency Bus, and

2 - *120 volt A.C. Vital Busses.

See ITS 3.8.10

A.4

APPLICABILITY MODES 5 and 6, and during movement of irradiated fuel.

ACTION: Add proposed ACTIONS NOTE A.2

ACTION A

With less than the above complement of A.C. busses OPERABLE and energized,

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ additions that could result in loss of required SDM or boron concentration

L.1

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

M.1

LA.1

Two

s shall be OPERABLE

LCO 3.8.8

* ~~Energized~~ from its associated inverter ~~connected to a DC bus~~.

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

1 - 4160-volt Emergency Bus, and

1 - 600-volt Emergency Bus, and

2 - *120-volt A.C. Vital Busses.

See ITS 3.8.10

A.3

APPLICABILITY: MODES 5 and 6. During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

ACTION: Add proposed ACTIONS NOTE

A.2

ACTION A

With less than the above complement of A.C. busses OPERABLE and energized.

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ additions that could result in loss of required SDM or boron concentration

L.1

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1 4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

M.1

LA.1

Two

s shall be OPERABLE

LCO 3.8.8 * ~~Energized~~ from its associated inverter ~~connected to a DC bus.~~

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 Unit 1 CTS 3.8.2.2 is applicable during MODES 5 and 6, and during the movement of irradiated fuel. Unit 2 CTS 3.8.2.2 is applicable during MODES 5 and 6. ITS 3.8.8 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. However, 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 Note to the ACTIONS stating that LCO 3.0.3 is not applicable. The change in the Applicability is discussed in DOCs A.3 and A.4.

The purpose of CTS 3.8.2.2 is to ensure that at least two inverters are OPERABLE to support equipment required to be OPERABLE. 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 since defaulting to LCO 3.0.3 would require the reactor to be shutdown, but would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as administrative as it is a clarification of the intent of CTS 3.0.3 that does not result in a technical change to the CTS.

A.3 (Unit 2 only) CTS 3.8.2.2 is applicable during MODES 5 and 6. However, CTS 3.8.2.2 Action a requires movement of irradiated fuel assemblies to be suspended if the required inverter(s) are inoperable. ITS 3.8.8 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This changes the Unit 2 CTS by adding the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment.

The purpose of CTS 3.8.2.2 is to ensure that at least two inverters are OPERABLE to support equipment required to be OPERABLE. This change adds the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This Applicability is consistent with the Applicability of CTS 3.8.2.2 for Unit 1 and consistent with the CTS 3.8.2.2 Actions of Unit 2, which states to suspend movement of irradiated fuel when the required inverters are inoperable. This change is designated as administrative as it is a clarification of the intent of Unit 2 CTS 3.8.2.2 that does not result in a technical change to the Unit 2 CTS.

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

A.4 (Unit 1 only) CTS 3.8.2.2 Applicability includes "during movement of irradiated fuel." ITS 3.8.8 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment." This changes the Unit 1 CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.8.2.2, with respect to fuel handling, is to ensure adequate inverters are available to power equipment required to mitigate a fuel handling accident. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, instead of the current wording which just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the Unit 1 CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.2.2 requires the specified 120 VAC vital buses to be determined OPERABLE every 7 days and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.8.1 requires the verification of correct required voltage, frequency, and alignment to the associated 120 VAC vital bus every 7 days. This changes the CTS by requiring the specific verification of the inverter voltage and frequency every 7 days.

The purpose of this change is to ensure the instrumentation channels are provided with proper voltage and frequency from the AC vital bus when powered by the associated inverter. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required inverters. Proper voltage from the inverters to the vital AC buses ensures proper voltage is supplied to the instrumentation channels. This change is designated as more restrictive because the ITS requires verification of the correct voltage and frequency, where the CTS does not specify these requirements for the inverters.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.2 footnote * states that each required 120 VAC vital bus must be energized from its associated inverter connected to a DC bus. ITS LCO 3.8.8 requires two inverters to be OPERABLE to support one train of the 120 VAC vital electrical distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown." This changes the CTS by moving the procedural detail that the inverters must be "connected to a DC bus" and that they must be energizing the associated 120 VAC vital buses from the CTS to the ITS Bases.

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

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. ITS LCO 3.8.8 still retains the requirement that two inverters must be OPERABLE to support one train of the 120 VAC vital electrical distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown," and ITS SR 3.8.8.1 requires correct inverter voltage, frequency, and alignment to the associated 120 VAC vital bus. The Bases include the detail that the inverters must be supplied by the associated Train A or Train B 250 VDC bus and that the 120 VAC vital buses must be energized from the inverters. 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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 Action a specifies the compensatory actions for a required inoperable AC electrical distribution subsystem. These actions apply to one or more required inoperable inverters. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.8 Required Action A.3 requires the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50ºF or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of the CTS 3.8.2.2 Action a is to suspend any positive reactivity additions that could affect the SDM of the reactor core. 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 DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water).

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DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross-reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50ºF or less in any one-hour period in MODE 5. This limitation has been deleted. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters - Shutdown

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)

LCO 3.8.2.2 Footnote * Two INSERT 1 (2)

~~[One]~~ inverter~~[s]~~ 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] inverter to be OPERABLE. The "[or more]" optional wording in Condition A is also eliminated for this case. The first option above is adopted for plants that have a licensing basis (CTS) requiring the same level of DC electrical power subsystem/inverter support as is required for power operating conditions.~~ (1)

INSERT 2 (4)

APPLICABILITY: MODES 5 and 6,
During movement of ~~[recently]~~ irradiated fuel assemblies. (3)

ACTIONS

- NOTE -

DOC A.2 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.~~ ~~OR~~	~~Immediately~~ (1)
	A.~~2~~1 Suspend CORE ALTERATIONS.	Immediately (1)
	AND	(1)

2 **INSERT 1**

to support one train of the 120 VAC vital electrical distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown"

4 **INSERT 2**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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CTS

Action

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.4 Initiate action to restore required inverters to OPERABLE status.	Immediately

3 1

1

1

1

1

4.8.2.2
Footnote **

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify, for each required inverter, correct inverter voltage, frequency, and alignments to [required] the associated 120 V AC vital buses.	7 days

2 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.8, INVERTERS - SHUTDOWN

1. The bracketed optional ISTS LCO 3.8.8 and "Reviewer's Note" have been deleted because the current licensing basis only requires two inverters to be OPERABLE. ISTS 3.8.8 Required Action A.1 provides an option to declare affected required feature(s) inoperable with one or more required inverters inoperable. The ISTS Bases states that this is acceptable since the remaining inverters may be capable of supporting sufficient features to allow continuation of CORE ALTERATIONS and fuel movement. Therefore, this Required Action assumes all four inverters are required by the LCO. This option has been deleted since only two Train A or two Train B inverters are required to be OPERABLE by the LCO. The subsequent Required Actions have been renumbered and modified, as applicable.

2. The second option of ISTS LCO 3.8.8 is not specific as to what the 120 VAC inverters must be powering. The LCO has been modified to require two inverters to be powering one train of the 120 VAC vital bus(es) required by LCO 3.8.10. In addition, SR 3.8.8.1 has been modified to reflect that all inverters at the unit are not required to be OPERABLE and that each required inverter must be aligned to the associated 120 VAC vital bus.

3. The brackets are removed and the proper plant specific information/value is provided.

4. The Applicability has been clarified, since CNP has two units and irradiated fuel movement can occur in three different locations.

Improved Standard Technical Specifications (ISTS) Bases Markup
and 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

14 1 1 2

The initial conditions of Design Basis Accident (DBA) and transient analyses in UFSAR ~~the FSAR, Chapter [6] (Ref. 1) and~~ Chapter ~~[15]~~ (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 Trip ~~Protective~~ System and Engineered Safety Features Actuation System instrumentation and controls so that the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded. 1 3

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. 7

The OPERABILITY of two ~~the minimum~~ inverters to the required ~~each~~ AC vital bus during MODES 5 and 6 INSERT 1 ensures that: 4

a. The unit can be maintained in the shutdown or refueling condition for extended periods; 5

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and 5

c. Adequate power is available to mitigate events postulated during shutdown, such as a fuel handling accident ~~[involving handling recently irradiated fuel. Due to radioactive decay, the AC and DC inverters are only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days).]~~ 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. The rationale for this is based on the fact that many ~~Design Basis Accidents (~~DBAs~~)~~ that are analyzed in MODES ~~[~~1, 2, 3, and 4~~]~~ have no specific analyses in MODES ~~[~~5 and 6~~]~~ because the # energy contained 3 2 6

4

INSERT 1

and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABLE SAFETY ANALYSES (continued)

within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ 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 ~~S~~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. 3 6

The inverters were previously identified as part of the distribution system and, as such, satisf~~y~~ies Criterion 3 of 10 CFR 50.36(c)(2)(ii). 1

Inverters - Shutdown

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~~ transient or a postulated DBA. The battery powered inverter~~(s)~~ provide~~(s)~~ uninterruptible supply of AC electrical power to the 120 V AC vital bus~~(es)~~ even if the 4.16 kV safety buses are de-energized. OPERABILITY of the inverter~~(s)~~ requires that the 120 V 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)~~). 2 1 2 2 1 2 1 2

