DISCUSSION OF CHANGES
ITS: 3.6.4.2 - SECONDARY CONTAINMENT ISOLATION VALVES (SCIVs)

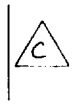
ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 ITS 3.6.4.2 ACTIONS Note 2 ("Separate Condition entry is allowed for each penetration flow path") provides explicit instructions for proper application of the ACTIONS for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," this ACTIONS Note provides direction consistent with the intent of the existing ACTIONS for inoperable isolation valves. It is intended that each inoperable penetration flow path is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specification, this change is considered administrative. Similarly, ISTS 3.6.4.2 ACTIONS Note 3 facilitates the use and understanding of the intent to consider the affect of inoperable isolation valves on other systems. For a system made inoperable by inoperable SCIVs the applicable ACTIONS for that system also apply. With ITS LCO 3.0.6, this intent would not necessarily apply. This clarification is consistent with the intent and interpretation of the existing Technical Specifications, and is therefore considered administrative.

A.3 The CTS 3.6.5.2 Action does not specify penetrations with one or two isolation valves. However, ITS 3.6.4.2 Condition A only applies if one valve in a penetration is inoperable. This inherently ensures maintaining "at least one isolation valve OPERABLE." This change is a presentation preference and is administrative in nature.

A.4 The revised presentation of the CTS 3.6.5.2 Action (based on the BWR ISTS, NUREG-1434, Rev. 1) does not explicitly detail options to "restore...to OPERABLE status." This action is always an option, and is implied in all Actions. Omitting this action from the ITS is editorial.



DISCUSSION OF CHANGES
ITS: 3.6.4.2 - SECONDARY CONTAINMENT ISOLATION VALVES (SCIVs)

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.6.5.1.b requires all secondary containment penetrations not capable of being closed by OPERABLE secondary containment automatic isolation dampers and required to be closed during accident conditions to be closed. This can be met by a single manual valve being closed. CTS 3.6.5.2 requires the specified secondary containment ventilation system automatic isolation dampers to be OPERABLE. CTS 3/4.6.5.2 does not prescribe limitations on manual valves. ITS LCO 3.6.4.2 requires each SCIV to be OPERABLE and proposed SR 3.6.4.2.1 requires the verification that each secondary containment isolation manual valve and blind flange that is not locked, sealed or otherwise secured and is required to be closed during accident conditions is closed. In the ITS, the SCIVs include both the automatic isolation dampers as well as secondary containment manual isolation valves. Since some penetration flow paths include more than one manual isolation valve, this change is more restrictive on plant operation. This change is necessary to ensure the position of all secondary containment isolation valves and blind flanges are properly controlled to ensure design basis assumptions are met. 

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The list of secondary containment isolation dampers referenced in CTS 3/4.6.5.2 and appearing in CTS Table 3.6.5.2-1 with their isolation times, are proposed to be relocated to the Technical Requirements Manual consistent with Generic Letter 91-08. In addition, due to the relocation, the name of the isolation dampers has been generically changed to Secondary Containment Isolation Valves (SCIV). The listing of valves which are subject to the Secondary Containment Isolation Valve Specification are related to design and are not necessary for ensuring the secondary containment isolation valves are maintained OPERABLE. ITS 3.6.4.2 requires each SCIV to be OPERABLE and SR 3.6.4.2.2 requires verification that the isolation times are within limits. These requirements are adequate for ensuring each required SCIV is maintained OPERABLE. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the Technical Requirements Manual will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LD.1 The Frequency for performing CTS 4.6.5.2.b has been extended from 18 months to 24 months in proposed SR 3.6.4.2.3 to facilitate a change to the LaSalle 1 and 2 refuel cycle from 18 months to 24 months. The proposed change will allow this Surveillance to extend the Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed Specification 3.0.2). This proposed 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.

SR 3.6.4.2.3 verifies each automatic secondary containment isolation valve (SCIV) actuates to the isolation position on an actual or simulated automatic isolation signal. This is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. Extending the Surveillance interval for this verification is acceptable in part because the valves are operated more frequently every 92 days to satisfy the requirements of SR 3.6.4.2.2, which verifies isolation times are within limits. These tests will detect significant failures affecting valve operation that would be detected by conducting the 24 month surveillance test. In addition, the Secondary Containment Isolation system active components and power supplies are designed with redundancy to meet the single active failure criteria, which will ensure system availability in the event of a failure of one of the system components. Also the actual or simulated isolation signal overlaps Logic System Functional Testing performed in SR 3.3.6.2.4 of Secondary Containment Isolation Instrumentation. As stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

> "Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) Based on the redundancy and the above discussion, it is concluded that the impact, if any, on system availability is minimal as a result of the change to the SCIV test intervals.