BASES

APPLICABILITY

The inverter(s) required to be OPERABLE in MODES 5 and 6 and during movement of [recently] irradiated fuel assemblies provide assurance that: (2)

INSERT 1A (7)

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core; (3)

b. Systems needed to mitigate a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)] are available; (2) (3)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and (3)

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, A.3, and A.4 ~~A.1, A.2.1, A.2.2, A.2.3, and A.2.4~~ (7)

~~[If two trains are required by LCO 3.8.10, "Distribution Systems - Shutdown," the remaining OPERABLE Inverters may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, [recently] irradiated fuel movement, and operations with a potential for positive reactivity additions.] By the allowance of the option to declare required features inoperable with the associated inverter(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend~~ INSERT 2 (7) CORE ALTERATIONS, movement of [recently] irradiated fuel assemblies, and operations involving positive reactivity additions) that could result in loss of required (2) (7)

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7 **INSERT 1A**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

7 **INSERT 2**

With one or more required inverters inoperable, the minimum required inverters is not available. Therefore, suspension of

BASES

INSERT 3 (4)

ACTIONS (continued)

INSERT 4

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. (6) (3)

Moderator Temperature Coefficient

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. (2)

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. (1)

INSERT 5

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1

required

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. (7)

REFERENCES

1. FSAR, Chapter [6].

(1) 2. 1 FSAR, Chapter [15]. 14 (1) (2)

4

INSERT 3

specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM),"

4

INSERT 4

specified in LCO 3.9.1, "Boron Concentration,"

1

INSERT 5

the regulated 600/120 VAC transformer via the inverter

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.8 BASES, INVERTERS - SHUTDOWN

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

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

4. Changes are made to be consistent with other places in the Bases.

5. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

6. Grammatical/spelling error corrected.

7. Changes are made to reflect changes made to the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.8, INVERTERS - SHUTDOWN

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 9

ITS 3.8.9, Distribution Systems - Operating

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

ITS 3.8.9

ITS

A.1

ELECTRICAL POWER SYSTEMS

~~3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS~~

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

power distribution subsystem — LA.2

LCO 3.8.9 — 3.8.2.1 The following A.C. electrical ~~busses~~ shall be OPERABLE ~~and energized with tie breakers open between redundant busses~~: — LA.1

LCO 3.8.9.a

4160-volt Emergency Bus #T 11A & T 11B

4160-volt Emergency Bus #T 11C & T 11D

600-volt Emergency Bus #11A & 11B

600-volt Emergency Bus #11C & 11D

Train A and Train B AC distribution subsystems — LA.2

L.1

LCO 3.8.9.b

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

Train A and Train B 120 VAC vital distribution — LA.2

Add proposed LCO 3.8.9.e — A.2

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

ACTION:

Add proposed ACTION A Note

Add proposed Required Actions A.1 and B.1 second Completion Time — M.1

ACTIONS A and B — With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours ~~or be in at least HOT STANDBY~~

ACTION E — within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION F — A.2

Add proposed ACTION G — M.2

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 — 4.8.2.1 The specified A.C. busses shall be determined OPERABLE ~~and energized from A.C. sources with tie breakers open between redundant busses~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~. — LA.1

voltage — M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems — M.4

*Energized from its associated inverter connected to a DC bus. — See ITS 3.8.7

ITS 3.8.9

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Train A and Train B 250 VDC distribution subsystems — LA.2

LCO 3.8.9 — 3.8.2.3 The following ~~D.C. bus trains~~ shall be ~~energized and~~ OPERABLE ~~with tie breakers between bus trains open:~~ — LA.1

LCO 3.8.9.c —

TRAIN ~~AB~~ B — ~~consisting of~~ 250-volt D.C. ~~bus AB~~, 250-volt D.C. battery bank No. 1AB, and a full capacity charger, and — LA.2, See ITS 3.8.4

TRAIN ~~CD~~ A — ~~consisting of~~ 250-volt D.C. ~~bus CD~~, 250-volt D.C. battery bank No. 1CD, and a full capacity charger. — LA.2, See ITS 3.8.4

Add proposed LCO 3.8.9.e — A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

Add proposed Required Action C.1 second Completion Time — M.1

ACTION C, ACTION E — a. With one 250-volt D.C. bus inoperable, restore the inoperable bus 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.

Add proposed ACTION F — A.2

Add proposed ACTION G — M.2

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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. — See ITS 3.8.4

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 — 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE ~~and energized with tie breakers open~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~ voltage. — LA.1, M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems — M.4

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that: — See ITS 3.8.4 and 3.8.6

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200, — See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

ITS 3.8.9

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

LA.2

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LA.1

electrical power distribution subsystem

LIMITING CONDITION FOR OPERATION

LA.2

LCO 3.8.9 3.8.2.5 The following D.C. bus ~~train~~ shall be ~~energized and~~ OPERABLE:

LCO 3.8.9.d TRAIN N consisting of 250-volt D.C. ~~bus~~ N, 250-volt D.C. battery bank N, and a full capacity charger.

See ITS 3.8.4

APPLICABILITY: MODES 1, 2 and 3.

ACTION

A.4

ACTION E With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable ~~and follow the ACTION statement of Specification 3.7.1.2.~~

M.2

Add proposed ACTION G

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.9.1 4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability.~~ voltage

M.3

See ITS 3.8.4 and 3.8.6

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

See ITS 3.8.6

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.4

4. The overall battery voltage is greater than or equal to 250 volts.

See ITS 3.8.6

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

ITS 3.8.9

ITS

A.1

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

power distribution subsystem LA.2

LCO 3.8.9 3.8.2.1 The following A.C. electrical ~~busses~~ shall be OPERABLE ~~and energized with tie breakers open between redundant busses~~: LA.1

LCO 3.8.9.a ~~4160-volt Emergency Bus #T 21A & T 21B~~
~~4160-volt Emergency Bus #T 21C & T 21D~~
~~600-volt Emergency Bus #21A & 21B~~
~~600-volt Emergency Bus #21C & 21D~~

Train A and Train B AC distribution subsystems LA.2

L.1

LCO 3.8.9.b ~~*120-volt A.C. Vital Bus #Channel I~~
~~*120-volt A.C. Vital Bus #Channel II~~
~~*120-volt A.C. Vital Bus #Channel III~~
~~*120-volt A.C. Vital Bus #Channel IV~~

LA.2

Train A and Train B 120 VAC vital distribution

A.2

Add proposed LCO 3.8.9.e

A.3

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Add proposed ACTION A Note

Add proposed Required Actions A.1 and B.1 second Completion Time M.1

ACTIONS A and B With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY

ACTION E within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

A.2

Add proposed ACTION F

Add proposed ACTION G M.2

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 4.8.2.1 The specified A.C. busses shall be determined OPERABLE ~~and energized from A.C. sources with tie breakers open between redundant busses~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~. LA.1

voltage M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems M.4

~~*Energized from its associated inverter connected to a DC bus.~~ See ITS 3.8.7

ITS 3.8.9

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Train A and Train B 250 VDC distribution subsystems

LA.2

LA.1

LCO 3.8.9 3.8.2.3 The following ~~D.C. bus trains~~ shall be ~~energized and~~ OPERABLE ~~with tie breakers between bus trains open:~~

LA.2

See ITS 3.8.4

B

LCO 3.8.9.c TRAIN ~~AB~~ ~~consisting of~~ 250-volt D.C. ~~bus AB~~, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

A

LA.2

TRAIN ~~CD~~ ~~consisting of~~ 250-volt D.C. ~~bus CD~~, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

See ITS 3.8.4

Add proposed LCO 3.8.9.e

A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

Add proposed Required Action C.1 second Completion Time

M.1

ACTION C a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD

ACTION E SHUTDOWN within the following 30 hours.

Add proposed ACTION F

A.2

Add proposed ACTION G

M.2

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.

See ITS 3.8.4

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.9.1 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE ~~and energized with tie breakers open~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability.~~

voltage

M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE:

M.4

a. At least once per 7 days by verifying that:

See ITS 3.8.4 and 3.8.6

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

4. The overall battery voltage is greater than or equal to 250 volts.

See ITS 3.8.4

ITS 3.8.9

ITS

A.1

LA.2

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LA.1

LIMITING CONDITION FOR OPERATION

electrical power distribution subsystem

LA.2

LCO 3.8.9 3.8.2.5 The following D.C. bus ~~train~~ shall be ~~energized and~~ OPERABLE:

LCO 3.8.9.d TRAIN N consisting of 250-volt D.C. ~~bus N~~, 250-volt D.C. battery bank N, and a full capacity charger.

See ITS 3.8.4

APPLICABILITY: MODES 1, 2 and 3.

ACTION

A.4

ACTION E With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable ~~and~~ ~~follow the ACTION statement of Specification 3.7.1.2.~~

Add proposed ACTION G

M.2

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.9.1 4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

voltage

M.3

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

See ITS 3.8.4 and 3.8.6

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

4. The overall battery voltage is greater than or equal to 250 volts.

See ITS 3.8.4

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

See ITS 3.8.6

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 CTS 3.8.2.1 only provides the requirements for the unit AC electrical power distribution subsystems. CTS 3.8.2.3 only provides the requirements for the unit DC electrical power distribution subsystems. Neither of these Specifications provide any requirements for the opposite unit electrical power distribution subsystems. CTS LCO 3.7.4.1 requires two independent essential service water loops to be OPERABLE. The CTS 3/4.7.4 Bases states that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABLE-OPERABILITY requires all attendant equipment to be capable of performing its required function which includes necessary electrical power distribution requirements. Thus, the opposite unit electrical power distribution subsystems may be required to be OPERABLE. In addition, this would require declaring the affected ESW train inoperable when a required opposite unit bus is inoperable. ITS LCO 3.8.9.e requires the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC electrical power distribution subsystem(s) and the Train A and Train B 250 VDC electrical power distribution subsystem(s) required to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. ITS 3.8.9 ACTION F has been added to cover the situation when LCO 3.8.9.e is not met. ITS 3.8.9 ACTION F requires the immediate declaration that the associated ESW train(s) are inoperable. This changes the CTS by providing an explicit LCO and ACTION for the opposite unit electrical power distribution subsystems.

The opposite unit electrical power distribution subsystems are needed to support the opposite unit ESW trains when the Essential Service Water (ESW) System headers between the units are not isolated. This change is acceptable because safety related equipment is shared between both units when an ESW header between the two units is opened. The added LCO requirement is consistent with the CTS because the definition of OPERABLE - OPERABILTY requires all attendant equipment to be capable of performing its required function, and the added ACTION is also consistent with the CTS. This change is designated as administrative because the CTS requirements are unchanged.

A.3 CTS 3.8.2.1 Action states that with less than the above complement of AC buses OPERABLE, to restore the inoperable bus to OPERABLE status within 8 hours. ITS 3.8.9 Required Action A.1 allows 8 hours to restore the Train A and Train B AC electrical power distribution subsystem(s) to OPERABLE status. In addition, a Note has been added (ITS 3.8.9, Note to ACTION A) that requires entry into

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applicable Conditions and Required Action of LCO 3.8.4, "DC Sources – Operating," for DC Sources made inoperable by inoperable power distribution subsystems. This changes the CTS by requiring the compensatory actions for DC Sources to be taken if a DC Source is made inoperable by inoperable power distribution subsystems.

This change is acceptable because no changes are made to CTS requirements. The change in format from the CTS to the ITS maintains all technical requirements. The addition of the Note only acts as a reminder to enter the appropriate actions if the emergency bus which supplies the Train A or Train B 250 VDC battery charger becomes de-energized. In the event an emergency bus is inoperable such that a Train A or Train B 250 VDC battery charger were inoperable, ITS LCO 3.0.6 would allow taking only the Distribution System - Operating ACTIONS; taking exception to complying with the DC Sources - Operating ACTIONS. Since the Distribution System - Operating ACTIONS may not be sufficiently conservative in this event (i.e., a battery charger may be without power), specific direction to take appropriate ACTIONS for the DC Sources - Operating is added (ITS 3.8.9, Note to ACTION A) when there is no power to support the associated required 250 VDC battery charger. This format and construction implements the existing treatment of this condition within the framework of the CNP Units 1 and 2 Improved Technical Specification methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 The CTS 3.8.2.5 Action states that with the Train N 250 VDC battery and/or its charger inoperable, to declare the turbine driven auxiliary feedwater pump inoperable "and follow the Action statement of Specification 3.7.1.2." ITS 3.8.9 ACTION E covers the situation when the Train N 250 VDC electrical power distribution subsystem is inoperable. ITS 3.8.9 Required Action E.1 is to declare the turbine driven auxiliary feedwater train inoperable. This changes the CTS by deleting the detail to follow the Action statement of Specification 3.7.1.2.

The purpose of the CTS 3.8.2.5 Action to follow the Action Statement of Specification 3.7.1.2 is to alert the user of the appropriate Specification to enter when the turbine driven auxiliary feedwater train is declared inoperable. It is an ITS convention to not include these types of cross-references. This change is designated as administrative as it incorporates an ITS convention with no technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 3.8.2.1 Action states that with less than the above complement of AC buses OPERABLE, to restore the inoperable bus to OPERABLE status within 8 hours. CTS 3.8.2.3 Action a states that with one 250 VDC bus inoperable, to restore the inoperable bus to OPERABLE status within 2 hours. ITS 3.8.9 ACTION A covers the situation when one or both Train A and Train B AC electrical power distribution subsystems are inoperable. ITS 3.8.9 Required Action A.1 allows 8 hours and 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c to restore the Train A and Train B AC electrical power distribution subsystem(s) to OPERABLE status. ITS 3.8.9 ACTION B covers the situation when one or both

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

Train A and Train B 120 VAC vital electrical power distribution subsystems are inoperable. ITS 3.8.9 Required Action B.1 allows 8 hours and 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c to restore the Train A and Train B 120 VAC vital electrical power distribution subsystem(s) to OPERABLE status. ITS 3.8.9 ACTION C covers the situation when one or both Train A and Train B 250 VDC electrical power distribution subsystems are inoperable. ITS 3.8.9 Required Action C.1 allows 2 hours and 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c to restore the Train A and Train B 250 VDC electrical power distribution subsystem(s) to OPERABLE status. This changes the CTS by establishing a maximum time allowed for any combination of distribution subsystems listed in ITS LCO 3.8.9.a, b, and c to be inoperable during any single contiguous occurrence of failing to meet the LCO.

The purpose of the CTS 3.8.2.1 is to limit the time AC buses can be inoperable. The purpose of CTS 3.8.2.3 is to limit the time the DC buses can be inoperable. The Completion Times of ITS 3.8.9 ACTIONS A, B, and C have a limitation in addition to the 8 hour limit of the CTS 3.8.2.1 Action or the 2 hour limit of CTS 3.8.2.3 Action a. This additional limit establishes a maximum time allowed for any combination of electrical power distribution subsystems listed in ITS LCO 3.8.9.a, b and c to be inoperable during any single contiguous occurrence of failing to meet the LCO. For example, if a Train A AC electrical distribution subsystem is inoperable while, for instance, a Train A DC electrical distribution subsystem is inoperable and subsequently returned to OPERABLE status, the LCO may already have been not met for up to 8 hours. This situation could lead to a total duration of 10 hours since initial failure of the LCO to restore the Train A DC electrical distribution system. Then, a Train A AC subsystem could again become inoperable, and the Train A DC electrical distribution subsystem restored to OPERABLE status. This could continue indefinitely. Therefore, to preclude this situation and place an appropriate restriction on any such unusual situation, the additional Completion Time of "16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c" is proposed. This change is designated as more restrictive because an additional limitation has been placed on the Completion Times for electrical distribution subsystems.

M.2 CTS 3.8.2.1 Action states that with less than the above complement of AC buses OPERABLE, to restore the inoperable bus to OPERABLE status within 8 hours. CTS 3.8.2.3 Action a states that with one 250 VDC bus inoperable, to restore the inoperable bus to OPERABLE status within 2 hours. CTS 3.8.2.5 Action states that with the Train N battery system inoperable, to declare the turbine driven auxiliary feedwater pump inoperable. However, there are no limitations to preclude a loss of function due to numerous concurrently inoperable AC and DC buses. ITS 3.8.9 ACTION G has been added, requiring entry into ITS 3.0.3 if the loss of two or more electrical power distribution subsystems results in a loss of safety function.

The purpose of the CTS Actions are to limit the time the unit can operate under these conditions. CTS 3.8.2.3 Action a specifies the compensatory actions for one inoperable DC bus. With two inoperable DC buses, CTS 3.8.2.3 does not provide any actions and entry into LCO 3.0.3 would be required. CTS 3.8.2.1 Action is applicable to all inoperable AC buses even if there is a loss of safety function. Certain combinations of inoperable AC and DC electrical power

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distribution subsystems will result in a loss of safety function (e.g., an inoperable Train A AC electrical power distribution subsystem in combination with an inoperable Train B 250 VDC electrical power distribution subsystem). ITS 3.8.9 includes ACTION G, which requires immediate entry into LCO 3.0.3 if the loss of one or more electrical power distribution subsystems results in a loss of safety function. ITS 3.8.9 Required Action G.1 preserves the intent of ITS LCO 3.0.3 and reflects an additional restriction on plant operation. This change is designated as more restrictive because an explicit action has been added which requires entry into LCO 3.0.3 with any combination of AC and/or DC buses inoperable that result in a loss of safety function.

M.3 CTS 4.8.2.1 states the specified AC buses shall be determined OPERABLE by verifying correct breaker alignment and "indicated power availability." CTS 4.8.2.3.1 states that each DC bus train shall be demonstrated OPERABLE by verifying correct breaker alignment and "indicated power availability." CTS 4.8.2.5.1 states that the DC bus Train N shall be determined OPERABLE by verifying correct breaker alignment and "indicated power availability." ITS SR 3.8.9.1 requires the verification of correct breaker alignments and "voltage" to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by requiring the verification of the correct voltages to the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems, whereas the CTS only requires verification of indicated power.