Reviews of historical maintenance and surveillance data have shown that this test normally passes the Surveillance 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. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

"Specific"

L.1 An allowance is proposed for intermittently opening closed secondary containment isolation valves under administrative control as is allowed in the existing primary containment Technical Specifications (CTS 3.6.3) and in ITS 3.6.1.3. The administrative controls consist of stationing a dedicated operator, who is in continuous communication with the control room, at the controls of the isolation device. The allowance is presented in ITS 3.6.4.2 ACTIONS Note 1 and SR 3.6.4.2.1 Note 2. Opening of secondary containment penetrations on a intermittent basis is required for many of the same reasons as primary containment penetrations and the potential impact on consequences is less significant. The proposed allowance is acceptable due to the low probability of an event that would release radioactivity in the secondary containment during the short time in which the SCIV is open and the administrative controls established to ensure the affected penetration can be isolated when a need for secondary containment isolation is indicated.

L.2 In the event both dampers in a penetration are inoperable in an open penetration, the CTS 3.6.5.2 Action, which requires maintaining one isolation damper OPERABLE, would not be met and an immediate shutdown would be required. ITS 3.6.4.2 ACTION B provides 4 hours prior to commencing a required shutdown. This proposed 4 hour period is consistent with the existing time allowed for conditions when the secondary containment is inoperable. In the event a valve or blind flange is inoperable in a single valve/blind flange penetration, CTS 4.6.5.1.b.2 would not be met, requiring CTS 3.6.5.1 Action a or b to be entered, as appropriate. CTS 3.6.5.1 Action a requires the valve/blind

TECHNICAL CHANGES - LESS RESTRICTIVE

L.2 (cont'd) flange to be restored within 4 hours or to shutdown the unit, and CTS 3.6.5.1 Action b requires immediate suspension of various shutdown evolutions. ITS 3.6.4.2 Required Action A.1 provides 8 hours to commence the unit shutdown or suspend various shutdown evolutions. The proposed changes will provide consistency in ACTIONS for these various secondary containment degradations. These changes to CTS 3.6.5.2 are acceptable due to the low probability of an event requiring the secondary containment during the short time in which continued operation is allowed and the capability to isolate a secondary containment penetration is lost. In addition, the penetrations affected by the proposed 8 hour time period are of a small diameter, thus their impact on the secondary containment is not as great as the automatic isolation dampers. (B) (B) (B)

L.3 CTS 4.6.5.2.a is proposed to be deleted. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, or replacement of a component, post maintenance testing is required to demonstrate OPERABILITY of the system or component. After restoration of a component that caused a required SR to be failed, ITS SR 3.0.1 requires the appropriate SRs (in this case SR 3.6.4.2.2) to be performed to demonstrate the OPERABILITY of the affected components. Therefore, explicit post maintenance Surveillance Requirements in CTS 4.6.5.2 are not required and have been deleted from the Technical Specifications.

L.4 The requirement to perform CTS 4.6.5.2.b during COLD SHUTDOWN or REFUELING has not been included in proposed SR 3.6.4.2.3. The proposed Surveillance (for a functional test of each secondary containment isolation valve) does not include the restriction on plant conditions. All isolation valves can be adequately tested in other than Cold Shutdown or Refueling, without jeopardizing safe plant operations. The control of the plant 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 plant conditions for the Surveillance.

L.5 The phrase "actual or," in reference to the isolation test signal in CTS 4.6.5.2.b, has been added to proposed SR 3.6.4.2.3, which verifies that each SCIV actuates on an automatic isolation signal. This allows satisfactory automatic SCIV isolations for other than Surveillance purposes to be used to fulfill the Surveillance Requirement. Operability is adequately demonstrated in either case since the SCIV itself cannot discriminate between "actual" or "test" signals.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.6 CTS 4.6.5.1.b.2 requires verification that certain secondary containment penetrations are isolated. An allowance is proposed to allow the verification of the isolation devices used to isolate the penetrations in high radiation areas to be verified by use of administrative controls. The allowance is presented in ITS 3.6.4.2 Required Action A.2 Note and SR 3.6.4.2.1 Note 1. This is acceptable since the isolation devices are initially verified to be in the proper position and access to them is restricted during operation due to the high levels of radiation in the area. Therefore, the probability of misalignment of the isolation devices is acceptably small. If for some reason these devices are opened (e.g., maintenance), the associated procedure or work package would require their closure after work is completed. The Required Action or Surveillance may be performed by reviewing that no work was performed in the associated radiation area since the isolation device was closed or if work was performed in that area that the closure was verified upon completion of the work if the valve was opened.