The purpose of this change is to ensure proper voltage is supplied to the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. Proper voltage from the required subsystems ensures proper voltage is supplied to the required safety features. This change is designated as more restrictive because the ITS requires verification of the correct voltage, whereas the CTS only requires a verification of indicated power availability.

M.4 CTS 3.8.2.1 only specifies the AC electrical power distribution subsystem requirements for the given unit. It does not explicitly specify the requirements for the AC electrical power distribution subsystem requirements associated with the opposite unit. CTS 3.8.2.3 only specifies the DC electrical power distribution system requirements for the given unit. It does not explicitly specify the requirements for the DC electrical power distribution subsystem requirements associated with the opposite unit. CTS LCO 3.7.4.1 requires two independent essential service water (ESW) loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABLE - OPERABILITY requires all attendant equipment to be capable of performing its required function, which includes electrical power distribution subsystems. However, there are no specific requirements in the CTS requiring the testing of the opposite unit electrical power distribution subsystems. ITS LCO 3.8.9.e requires the opposite unit Train A and Train B AC electrical power distribution subsystem(s) and the Train A and Train B 250 VDC electrical power distribution subsystem(s) required to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. This change is discussed in DOC A.2. An explicit Surveillance Requirement has been added (SR 3.8.9.1) which requires the verification of correct breaker alignments and voltage to required opposite unit electrical power distribution subsystems. This changes the CTS by adding an explicit Surveillance Requirement for the opposite unit electrical power distribution subsystems to be applicable to the given unit Technical Specifications.

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.9.1) has been added that requires the verification of correct breaker alignments and voltage to required opposite unit AC and DC electrical power subsystems. The added Surveillance helps to ensure the required opposite unit AC and DC electrical power distribution subsystems remain OPERABLE. This change is designated as more restrictive because an additional Surveillance Requirement will be applicable to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.1 requires the AC electrical buses to be OPERABLE "and energized with tie breakers open between redundant busses." CTS 4.8.2.1 also requires the AC buses to be determined OPERABLE "and energized from AC sources with tie breakers open between redundant busses" by verifying correct breaker alignment and indicated power availability. CTS LCO 3.8.2.3 requires the DC bus trains to be "energized" and OPERABLE "with tie breakers between bus trains open." CTS 4.8.2.3.1 requires the DC bus trains to be determined OPERABLE "and energized with tie breakers between bus trains open" by verifying correct breaker alignment and indicated power availability. CTS 3.8.2.5 requires the Train N bus to be "energized" and OPERABLE. CTS 4.8.2.5.1 also requires the Train N bus to be OPERABLE and "energized" by verifying correct breaker alignment and indicated power availability. ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE and ITS SR 3.8.9.1 requires the verification of correct breaker alignments and voltage to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by moving the procedural detail that the buses must be energized with 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 electrical power distribution subsystems to be OPERABLE

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DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

and requires the verification of correct breaker alignments and voltage to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. 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.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 requires the AC electrical buses to be OPERABLE and lists the specific AC and 120 VAC vital buses, including the applicable nominal bus voltage. CTS LCO 3.8.2.3 requires the Trains AB (Train B) and CD (Train A) DC buses to be OPERABLE and lists the specific buses. CTS LCO 3.8.2.5 requires the Train N bus (Bus N) to be OPERABLE. ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE, and lists the Train A and Train B AC electrical power distribution subsystems; Train A and Train B 120 VAC vital bus electrical power distribution subsystems; Train A and Train B 250 VDC distribution subsystems; and the Train N 250 VDC distribution subsystem. This changes the CTS by moving the specific names of the buses and the associated nominal bus voltages (i.e., 4160 V and 600 V) 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 still retains the requirement for the required buses to be OPERABLE. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. 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

L.1 *(Category 1 - Relaxation of LCO Requirements)* CTS LCO 3.8.2.1 footnote * requires the 120 VAC vital buses to be energized from their associated inverters connected to a DC bus. There is no other LCO requirement for the inverters to be OPERABLE. 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 in the containment, auxiliary building, and opposite unit containment). The 120 VAC vital buses remain in their own separate Specifications during these same conditions (ITS 3.8.9 and ITS 3.8.10, respectively). When an inverter is inoperable, a 24 hour allowed time is provided to restore the inverter to OPERABLE status. During this 24 hours, the 120 VAC vital bus remains OPERABLE provided it is energized. In the ISTS Bases, the 120 VAC vital buses remain OPERABLE as long as they can be

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energized from a qualified source. The CNP ITS 3.8.9 Bases state that the qualified sources are the inverter powered from DC Sources and the Class 1E regulated 600/120 VAC transformer via the inverter. This changes the CTS by allowing the 120 VAC vital buses to be called OPERABLE when powered from a source other than the inverter connected to a DC bus.

The purpose of CTS LCO 3.8.2.1 footnote * is to provide requirements for the inverters. This requirement is maintained in ITS LCO 3.8.7 and LCO 3.8.8. For the 120 VAC vital buses to be OPERABLE, they 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 both the DC Source and the 120 VAC Class 1E regulated 600/120 VAC 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.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

LCO 3.8.2.1

LCO 3.8.9 ~~Train A and Train B AC, DC, and AC vital bus~~ The following electrical power distribution subsystems shall be OPERABLE~~.~~ : (1)

INSERT 1

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

INSERT 2 (1)

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.2.1 Action	A. One or ~~more~~ both Train A and Train B AC electrical power distribution subsystems inoperable.	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC ~~trains~~ sources made inoperable by inoperable power distribution subsystems. (1) (3)	
		A.1 Restore Train A and Train B AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c (1)
3.8.2.1 Action	B. One or ~~more~~ both Train A and Train B 120 V AC vital ~~buses~~ bus electrical power distribution subsystems inoperable.	B.1 Restore Train A and Train B 120 V AC vital bus electrical power distribution subsystem(s) to OPERABLE status.	~~2~~ 8 hours (4) (1) AND 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c (1)

1 **INSERT 1**

LCO 3.8.2.1 a. Train A and Train B AC electrical power distribution subsystems;

LCO 3.8.2.1 b. Train A and Train B 120 VAC vital bus electrical power distribution subsystems;

LCO 3.8.2.3 c. Train A and Train B 250 VDC electrical power distribution subsystems;

LCO 3.8.2.5 d. Train N 250 VDC electrical power distribution subsystem; and

DOC A.2 e. The Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC electrical power distribution subsystem(s) and Train A and Train B 250 VDC electrical power distribution subsystem(s) required to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System."

1 **INSERT 2**

-NOTE-

Train N 250 VDC electrical power distribution subsystem is not required to be OPERABLE in MODE 4.

CTS

Distribution Systems - Operating
3.8.9

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.8.2.3 Action a	C. One ~~or more~~ DC electrical power distribution subsystem~~s~~ inoperable. Train A or Train B 250V	C.1 Restore DC electrical power distribution subsystem~~(s)~~ to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c	1
3.8.2.1 Action, 3.8.2.3 Action	D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours	1 INSERT 3
DOC M.3	6 ~~E~~. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	~~E~~.1 6 Enter LCO 3.0.3.	Immediately	1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.8.2.1, 4.8.2.3, 4.8.2.5	SR 3.8.9.1	Verify correct breaker alignments and voltage to ~~required~~ AC, DC, and 120V AC vital bus electrical power distribution subsystems.	7 days	2 1

1

INSERT 3

3.8.2.5 Action	E. Required Train N 250 VDC electrical power distribution subsystem inoperable.	E.1 Declare the turbine driven auxiliary feedwater train inoperable.	Immediately
DOC A.2	F. One or more required Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical distribution subsystems inoperable.	F.1 Declare associated ESW train(s) inoperable.	Immediately

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

1. ISTS LCO 3.8.9 and Applicability have been revised to reflect the plant specific design for CNP Units 1 and 2. Additional requirements were added as ITS LCO 3.8.9 to ensure the appropriate electrical power distribution subsystems of the opposite unit are OPERABLE to support unit operation. This change was necessary due to a shared system (Essential Service Water System) between both units. In addition, ITS 3.8.9 ACTION F has been added to declare the associated Essential Service Water train inoperable when an opposite unit electrical power distribution subsystem is inoperable, since this is the only system affected by the inoperable opposite unit electrical power distribution subsystems. Due to this change and the Train N 250 VDC requirements, the second Completion Times for Required Actions A.1, B.1, and C.1 have been revised to not reflect the LCO 3.8.9.d and e requirements, since the associated system could be declared inoperable. Finally, the allowance in ISTS 3.8.9 ACTION C to have one or more DC electrical power distribution subsystems inoperable for 2 hours has been changed to address only the inoperability of one Train A or Train B 250 V DC subsystem, since if both the Train A and Train B buses were inoperable, then a loss of safety function would exist and entry into ACTION G would be necessary.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Change made to be consistent with another Specification.