L.7 The requirements of CTS 4.6.5.1.b.2, related to verification of the position of secondary containment isolation penetrations not capable of being closed by OPERABLE secondary containment isolation valves (SCIVs), are revised in proposed SR 3.6.4.2.1 and ITS 3.6.4.2 Required Action A.2 (Note 2) to exclude verification of manual valves and blind flanges that are locked, sealed, or otherwise secured in the correct position. The purpose of CTS 4.6.5.1.b.2 is to ensure that manual secondary containment isolation devices that may be misaligned are in the correct position to help ensure that post accident leakage of radioactive fluids or gases outside the secondary containment boundary is within design and analysis limits. For manual valves or blind flanges that are locked, sealed or otherwise secured in the correct position, the potential of these devices to be inadvertently misaligned is low. In addition, manual valves and blind flanges that are locked, sealed or otherwise secured in the correct position are verified to be in the correct position prior to locking, sealing, or securing. As a result of this control of the position of these manual secondary containment isolation devices, the periodic Surveillance of these devices in CTS 4.6.5.1.b.2 is not required to help ensure that post accident leakage of radioactive fluids or gases outside the secondary containment boundary is maintained within design and analysis limits. This change also provides the benefit of reduced radiation exposure to plant personnel through the elimination of the requirement to check the position of manual values and blind flanges, located in radiation areas, that are locked, sealed or otherwise secured in the correct position.

RELOCATED SPECIFICATIONS

None

⟨CTS⟩

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
⟨4.6.1.1.d⟩ SR 3.6.1.1.1	Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.	----NOTE---- SR 3.0.2 is not applicable ----------
	The leakage rate acceptance criterion is ≤ 1.0 L_a. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, the leakage rate acceptance criteria are < 0.6 L_a for the Type B and Type C tests, and < 0.75 L_a for the Type A test.	In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions
⟨4.6.1.1.e⟩ SR 3.6.1.1.2	Verify primary containment structural integrity in accordance with the Primary Containment Tendon Surveillance Program.	In accordance with the Primary Containment Tendon Surveillance Program
SR 3.6.1.1.3	Verify drywell-to-suppression chamber bypass leakage is less than or equal to the acceptable $A\sqrt{k}$ design value of 0.030 ft^2. However, during the first unit startup following bypass leakage testing performed in accordance with this SR, the acceptance criterion is ≤10% of the acceptable $A\sqrt{k}$ design value of 0.030 ft^2.	24 months AND --- NOTE --- Only required after two consecutive tests fail and continues until two consecutive tests pass ---- 12 months

Δ C

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1434, REVISION 1
ITS: 3.6.1.1 - PRIMARY CONTAINMENT

1. A 10 CFR 50 Appendix J Testing Program Plan has been added to Section 5.5. The program references the requirements of 10 CFR 50 Appendix J and approved exemptions, therefore, the surveillances have been modified to reference the program. This is consistent with Current Licensing Basis and with proposed TSTF-52.

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

3. The drywell-to-suppression chamber bypass leakage Surveillance Requirement (ITS SR 3.6.1.1.3) has been based on CTS 4.6.2.1.d and BWR/4 ISTS (NUREG-1433) SR 3.6.1.1.2. The Frequency of ISTS SR 3.6.1.1.2, (ITS SR 3.6.1.1.3) has been changed to reflect the change in the LaSalle 1 and 2 refuel cycle. 

BASES

BACKGROUND (continued)

This Specification ensures that the performance of the primary containment, in the event of a DBA, meets the assumptions used in the safety analyses of References 1 and 2. SR 3.6.1.1.1 leakage rate requirements are in conformance with 10 CFR 50, Appendix J (Ref. 3), as modified by approved exemptions.

Design Basis Accident (DBA) — 1

, Option B — 1

APPLICABLE SAFETY ANALYSES

The safety design basis for the primary containment is that it must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate.

The DBA that postulates the maximum release of radioactive material within primary containment is a LOCA. In the analysis of this accident, it is assumed that primary containment is OPERABLE such that release of fission products to the environment is controlled by the rate of primary containment leakage.

Analytical methods and assumptions involving the primary containment are presented in References 1 and 2. The safety analyses assume a nonmechanistic fission product release following a DBA, which forms the basis for determination of offsite doses. The fission product release is, in turn, based on an assumed leakage rate from the primary containment. OPERABILITY of the primary containment ensures that the leakage rate assumed in the safety analyses is not exceeded.

0.635 — 5 — 1

The maximum allowable leakage rate for the primary containment (L_a) is (0.437)% by weight of the containment and drywell air per 24 hours at the maximum peak containment pressure (P_a) of (11X.5) psig (Ref. 4).

1 — design basis LOCA

39.9 — 5 — A

Primary containment satisfies Criterion 3 of the NRC Policy Statement. — 1

10 CFR 50.36(c)(2)(ii).

LCO

Primary containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required 10 CFR 50, Appendix J, leakage test. At this time, the combined Type B and C leakage must be ≤ 0.6 L_a, and the overall Type A leakage must be ≤ 0.75 L_a. Compliance with this LCO will ensure a primary containment

Primary Containment Leakage Rate Testing Program

3

met.

limits

applicable

In addition, the leakage from the drywell to the suppression chamber must be limited to ensure the primary containment pressure does not exceed design limits.

(continued)

3 Insert SR 3.6.1.1.3

SR 3.6.1.1.3

The analyses results in Reference 6 are based on a maximum drywell-to-suppression chamber bypass leakage. This Surveillance ensures that the actual bypass leakage is less than or equal to the acceptable $A/\sqrt{k}$ design value of 0.030 ft^2 assumed in the safety analysis. For example, with a typical loss factor of 3 or greater, the maximum allowable leakage area would be 0.052 ft^2, corresponding to a 3-in line size.

As left bypass leakage, prior to the first startup after performing a required bypass leakage test, is required to be $\leq$ 10% of the drywell-to-suppression chamber bypass leakage limit when tested with an initial differential pressure of 1.5 psi. At all other times between required leakage rate tests, the acceptance criteria is based on design $A/\sqrt{k}$. At the design $A/\sqrt{k}$ the containment temperature and pressurization response are bounded by the assumptions of the safety analysis. The leakage test is performed every 24 months, consistent with the difficulty of performing the test, risk of high radiation exposure, and the remote possibility of a component failure that is not identified by some other primary containment SR. Two consecutive test failures, however, would indicate unexpected primary containment degradation, in this event, as the Note indicates, increasing the Frequency to once every 12 months is required until the situation is remedied as evidenced by passing two consecutive tests. C

BASES

BACKGROUND (continued)

DBA. Not maintaining air lock integrity or leak tightness may result in a leakage rate in excess of that assumed in the unit safety analysis.

APPLICABLE SAFETY ANALYSES

The DBA that postulates the maximum release of radioactive material within primary containment is a LOCA. In the analysis of this accident, it is assumed that primary containment is OPERABLE, such that release of fission products to the environment is controlled by the rate of primary containment leakage. The primary containment is designed with a maximum allowable leakage rate (L_a) of [0.437]% by weight of the containment and drywell air per 24 hours at the calculated maximum peak containment pressure (P_a) of [11.5] psig. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air lock.

Primary containment air lock OPERABILITY is also required to minimize the amount of fission product gases that may escape primary containment through the air lock and contaminate and pressurize the secondary containment.

Primary containment air locks satisfy Criterion 3 of the NRC Policy Statement.

LCO

As part of the primary containment, the air lock safety function is related to control of containment leakage rates following a DBA. Thus, the air lock structural integrity and leak tightness are essential to the successful mitigation of such an event.

The primary containment air locks are required to be OPERABLE. For each air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door to be open at a time. This provision ensures that a gross breach of primary containment does not exist when primary containment is required to be OPERABLE. Closure of a single door in each air lock is

(continued)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

BASES

BACKGROUND

Following a Design Basis Accident (DBA), the RHR Suppression Pool Cooling System removes heat from the suppression pool. The suppression pool is designed to absorb the sudden input of heat from the primary system. In the long term, the pool continues to absorb residual heat generated by fuel in the reactor core. Some means must be provided to remove heat from the suppression pool so that the temperature inside the primary containment remains within design limits. This function is provided by two redundant RHR suppression pool cooling subsystems. The purpose of this LCO is to ensure that both subsystems are OPERABLE in applicable MODES.

Each RHR subsystem contains a pump and two heat exchangers in series and is manually initiated and independently controlled. The two RHR subsystems perform the suppression pool cooling function by circulating water from the suppression pool through the RHR heat exchangers and returning it to the suppression pool. RHR service water, circulating through the tube side of the heat exchangers, exchanges heat with the suppression pool water and discharges this heat to the external heat sink.

The heat removal capability of one RHR subsystem is sufficient to meet the overall DBA pool cooling requirement to limit peak temperature to 185°F for loss of coolant accidents (LOCAs) and transient events such as a turbine trip or a stuck open safety/relief valve (S/RV). S/RV leakage and Reactor Core Isolation Cooling System testing increase suppression pool temperature more slowly. The RHR Suppression Pool Cooling System is also used to lower the suppression pool water bulk temperature following such events.