4. The current licensing basis time allowed to restore an inoperable 120 VAC vital bus electrical power distribution subsystem is 8 hours. Therefore, this time has been maintained.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

BASES

for the most part

120V

BACKGROUND The onsite Class 1E AC, DC, ~~and~~ AC vital bus electrical power distribution systems are divided by train into ~~two~~ redundant and independent AC, DC, and AC vital bus electrical power distribution subsystems. INSERT 1 (1) (2)

es two two 600V

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) (2)

emergency INSERT 2 emergency (5) two normal INSERT 3 preferred each two associated es

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. INSERT 4 (2)

(15) regulated 600/120 VAC

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. (2) (1)

electrical power distribution system

120 VAC

Train A and Train B 250V two 250 VDC

The DC electrical power distribution subsystem consists of ~~125~~ V bus(es) (one for each train) ~~and distribution panel(s)~~. INSERT 5 (2)

The list of all required DC and vital ~~AC~~ distribution buses ~~and panels~~ is presented in Table B 3.8.9-1. INSERT 6 (1) (2)

2 **INSERT 1**

, as required by Safety Guide 6 (Ref. 1). The exception is the Train N DC electrical power distribution subsystem which supports the turbine driven auxiliary feedwater (AFW) train.

Unit 2 (Unit 1) and Unit 1 (Unit 2) also has an identical electrical power distribution system. When the Essential Service Water (ESW) trains are not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical power distribution subsystems (except for the Train N DC electrical power distribution subsystem) are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operation.

2 **INSERT 2**

the main generator via the unit auxiliary transformer.

2 **INSERT 3**

by a main generator trip signal. A 4.16 kV emergency bus can be manually transferred to the alternate offsite source.

2 **INSERT 4**

The Unit 2 (Unit 1) and Unit 1 (Unit 2) AC electrical power distribution subsystems are also included in the table since they are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations when the associated ESW train is not isolated.

2 **INSERT 5**

The Train N 250 VDC electrical power subsystem consists of one bus and supports the operation of the turbine driven auxiliary feedwater train.

2 **INSERT 6**

The Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 V DC electrical power distribution subsystem buses are also included in the table since they are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations when the associated ESW train is not isolated. The Unit 2 (Unit 1) and Unit 1 (Unit 2) Train N 250 VDC electrical power distribution subsystem is not required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations.

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BASES

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses ~~in the FSAR, Chapter [6] (Ref. 1), and~~ in the FSAR, Chapter ~~[15]~~ 14 (Ref. 2), assume ESF systems are OPERABLE. The AC, DC, and 120V 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. (u) 1 2 2 1

The OPERABILITY of the AC, DC, and 120 V 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: 2

a. An assumed loss of all offsite power or all onsite AC electrical power; and 6

b. A worst case single failure.

~~The~~ AC, DC, and 120 V AC vital bus electrical power distribution systems - Operating satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The required power distribution subsystems listed in Table B 3.8.9-1 ensure the availability of AC, DC, and 120V 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)~~ transient or a postulated DBA. The AC, DC, and 120V AC vital bus electrical power distribution subsystems are required to be OPERABLE. INSERT 7 2 2 2

Maintaining the Train A and Train B AC, ~~DC, and~~ Train A and Train B 250 VDC, Train N 250 VDC, Train A and Train B 120V AC vital bus electrical power distribution subsystems OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Therefore, a single failure within any system or within the electrical power distribution subsystems will not prevent safe shutdown of the reactor. INSERT 8 2

OPERABLE AC electrical power distribution subsystems require the associated buses~~, load centers, motor control centers, and distribution panels~~ to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated buses ~~and distribution panels to~~ required to be energized to their proper voltage from either the associated battery or charger. OPERABLE 120 VAC vital bus electrical power distribution subsystems require the associated buses to be energized to 2

2 **INSERT 7**

and certain buses of the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC and DC electrical power distribution subsystems may be required to be OPERABLE to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System."

2 **INSERT 8**

, and the required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC and DC

BASES

LCO (continued)

or Class 1E regulated 600/120 VAC transformer via the inverter

their proper voltage from the associated inverter via inverted DC voltage, ~~inverter using internal AC source, or Class 1E constant voltage transformer~~. INSERT 8A (2)

In addition, tie breakers between redundant safety related AC, DC, ~~and~~ and AC vital ~~bus~~ electrical 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. INSERT 8 B (2)

APPLICABILITY

INSERT 9

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that: (4)

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of ~~AOOs or abnormal transients~~ anticapated operational transients and (5) (6) (2)

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA. (4)

INSERT 10

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown." INSERT 11 (3)

ACTIONS

A.1 (4)

With one or ~~more~~ both Train A and B Train ~~required~~ AC ~~buses, load centers, motor control centers, or distribution panels~~ electrical power distribution subsystems (except AC vital buses) ~~in one train~~ 120V 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 electrical power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the ~~required~~ AC (4)

2

INSERT 8A

Based on the number of safety significant electrical loads associated with each bus listed in Table B 3.8.9-1, if one or more of the buses becomes inoperable, entry into the appropriate ACTIONS of LCO 3.8.9 is required. Some buses, such as distribution panels, which help comprise the AC and DC distribution systems, are not listed in Table B 3.8.9-1. The loss of electrical loads associated with these buses may not result in a complete loss of a redundant safety function necessary to shut down the reactor and maintain it in a safe condition. Therefore, should one or more of these buses become inoperable due to a failure not affecting the OPERABILITY of a bus listed in Table B 3.8.9-1 (e.g., a breaker supplying a single distribution panel fails open), the individual loads on the bus would be declared inoperable, and the appropriate Conditions and Required Actions of the LCOs governing the individual loads would be entered. However, if one or more of these buses is inoperable due to a failure also affecting the OPERABILITY of a bus listed in Table B 3.8.9-1 (e.g., loss of 4.16 kV emergency bus, which results in de-energization of all buses powered from the 4.16 kV emergency bus), then although the individual loads are still considered inoperable, the Conditions and Required Actions of the LCO for the individual loads are not required to be entered, since LCO 3.0.6 allows this exception (i.e., the loads are inoperable due to the inoperability of a support system governed by a Technical Specification; the 4.16 kV emergency bus).

2

INSERT 8B

that are not being powered from their normal source (i.e., they are being powered from their redundant electrical power distribution subsystem)

4

INSERT 9

The Train A and Train B AC, Train A and Train B 120 VAC vital bus, Train A and Train B 250 VDC, and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC and Train A and Train B 250 VDC

4

INSERT 10

The Train N 250 VDC electrical power distribution subsystem is required to be OPERABLE in MODES 1, 2, and 3 to support the turbine driven auxiliary feedwater train in the event that it is called upon to function when the Main Feedwater System is lost.

3 **INSERT 11**

and other conditions in which electrical power distribution subsystems are required

BASES

ACTIONS (continued)

electrical power distribution subsystem(s)

~~buses,~~ load centers, motor control centers, and distribution panels must be restored to OPERABLE status within 8 hours. (4)

Condition A worst scenario is one train without AC power (i.e., no offsite power to the train and the associated DG inoperable). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining train by stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit ~~and~~ ; (6)

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet ~~the~~ LCO 3.8.9. a, b, or c. If Condition A is entered while, for instance, a Train A or Train B 250 V DC bus is inoperable and subsequently restored OPERABLE, the LCO may already have been not met for up to 2 hours. This could lead to a total of 10 hours, since initial failure ~~of~~ to meet the LCO, to restore the AC distribution system. At this time, a Train A or Train B 250 V DC circuit could again become inoperable, and AC distribution restored OPERABLE. This could continue indefinitely. (4) (4) (8)

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

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for DC ~~trains~~ sources 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 (4)

BASES

ACTIONS (continued)

of a distribution system can result in loss of charging power to batteries and eventual loss of DC power. This Note ensures that the appropriate attention is given to restoring charging power to batteries, if necessary, after loss of distribution systems.

B.1

both 120V electrical power distribution subsystems (4)

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~~]. 120V (1) (2) (4) (8) 120V or Class 1E regulated 600/120 VAC transformer via the inverter (2)

120V

Condition B represents one or more AC vital buses without power; potentially both the DC source and the associated AC source are nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all noninterruptible power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining vital buses and restoring power to the affected vital bus. (2) 120 VAC 120 VAC

120 VAC (4)

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that are without adequate vital AC bus 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: (8) 120 VAC bus (8) (2) (2) (4)

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, ; (6)

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 bus 120 VAC (2) ; (6)

BASES

ACTIONS (continued)

c. The potential for an event in conjunction with a single failure of a redundant component.

8 120 V 4

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.

INSERT 12

120 VAC

5 time 4 3.8.9.a, b, or c 8 to meet 16 sub 120 VAC

The second Completion Time for Required Action B.1 establishes a limit on the maximum allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet ~~the~~ LCO. If Condition B is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the vital bus distribution system. At this time, an AC train could again become inoperable, and vital bus distribution restored OPERABLE. This could continue indefinitely.

4 120VAC 2 electrical power electrical power subsystem

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

INSERT 13

C.1

INSERT 14

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.