APPLICABLE SAFETY ANALYSES

Reference 1 contains the results of analyses used to predict primary containment pressure and temperature following large and small break LOCAs. The intent of the analyses is to demonstrate that the heat removal capacity of the RHR Suppression Pool Cooling System is adequate to maintain the primary containment conditions within design limits. The

(continued)

Insert B WR/4 ISTS B 3.6.2.4 [1]
(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

Reference 1 contains the results of analyses used to predict primary containment pressure and temperature following large and small break loss of coolant accidents. The intent of the analyses is to demonstrate that the pressure reduction capacity of the RHR Suppression Pool Spray System is adequate to maintain the primary containment conditions within design limits. The time history for primary containment pressure is calculated to demonstrate that the maximum pressure remains below the design limit.

The RHR Suppression Pool Spray System satisfies Criterion 3 of ~~the NRC Policy Statement~~. (10 CFR 50.36(c)(2)(ii)) [2]

LCO

In the event of a DBA, a minimum of one RHR suppression pool spray subsystem is required to mitigate potential bypass leakage paths and maintain the primary containment peak pressure below the design limits (Ref. 1). To ensure that these requirements are met, two RHR suppression pool spray subsystems must be OPERABLE with power from two safety related independent power supplies. [5] Therefore, in the event of an accident, at least one subsystem is OPERABLE assuming the worst case single active failure. An RHR suppression pool spray subsystem is OPERABLE when one of the pumps, the [3] heat exchanger, and associated piping, valves, instrumentation, and controls are OPERABLE. [C]

APPLICABILITY

In MODES 1, 2, and 3, a DBA could cause pressurization of primary containment. In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining RHR suppression pool spray subsystems OPERABLE is not required in MODE 4 or 5.

ACTIONS

A.1

With one RHR suppression pool spray subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status within 7 days. [6] In this condition, the remaining OPERABLE RHR suppression pool spray subsystem is adequate to perform the primary containment bypass leakage mitigation function.

(continued)

Insert Page B 3.6-68b

BASES

ACTIONS

A.1 (continued)

maintaining secondary containment during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring secondary containment OPERABILITY) occurring during periods where secondary containment is inoperable is minimal.

B.1 and B.2

If the secondary containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1, C.2, and C.3

Movement of irradiated fuel assemblies in the ~~primary or~~ secondary containment, CORE ALTERATIONS, and OPDRVs can be postulated to cause fission product release to the secondary containment. In such cases, the secondary containment is the only barrier to release of fission products to the environment. CORE ALTERATIONS and movement of irradiated fuel assemblies must be immediately suspended if the secondary containment is inoperable.

Suspension of these activities shall not preclude completing an action that involves moving a component to a safe position. Also, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend

(continued)

BASES

ACTIONS

C.1, C.2, and C.3 (continued)

movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.1

This SR ensures that the {secondary containment} boundary is sufficiently leak tight to preclude exfiltration ~~under expected wind conditions~~. The 24 hour Frequency of this SR was developed based on operating experience related to {secondary containment} vacuum variations during the applicable MODES and the low probability of a DBA occurring ~~between surveillances~~.

Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal {secondary containment} vacuum condition.

SR 3.6.4.1.2 ~~and SR 3.6.4.1.3~~

Verifying that {secondary containment} ~~equipment hatches and~~ access door~~s~~ ~~are~~ closed ensures that the infiltration of outside air of such a magnitude as to prevent maintaining the desired negative pressure does not occur. Verifying that all such ~~openings~~ are closed provides adequate assurance that exfiltration from the {secondary containment} will not occur. In this application, the term "sealed" has no connotation of leak tightness. Maintaining {secondary containment} OPERABILITY requires verifying ~~each~~ door in the access opening is closed, except when the access opening is being used for entry and exit; then, at least one door must remain closed. The 31 day Frequency for ~~these~~ SR~~s~~ has been shown to be adequate based on operating experience, and is considered adequate in view of the other indications of door and hatch status that are available to the operator.

INSERT B3.6.4.12

existing administrative controls on door status

(continued)

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1434, REVISION 1
ITS BASES: 3.6.4.1 - SECONDARY CONTAINMENT

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

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

3. Not used. 

4. Changes have been made to reflect those changes made to the Specification.

5. ISTS SRs 3.6.4.1.4 and 3.6.4.1.5 are tests that ensure the Secondary Containment is OPERABLE; the leak tightness of the Secondary Containment boundary is within the assumptions of the accident analyses. However, they are written in such a manner that they imply that if a SGT subsystem is inoperable, the SRs are failed ("Verify each standby gas treatment (SGT) subsystem will/can..."). As stated above, this is not the intent of the SRs. Therefore, to ensure this misinterpretation cannot occur, the SRs and this Bases description have been rephrased to more clearly convey the original intent of the SRs, to verify the Secondary Containment is OPERABLE. With the new wording, if a SGT subsystem is inoperable, ITS SRs 3.6.4.1.3 and 3.6.4.1.4 will still be met and only the SGT System Specification, LCO 3.6.4.3, will be required to be entered. This is clearly identified in the Bases.

6. The Bases have been modified to provide additional clarity when describing the design of each access opening.

BASES

ACTIONS

B.1 (continued)

with two isolation valves. This clarifies that only Condition A is entered if one SCIV is inoperable in each of two penetrations.

C.1 and C.2

If any Required Action and associated Completion Time cannot be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

D.1, D.2, and D.3

If any Required Action and associated Completion Time cannot be met, the plant must be placed in a condition in which the LCO does not apply. If applicable, CORE ALTERATIONS and the movement of irradiated fuel assemblies in the primary and secondary containment must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, action must be immediately initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

Required Action D.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

(continued)

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1434, REVISION 1
ITS BASES: 3.6.4.2 - SECONDARY CONTAINMENT ISOLATION VALVES (SCIVs)

1. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific nomenclature, number, reference, system description, or analysis description. In addition, with respect to the deletion of the last sentence of the second paragraph in the Background Section, the LaSalle 1 and 2 design does not include any check valve or any automatic valves other than the isolation dampers in secondary containment penetrations that are required to be closed during accident conditions. C

2. This statement has been deleted since it is incorrect. Automatic SCIVs that are de-activated and secured in the closed position are not OPERABLE; they are inoperable.

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

4. Typographical/grammatical error corrected.

5. These changes have been made for consistency with similar phrases in other parts of the Bases and/or to be consistent with the Specification.

6. Editorial change made for enhanced clarity.

7. The words in SR 3.6.4.2.2, stating that the isolation times are in the IST Program have been deleted. The IST Program will not include the times for the SCIVs. They are located in the Technical Requirements Manual.

8. The discussion in the LCO Section about closed valves is modified. This editorial preference is based on an incomplete and misleading discussion of the valves. This change does not modify the requirements or the interpretation of the requirements.

BASES

ACTIONS

C.1, C.2.1, C.2.2, and C.2.3 (continued)

completed within the required Completion Time, the OPERABLE SGT subsystem should be immediately placed in operation. This Required Action ensures that the remaining subsystem is OPERABLE, that no failures that could prevent automatic actuation (have occurred) will, and that any other failure would be readily detected.

An alternative to Required Action C.1 is to immediately suspend activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the unit in a condition that minimizes risk. If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies must be immediately suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Action must continue until OPDRVs are suspended.

The Required Actions of Condition C have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

D.1

If both SGT subsystems are inoperable in MODE 1, 2, or 3, the SGT system may not be capable of supporting the required radioactivity release control function. Therefore, actions are required to enter LCO 3.0.3 immediately.

E.1, E.2, and E.3

When two SGT subsystems are inoperable, if applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the (primary and) secondary containment must be immediately

(continued)

BASES

ACTIONS

E.1, E.2, and E.3 (continued)

suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Action must continue until OPDRVs are suspended.

Required Action E.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each SGT subsystem for ≥ 10 continuous hours ensures that both subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specified test frequencies

(continued)

L.4 Change

Not used.

L.5 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, ComEd has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   This change deletes the requirement associated with CTS 4.6.2.1.d to obtain an NRC review of the test schedule for subsequent tests if any leak rate test result is not within required limits. The subsequent test schedule has already been approved by the NRC. If two consecutive tests have failed, then the test must be performed every 9 months until two consecutive tests pass. The requirement to obtain NRC concurrence with the test schedule is not assumed to be an initiator of any analyzed event and does not impact assumptions of any design basis accident. Additionally, the concurrence is not required or assumed for the mitigation of any accident. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

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

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. This change deletes a requirement to obtain NRC concurrence for a leak rate test schedule that is already approved by the NRC. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   This change does not involve a significant reduction in a margin of safety since the increased test schedule is already approved by the NRC and since experience has shown that the Surveillance normally meets its acceptance criterion when performed at the normal Frequency.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify cooling water temperature supplied to the plant from the CSCS pond is $\leq$ 97.5°F.	24 hours
SR 3.7.3.2	Verify sediment level is $\leq$ 1.5 ft in the intake flume and the CSCS pond.	24 months
SR 3.7.3.3	Verify CSCS pond bottom elevation is $\leq$ 686.5 ft.	24 months

(C)

BASES (continued)

LCO

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

An RHRSW subsystem is considered OPERABLE when:

a. Two pumps are OPERABLE; and

b. An OPERABLE flow path is capable of taking suction from the CSCS service water tunnel and transferring the water to the associated RHR heat exchanger at the assumed flow rate.