4 15 INSERT 13 4 INSERT 13 4 1 4 5 2

INSERT 13

Condition C represents one ~~or more~~ DC ~~buses or distribution panels~~ without adequate DC power; potentially both with the battery significantly degraded and the associated charger nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all DC

INSERT 14 4 5 2

4

INSERT 12

electrical power distribution subsystem(s)

4

INSERT 13

Train A or Train B 250 V

4

INSERT 14

electrical power distribution subsystem

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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, not 7 ; 6

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 ; 6

c. The potential for an event in conjunction with a single failure of a redundant component. 3.8.9.a, b, or c 4

5

The 2 hour Completion Time for DC buses is consistent with Regulatory Guide 1.93 (Ref. 3). The second Completion Time for Required Action C.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition C is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the DC distribution system. At this time, an AC train could again become inoperable, and DC distribution restored OPERABLE. This could continue indefinitely.

Train A or Train B 4

Train A or Train B 250V 4

Train A or Train B

to meet 8

Train A or Train B

system 7

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

BASES

ACTIONS (continued)

D.1 and D.2

INSERT 15 (4)

If the inoperable distribution subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging ~~plant~~ unit (2) systems.

INSERT 16 (4)

(4)

(6) E.1

Condition E corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. When more than one inoperable electrical power distribution subsystem results in the loss of a required function, the ~~plant~~ unit (2) is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

(1)

This Surveillance verifies that the ~~[required]~~ AC, DC, and 120 V AC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the redundant capability of the AC, DC, and 120 V AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

REFERENCES

1. ~~FSAR, Chapter [6].~~ Safety Guide 6, March 1971 (2)

2. (4) FSAR, Chapter ~~[15]~~ 14. (1)

3. Regulatory Guide 1.93, December 1974.

4

INSERT 15

If any Required Action and associated Completion Time of Condition A, B, or C is not met,

4

INSERT 16

E.1

With the required Train N 250 VDC electrical power distribution system inoperable, the Train N powered system is not capable of performing its intended function. Immediately declaring the affected supported feature (e.g., the turbine driven AFW System) inoperable allows the ACTIONS of LCO 3.7.5, "Auxiliary Feedwater System (AFW)," to apply appropriate limitations on continued reactor operation.

F.1

With the required portions of the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC electrical power distribution subsystems and Train A and Train B 250 VDC electrical power distribution subsystems inoperable, the associated ESW train is not capable of performing its intended function. Immediately declaring the affected supported feature (i.e., the ESW train) inoperable allows the ACTIONS of LCO 3.7.8 to apply appropriate limitations on continued reactor operation.

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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 17

2

2

INSERT 17
(UNIT 1 only)

Table B 3.8.9-1 (page 1 of 1)
AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A[(a),(b)]	TRAIN B[(a),(b)]	TRAIN N[(a)]
AC Buses	4.16kV 600 V	Emergency Bus T 11C, T 11D Emergency Bus 11C, 11D	Emergency Bus T 11A, T 11B Emergency bus 11A, 11B	Not Applicable
DC Buses	250 V	Main Distribution Cabinet CD	Main Distribution Cabinet AB	Battery Distribution Cabinet N
AC Vital Buses	120 V	Instrument Distribution Cabinet Channels I and II	Instrument Distribution Cabinet Channels III and IV	Not Applicable

(a) Each train of the AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems is a subsystem.

(b) If the ESW crosstie header associated with Train A ESW pump is not isolated, the following Unit 2 buses are required to be OPERABLE: 4.16 kV Emergency Bus T 21A and 250 V Main Distribution Cabinet AB. If the ESW crosstie header associated with Train B ESW pump is not isolated the following Unit 2 buses are required to be OPERABLE: 4.16 kV Emergency Bus T 21D and 250 V Main Distribution Cabinet CD.

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2

INSERT 17
(UNIT 2 only)

Table B 3.8.9-1 (page 1 of 1)
AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A[(a),(b)]	TRAIN B[(a),(b)]	TRAIN N[(a)]
AC Buses	4.16kV	Emergency Bus T 21C, T 21D	Emergency Bus T 21A, T 21B	Not Applicable
	600 V	Emergency Bus 21C, 21D	Emergency bus 21A, 21B	
DC Buses	250 V	Main Distribution Cabinet CD	Main Distribution Cabinet AB	Battery Distribution Cabinet N
AC Vital Buses	120 V	Instrument Distribution Cabinet Channels I and II	Instrument Distribution Cabinet Channels III and IV	Not Applicable

(a) Each train of the AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems is a subsystem.

(b) If the ESW crosstie header associated with Train A ESW pump is not isolated, the following Unit 1 buses are required to be OPERABLE: 4.16 kV Emergency Bus T 11A and 250 V Main Distribution Cabinet AB. If the ESW crosstie header associated with Train B ESW pump is not isolated the following Unit 1 buses are required to be OPERABLE: 4.16 kV Emergency Bus T 11D and 250 V Main Distribution Cabinet CD.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9 BASES, DISTRIBUTION SYSTEMS - OPERATING

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

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. Changes are made to be consistent with the Applicability of ITS LCO 3.8.10.

4. Changes are made to the Bases which reflect changes made to the Specifications.

5. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide for the Improved Standard Technical Specification, NEI 01-03.

6. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

7. Typographical/grammatical error corrected.

8. Changes are made to be consistent with the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 10

ITS 3.8.10, Distribution Systems - Shutdown

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

ITS 3.8.10

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

M.1

A.C. DISTRIBUTION SHUTDOWN

LA.1

LIMITING CONDITION FOR OPERATION

The necessary portions of the

LCO 3.8.10 3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

distribution subsystem

1 - 4160-volt Emergency Bus, and

LA.2

1 - 600-volt Emergency Bus, and

2 - *120 volt A.C. Vital Busses.

A.5

APPLICABILITY MODES 5 and 6, and during movement of irradiated fuel.

Add proposed ACTIONS Note

A.2

ACTION:

ACTION A With less than the above complement of A.C. busses OPERABLE and energized,

Add proposed Required Action A.1

M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

L.1

additions that could result in loss of required SDM or boron concentration

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.10.1 4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

voltage

M.2

*Energized from its associated inverter connected to a DC bus.

See ITS 3.8.8

ITS 3.8.10

ITS

A.1

M.1

LA.1

LA.2

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

The necessary portions of the

LCO 3.8.10 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and bus~~ shall be ~~energized and~~ OPERABLE:

distribution subsystem

See ITS 3.8.5

See ITS 3.8.5

~~1 - 250-volt D.C. bus, and~~

1 - 250-volt battery bank and charger associated with the above D.C. bus.

A.5

APPLICABILITY: MODES 5 and 6, and ~~during movement of irradiated fuel.~~

Add proposed ACTIONS Note

A.2

ACTION:

See ITS 3.8.5

ACTION A With less than the above complement of D.C. ~~equipment and~~ bus OPERABLE

Add proposed Required Action A.1

M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~

L.1

additions that could result in loss of required SDM or boron concentration

See ITS 3.8.5

b. Immediately initiate actions to restore the required D.C. electrical ~~equipment and~~ bus to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

LA.1

SURVEILLANCE REQUIREMENTS

M.2

SR 3.8.10.1 4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability.~~

voltage

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See ITS 3.8.5 and 3.8.6

ITS 3.8.10

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

M.1

A.C. DISTRIBUTION SHUTDOWN

LA.1

LIMITING CONDITION FOR OPERATION

The necessary portions of the

3.8.2.2 ~~As a minimum, the following~~ A.C. electrical ~~busses~~ shall be OPERABLE ~~and energized~~:

distribution subsystem

LA.2

~~1 - 4160-volt Emergency Bus, and~~

~~1 - 600-volt Emergency Bus, and~~

~~2 - *120-volt A.C. Vital Busses.~~

Unit 1 electrical power distribution subsystem requirements

A.3

A.4

APPLICABILITY: MODES 5 and 6.

During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

ACTION:

Add proposed ACTIONS Note

A.2

ACTION A

With less than the above complement of A.C. busses OPERABLE and energized.

Add proposed Required Action A.1

M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~

L.1

additions that could result in loss of required SDM or boron concentration

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

A.3

c. Immediately declare associated required residual heat removal loop(s) inoperable.

Add proposed ACTION B

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.10.1

4.8.2.2 The specified A.C. busses shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

voltage

M.2

Add proposed SR 3.8.10.1 for Unit 1 electrical power distribution subsystem requirements

M.3

* ~~Energized from its associated inverter connected to a DC bus.~~

See ITS 3.8.8

ITS 3.8.10

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

M.1

LA.1

D.C. DISTRIBUTION - SHUTDOWN

The necessary portions of the

LA.2

LIMITING CONDITION FOR OPERATION

LCO 3.8.10 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and~~ ~~bus~~ shall be ~~energized and~~ OPERABLE:

distribution subsystem

See ITS 3.8.5

~~1 - 250-volt D.C. bus, and~~

See ITS 3.8.5

1 - 250-volt battery bank and charger associated with the above D.C. bus.

A.4

APPLICABILITY: MODES 5 and 6.

During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

A.2

Add ACTIONS Note

ACTION:

See ITS 3.8.5

ACTION A With less than the above complement of D.C. ~~equipment and~~ bus OPERABLE.