An adequate suction source is not addressed in this LCO since the minimum net positive suction head and the maximum suction source temperature are covered by the requirements specified in LCO 3.7.3, "Ultimate Heat Sink (UHS)."

APPLICABILITY

In MODES 1, 2, and 3, the RHRSW System is required to be OPERABLE to support the OPERABILITY of the RHR System for primary containment cooling (LCO 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling" and decay heat removal (LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown"). The Applicability is therefore consistent with the requirements of these systems. 1(c)

In MODES 4 and 5, the OPERABILITY requirements of the RHRSW System are determined by the systems it supports and therefore, the requirements are not the same for all facets of operation in MODES 4 and 5. Thus, the LCOs of the RHR Shutdown Cooling System (LCO 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," LCO 3.9.8, "Residual Heat Removal (RHR)—High Water Level," and LCO 3.9.9, "Residual Heat Removal (RHR)—Low Water Level"), which require portions of the RHRSW System to be OPERABLE, will govern RHRSW System operation in MODES 4 and 5.

(continued)

BASES (continued)

LCO

OPERABILITY of the UHS is based on a maximum water temperature of 97.5°F and a minimum pond water level at or above elevation 690 ft mean sea level. In addition, to ensure the volume of water available in the CSCS pond is sufficient to maintain adequate long term cooling, sediment deposition (in the intake flume and in the pond) must be $\leq$ 1.5 ft and CSCS pond bottom elevation must be $\leq$ 686.5 ft. 1C

APPLICABILITY

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

In MODES 4 and 5, the OPERABILITY requirements of the UHS is determined by the systems it supports. Therefore, the requirements are not the same for all facets of operation in MODES 4 and 5. The LCOs of the systems supported by the UHS will govern UHS OPERABILITY requirements in MODES 4 and 5.

ACTIONS

A.1

If the CSCS pond is inoperable, due to sediment deposition > 1.5 ft (in the intake flume, CSCS pond, or both) or the pond bottom elevation > 686.5 ft, action must be taken to restore the inoperable UHS to an OPERABLE status within 90 days. The 90 day Completion Time is reasonable based on the low probability of an accident occurring during that time, historical data corroborating the low probability of continued degradation (i.e., further excessive sediment deposition or pond bottom elevation changes) of the CSCS pond during that time, and the time required to complete the Required Action.

B.1 and B.2

If the CSCS pond cannot be restored to OPERABLE status within the associated Completion Time, or the CSCS pond is determined inoperable for reasons other than Condition A (e.g., inoperable due to the temperature of the cooling water supplied to the plant from the CSCS pond > 97.5°F), 1C

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

Verification of the CSCS pond temperature ensures that the heat removal capabilities of the RHRSW System and DGCW System are within the assumptions of the DBA analysis. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.3.2

This SR ensures adequate long term (30 days) cooling can be maintained, by verifying the sediment level in the intake flume and the CSCS pond is $\leq$ 1.5 feet. Sediment level is determined by a series of sounding cross-sections compared to as-built soundings. The 24 month Frequency is based on historical data and engineering judgement regarding sediment deposition rate.

SR 3.7.3.3

This SR ensures adequate long term (30 days) cooling can be maintained, by verifying the CSCS pond bottom elevation is $\leq$ 686.5 feet. The 24 month Frequency is based on historical data and engineering judgement regarding pond bottom elevation changes.

REFERENCES

1. Regulatory Guide 1.27, Revision 2, January 1976.

2. UFSAR, Section 9.2.1.

3. UFSAR, Section 9.2.6.

BASES (continued)

LCO

The specified water level preserves the assumption of the fuel handling accident analysis (Ref. 2). As such, it is the minimum required for fuel movement within the spent fuel storage pool.

APPLICABILITY

This LCO applies whenever movement of irradiated fuel assemblies occurs in the spent fuel storage pool or whenever movement of new fuel assemblies occurs in the spent fuel storage pool with irradiated fuel assemblies seated in the spent fuel storage pool, since the potential for a release of fission products exists.

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply. If moving fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of fuel assemblies is not a sufficient reason to require a reactor shutdown.