Add proposed Required Action A.1

M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~

L.1

additions that could result in loss of required SDM or boron concentration

b. Immediately initiate actions to restore the required D.C. electrical ~~equipment and~~ bus to OPERABLE status.

See ITS 3.8.5

c. Immediately declare associated required residual heat removal loop(s) inoperable.

LA.1

SURVEILLANCE REQUIREMENTS

M.2

SR 3.8.10.1 4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

voltage

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See ITS 3.8.5 and 3.8.6

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP 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. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

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

A.2 Unit 1 CTS 3.8.2.2 and CTS 3.8.2.4 are applicable during MODES 5 and 6, and during the movement of irradiated fuel. Unit 2 CTS 3.8.2.2 and CTS 3.8.2.4 are applicable during MODES 5 and 6. ITS 3.8.10 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. However, 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 Note to the ACTIONS stating that LCO 3.0.3 is not applicable.

The purpose of CTS 3.8.2.2 and 3.8.2.4 is to ensure that at least one train of AC and DC electrical distribution buses are OPERABLE to support equipment required to be OPERABLE. 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 3.8.10 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 shutdown, but would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as administrative as it is a clarification of the intent of CTS 3.0.3 that does not result in a technical change to the CTS.

A.3 (Unit 2 only) CTS 3.8.2.2 only provides the requirements for the unit AC electrical power distribution subsystems. The Specification does not provide any requirements for the Unit 1 AC electrical power distribution subsystems. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of OPERABLE – OPERABILITY requires all attendant equipment to be capable of performing its required function, and includes necessary electrical power distribution requirements. Thus, a Unit 1 AC electrical power distribution subsystem may be required to be OPERABLE. In addition, this would require declaring the FHAEV System inoperable when a required Unit 1 bus is inoperable. Unit 2 ITS LCO 3.8.10 requires a Unit 1 electrical power distribution subsystem to be OPERABLE to support equipment required to be OPERABLE. ITS 3.8.10 ACTION B has been added to immediately declare associated Fuel Handling Area Exhaust Ventilation (FHAEV) System inoperable when a required Unit 1 AC electrical power distribution subsystem is inoperable.

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

This changes the Unit 2 CTS by providing an explicit LCO and ACTION for the Unit 1 AC electrical power distribution subsystem.

The purpose of CTS 3.8.2.2 is to ensure at least one train of electrical power distribution system is OPERABLE. The explicit requirements for a Unit 1 electrical power distribution subsystem are not included in CTS 3.8.2.2. However, the FHAEV System, a shared system between the Units, is powered from Unit 1. The added LCO requirement is consistent with the CTS since the definition of OPERABLE-OPERABILITY requires all attendant equipment to be capable of performing its required function, and the added ACTION is also consistent with the CTS. This change is designated as administrative because the Unit 2 CTS requirements are unchanged.

A.4 (Unit 2 only) CTS 3.8.2.2 and CTS 3.8.2.4 are applicable during MODES 5 and 6. However, the CTS 3.8.2.2 Action and CTS 3.8.2.4 Action require movement of irradiated fuel assemblies to be suspended if the required AC or DC electrical equipment is inoperable. ITS 3.8.10 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This changes the Unit 2 CTS by adding the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment.

The purpose of CTS 3.8.2.2 and CTS 3.8.2.4 is to ensure that the appropriate AC and DC buses are OPERABLE to support equipment required to be OPERABLE. This change adds the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This Applicability is consistent with the Applicability of Unit 1 CTS 3.8.2.2 and CTS 3.8.2.4, and consistent with the Unit 2 CTS 3.8.2.2 and 3.8.2.4 Actions, which state to suspend movement of irradiated fuel when the AC and DC buses are inoperable. This change is designated as administrative as it is a clarification of the intent of Unit 2 CTS 3.8.2.2 and Unit 2 CTS 3.8.2.4 that does not result in a technical change to the Unit 2 CTS.

A.5 (Unit 1 only) CTS 3.8.2.2 Applicability and CTS 3.8.2.4 Applicability include "during movement of irradiated fuel." ITS 3.8.10 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment." This changes the Unit 1 CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.8.2.2 and CTS 3.8.2.4, with respect to fuel handling, is to ensure adequate AC and DC buses are available to power equipment required to mitigate a fuel handling accident event. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, in lieu of the current wording which just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the Unit 1 CTS.

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DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

MORE RESTRICTIVE CHANGES

M.1 CTS LCO 3.8.2.2 requires a minimum of one 4160 V emergency bus, one 600 V emergency bus, and two 120 VAC vital buses to be OPERABLE. CTS LCO 3.8.2.4 requires one 250 VDC bus to be OPERABLE. The existing requirement of CTS LCO 3.8.2.2 and LCO 3.8.2.4 for distribution buses to be OPERABLE during shutdown conditions is not specific as to what the system must be powering. ITS 3.8.10 specifies that the necessary portions of Train A and Train B AC, Train A and Train B 250 VDC, and Train A and Train B 120 VAC vital bus electrical power distribution subsystems must 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 change adds a requirement that the applicable portions of Train A and Train B AC, Train A and Train B 250 VDC, and Train A and Train B 120 VAC vital bus electrical power distribution subsystems must be OPERABLE when required to support equipment required to be OPERABLE by the Technical Specifications. This could require more buses 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 3.8.2.2 and CTS 3.8.2.4 is to ensure that at least one train of AC, DC and 120 VAC vital bus electrical power distribution systems are OPERABLE. This change adds a requirement that the applicable portions of Train A and Train B AC, Train A and Train B 250 VDC, and Train A and Train B 120 VAC vital bus electrical power distribution subsystems must be OPERABLE when required to support equipment required to be OPERABLE by the Technical Specifications. This added restriction conservatively assures the needed electrical power distribution buses are OPERABLE, even if this results in both the trains of one or more of the electrical power distribution systems being required. Since 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 all CORE ALTERATIONS, 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 since the additions represent restrictions consistent with implicit assumptions for operation in shutdown conditions (required equipment receiving the necessary required power), and these restrictions are not currently imposed by the Technical Specifications. This change is designated as more restrictive because it adds a new requirement to the CTS.

M.2 CTS 4.8.2.2 and CTS 4.8.2.4.1 state the specified buses shall be determined OPERABLE by verifying correct breaker alignment and "indicated power availability." ITS SR 3.8.10.1 requires the verification of correct breaker

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

alignments and "voltage" to required AC, DC, and 120 VAC vital buses electrical power distribution subsystems. This changes the CTS by requiring the verification of the correct voltages to the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems, whereas the CTS only requires verification of indicated power availability.

The purpose of this change is to ensure proper voltage is supplied to the required AC, DC, and 120 VAC vital buses electrical power distribution subsystems. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. Proper voltage from the required subsystems ensures proper voltage is supplied to the required safety features. This change is designated as more restrictive because the ITS requires verification of the correct voltage, whereas the CTS only requires a verification of indicated power availability.

M.3 (Unit 2 only) CTS 3.8.2.2 requires one AC electrical power distribution subsystem to be OPERABLE. The required AC electrical power distribution subsystem buses are Unit 2 buses. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC buses) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE-OPERABILITY" requires all attendant equipment to be capable of performing its required function. However, there are no specific requirements in CTS 3.8.2.2 requiring the testing of the Unit 1 AC electrical power distribution subsystem buses that support the FHAEV System. Unit 2 ITS LCO 3.8.10 requires a Unit 1 electrical power distribution subsystem to support equipment required to be OPERABLE. This change is discussed in DOC A.3. An explicit SR (ITS SR 3.8.10.1) has been added which requires the verification of correct breaker alignments and voltage to the required Unit 1 electrical power distribution subsystem. This changes the Unit 2 CTS by explicitly requiring a Surveillance Requirement for the Unit 1 AC electrical power distribution subsystem required to be OPERABLE to support Unit 2 operation.

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.10.1) has been added which requires the verification of correct breaker alignments and voltage to required Unit 1 AC electrical power distribution subsystem. The added Surveillance helps to ensure the required Unit 1 AC electrical power distribution subsystem remains OPERABLE. This change is designated as more restrictive because an additional Surveillance Requirement will be applicable to the Unit 2 Technical Specifications.

<u>RELOCATED SPECIFICATIONS</u>

None

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.2 requires the AC electrical buses to be OPERABLE and "energized." CTS 4.8.2.2 also requires the AC buses to be demonstrated OPERABLE and "energized" by verifying correct breaker alignment and indicated power availability. CTS LCO 3.8.2.4 requires the DC bus to be "energized" and OPERABLE. CTS 4.8.2.4.1 requires the verification that the DC bus is determined OPERABLE and "energized" by verifying correct breaker alignment and indicated power availability. ITS LCO 3.8.10 requires the applicable electrical power distribution subsystems to be OPERABLE and ITS SR 3.8.10.1 requires the verification of correct breaker alignments and voltage to each required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by moving the procedural detail that the buses must be “energized” 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 electrical power distribution subsystems to be OPERABLE and requires the verification of correct breaker alignment and voltage to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. 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.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.2 requires AC electrical buses to be OPERABLE and specifies nominal bus voltages. CTS LCO 3.8.2.4 requires a 250 VDC bus to be OPERABLE and specifies bus voltage. ITS LCO 3.8.10 requires necessary portions of the AC, DC, and 120 VAC vital bus electrical power distribution subsystems to be OPERABLE to support equipment required to be OPERABLE. ITS SR 3.8.10.1 requires the verification of correct breaker alignment and voltage to each required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by moving description of the buses (including the nominal bus voltages) from the Specification to the Bases. Other changes to CTS LCO 3.8.2.2 and CTS LCO 3.8.2.4 are discussed in DOCs M.1 and LA.1.

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 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

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

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

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 Action a specifies the compensatory actions for a required inoperable AC electrical power distribution subsystem. CTS 3.8.2.4 Action a specifies the compensatory actions for an inoperable required DC electrical power distribution subsystem. The compensatory actions for both Specifications are identical. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.10 Required Action A.2.3 requires the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50ºF or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of the CTS 3.8.2.2 Action a and CTS 3.8.2.4 Action a is to suspend any positive reactivity additions that could affect the SDM of the reactor core. 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 DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water). Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross-reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

indicated in the Discussion of Changes for CTS LCO 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50ºF or less in any one-hour period in MODE 5. This limitation has been deleted. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

CTS

3.8 ELECTRICAL POWER SYSTEMS (1)

3.8.10 Distribution Systems - Shutdown

LCO 3.8.22, LCO 3.8.24

LCO 3.8.10 The necessary portion (5) of the AC, DC, and 120V AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. (2)

INSERT 1 (3)

(Unit 2 only)

APPLICABILITY: MODES 5 and 6,
During movement of recently irradiated fuel assemblies.

INSERT 1A (5)

ACTIONS

- NOTE -

LCO 3.0.3 is not applicable.

3.8.2.2 Action, 3.8.2.4 Action

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or 120V AC vital bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately (2)
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies.	Immediately (4)
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	

1 **INSERT 1**
(Unit 2 only)

DOC A.3 and the Unit 1 AC electrical power distribution subsystem

5 **INSERT 1A**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

CTS

Distribution Systems - Shutdown
3.8.10

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
3.8.2.2 Action, 3.8.2.4 Action	A.2.4	Initiate actions to restore required AC, DC, and 120 V AC vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
	AND		
	A.2.5	Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately

(2)

INSERT 2 (3)
⟨Unit 2 only⟩

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.8.2.2, 4.8.2.4.1	SR 3.8.10.1	Verify correct breaker alignments and voltage to required AC, DC, and 120 V AC vital bus electrical power distribution subsystems.	7 days

(2)

INSERT 3 ⟨Unit 2 only⟩ (3)

3

INSERT 2
(Unit 2 only)

DOC A.3	B. Required Unit 1 AC electrical power distribution subsystem inoperable.	B.1 Declare Fuel Handling Area Exhaust Ventilation (FHAEV) System inoperable.	Immediately

3

INSERT 3
(Unit 2 only)

DOC M.3 and required Unit 1 AC electrical power distribution subsystem

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

1. Typographical/grammatical error corrected.

2. Changes have been made to be consistent with changes made in other Specifications.

3. Additional requirements have been added to ISTS LCO 3.8.10 for Unit 2 to ensure that the appropriate Unit 1 electrical power distribution subsystem is OPERABLE during the movement of irradiated fuel assemblies in the auxiliary building. This modification was necessary since the Fuel Handling Area Exhaust Ventilation (FHAEV) System is powered by Unit 1 AC electrical power distribution subsystems. In addition, ITS 3.8.10 ACTION B for Unit 2 has been added to cover the situation when the required Unit 1 AC electrical power distribution subsystem is inoperable.

4. The brackets are removed and the proper plant specific information/value is provided.

5. The Applicability has been clarified, since CNP has two units and irradiated fuel movement can occur in three different locations.

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

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

2

BASES

120V

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

14

The initial conditions of Design Basis Accident and transient analyses in the FSAR, Chapter [6] (Ref. 1) and Chapter [15] (Ref. 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The AC, DC, and AC vital bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. 1 1 2 2 2

120V

120V

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.

120 V

5

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: 2 2

INSERT 1

a. The unit can be maintained in the shutdown or refueling condition for extended periods, 3

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3

c. Adequate power is provided to mitigate events postulated during shutdown, such as a fuel handling accident [involving handling recently irradiated fuel. Due to radioactive decay, AC and DC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)]. 1 1

Distribution Systems — Shutdown

The AC and DC electrical power distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). 2

ies

5 **INSERT 1**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific ~~plant~~ unit 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 power distribution ~~system~~ sub 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 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., fuel handling accidents ~~(involving handling recently irradiated fuel)~~).

APPLICABILITY

The AC ~~and~~ DC electrical power distribution subsystems ~~required~~ to be OPERABLE in MODES 5 and 6, and during movement of ~~recently~~ irradiated fuel assemblies, provide assurance that: INSERT 3 INSERT 4

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

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

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

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

The AC, DC, and 120V AC vital bus electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9.

ACTIONS

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

5 **INSERT 2**
(Unit 2 only)

(including the Unit 1 electrical power distribution subsystem)

5 **INSERT 3**

, and 120 VAC vital bus

5 **INSERT 4**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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BASES

ACTIONS (continued)

A.1, A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and [recently] irradiated fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of [recently] irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (Mode 5) or boron concentration (Mode 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

1

8 INSERT 5

INSERT 6 8

6

6

moderator temperature coefficient

4

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

3

5

and 120 VAC vital bus

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.

8

INSERT 5

specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM),"

8

INSERT 6

specified in LCO 3.9.1, "Boron Concentration,"

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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. INSERT 7 (5) (Unit 2 only)

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the AC, DC, and 120 V 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. (5)

REFERENCES

~~1. FSAR, Chapter [6].~~ (2)

(1) 2. 1. FSAR, Chapter ~~15~~ 14. (1) (2)

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5

INSERT 7
(Unit 2 only)

B.1

When the Fuel Handling Area Exhaust Ventilation (FHAEV) System is required to be OPERABLE, and the required Unit 1 AC electrical power distribution subsystem is inoperable, the minimum required electrical power is not available. It is therefore required to declare the FHAEV System inoperable. Since the Unit 1 AC electrical power distribution subsystem only affects the FHAEV System, the associated portions of the FHAEV System are declared inoperable and the applicable ACTIONS of LCO 3.7.13, "Fuel Handling Area Exhaust Ventilation (FHAEV) System," are entered.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.10 BASES, DISTRIBUTION SYSTEMS - SHUTDOWN

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

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

5. Changes are made to reflect changes made to the Specification.

6. Grammatical/spelling error corrected.

7. Changes are made to be consistent with the Specification.

8. Changes are made to be consistent with other places in the Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

There are no specific NSHC discussions for this Specification.

ATTACHMENT 11

Relocated/Deleted Current Technical Specifications (CTS)

CTS 3/4.8.3, Alternative AC Power Sources

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

CTS 3/4.8.3

LA.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with D.C. Cook Unit 2.

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CTS 3/4.8.3

LA.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with Cook Nuclear Plant Unit 1.

DISCUSSION OF CHANGES
CTS 3/4.8.3, ALTERNATIVE A.C. POWER SOURCES

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 6 – Relocation of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS LCO 3.8.3.1 requires the steady state bus voltage for the manual alternate reserve source (i.e., a qualified offsite source) to be greater than or equal to 90% of the nominal bus voltage whenever the manual alternate reserve source (69 kV) is connected to more than two buses. The CTS 3.8.3.1 Action covers the situation when the bus voltage is less than 90% nominal. The action is to adjust the load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit. The ITS does not include the requirements for the steady state bus voltage for the manual alternate reserve source. This changes the CTS by moving the explicit requirements for the steady state bus voltage for the manual alternate reserve source, including the Action and Surveillance Requirement, 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 LCO 3.8.3.1 is to ensure the steady state bus voltage for the manual alternate reserve source is greater than 90% of the nominal bus voltage whenever the manual alternate reserve source (69 kV) is connected to more than two buses. ITS SR 3.8.9.1 and SR 3.8.10.1 require the verification of correct breaker alignments and voltage to each required 4.16 kV emergency bus every 7 days. This Surveillance will continue to ensure the proper voltage is available on each bus when the auxiliary, preferred, or alternate reserve source is supplying the associated bus. If the bus voltage is not adequate, then the bus will be declared inoperable and the appropriate Technical Specification Conditions and Required Action will be entered. These Technical Specification requirements are sufficient to ensure the buses are OPERABLE with the appropriate voltages regardless of the source of supply. These requirements are proposed to be relocated to the TRM since the Technical Specifications provides the appropriate requirements on AC Sources and the distribution system to ensure the 4.16 kV emergency buses are energized to the appropriate voltage. This change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the UFSAR and any changes to the TRM are

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DISCUSSION OF CHANGES
CTS 3/4.8.3, ALTERNATIVE A.C. POWER SOURCES

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.

LESS RESTRICTIVE CHANGES

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.8.3, ALTERNATIVE A.C. POWER SOURCES

There are no specific NSHC discussions for this Specification.

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