When the initial conditions for an accident cannot be met, steps should be taken to preclude the accident from occurring. With the spent fuel storage pool level less than required, the movement of fuel assemblies in the spent fuel storage pool is suspended immediately. Suspension of this activity shall not preclude completion of movement of a fuel assembly to a safe position. This effectively precludes a spent fuel handling accident from occurring.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

This SR verifies that sufficient water is available in the event of a fuel handling accident. The water level in the spent fuel storage pool must be checked periodically. The 7 day Frequency is acceptable, based on operating experience, considering that the water volume in the pool is normally stable and water level changes are controlled by unit procedures.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 9.1.2.

2. UFSAR, Section 15.7.4.

3. NUREG-0800, Section 15.7.4, Revision 1, July 1981.

5. 10 CFR 100.

6. Regulatory Guide 1.25, March 1972.

DISCUSSION OF CHANGES
ITS: 3.7.3 - ULTIMATE HEAT SINK (UHS)

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A new Surveillance Requirement (ITS SR 3.7.3.1) is added to CTS 4.7.1.3 to require verification that the temperature of the cooling water supplied to the plant from the UHS (CSCS pond) is ≤ 97.5°F every 24 hours. This limit on cooling water temperature being supplied from the UHS during unit operation ensures that the maximum temperature of the water to CSCS equipment assumed in the LaSalle design basis accident (DBA) analysis is not exceeded. The addition of this Surveillance Requirement represents an additional restriction on plant operation necessary to help ensure the OPERABILITY of the UHS and the heat removal capabilities of the Residual Heat Removal Service Water System and the Diesel Generator Cooling Water System are maintained within the assumptions of the DBA analyses.

When the CSCS pond is inoperable, the Action of CTS 3.7.1.3 provides a 90 day period to restore the CSCS pond to OPERABLE status. In ITS 3.7.3, the 90 day period for restoration of the CSCS pond has been maintained when the inoperability is due to sediment deposition exceeding the required limit or pond bottom depth exceeding the limit. For other inoperabilities of the CSCS pond (e.g., average water temperature not within limit), ITS 3.7.3, Required Action B.1 and B.2 will require the plant to be in MODE 3 within 12 hours and in MODE 4 within 36 hours. This change to the actions associated with an inoperable CSCS pond represents an additional restriction on operation necessary to help ensure that actions taken in the event of a loss of function associated with the Ultimate Heat Sink are maintained consistent with the actions required for a loss of function associated with the systems and components supported by the CSCS pond.

<CTS>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A ~~or B~~ not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours
OR Both [SSW] subsystems inoperable [for reasons other than Condition A].		
OR [UHS] (CSCS pond) inoperable for reasons other than Condition A.		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.1.1 Verify the water level of each [UHS] cooling tower basin is ≥ [7.25] ft.	24 hours
SR 3.7.1.2 Verify the water level [in each SSW pump well of the intake structure] is ≥ [ ] ft.	24 hours
SR 3.7.1.3 (3.1) Verify the (cooling) water temperature of [UHS] is ≤ [ ] °F. (97.5)	24 hours

(continued)

(Doc M.1)

(Supplied to the plant from the CSCS pond)

(4.7.1.3.a)	SR 3.7.3.2 Verify sediment level is ≤ 1.5 ft in the intake flume and the CSCS pond.	24 months
(4.7.1.3.b)	SR 3.7.3.3 Verify CSCS pond bottom elevation is ≤ 686.5 ft.	24 months

Insert BWR/4 ISTS B 3.7.1 (continued)

BASES

LCO (continued)

b. An OPERABLE flow path is capable of taking suction from the intake structure and transferring the water to the RHR heat exchangers at the assumed flow rate. Additionally, the RHRSW cross tie valves (which allow the two RHRSW loops to be connected) must be closed so that failure of one subsystem will not affect the OPERABILITY of the other subsystems.

An adequate suction source is not addressed in this LCO since the minimum net positive suction head ([59] ft mean sea level in the pump well) is bounded by the plant service water pump requirements (LCO 3.7.[8], "[Plant Service Water (PSW) System and] Ultimate Heat Sink (UHS)").

APPLICABILITY

In MODES 1, 2, and 3, the RHRSW System is required to be OPERABLE to support the OPERABILITY of the RHR System for primary containment cooling (LCO 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," and LCO 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray") and decay heat removal (LCO 3.4.[8], "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown"). The Applicability is therefore consistent with the requirements of these systems.

In MODES 4 and 5, the OPERABILITY requirements of the RHRSW System are determined by the systems it supports.

INSERT B 3.7.1 App

ACTIONS

A.1

With one RHRSW pump inoperable, the inoperable pump must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE RHRSW pumps are adequate to perform the RHRSW heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced RHRSW capability. The 30 day Completion Time is based on the remaining RHRSW heat removal capability, including enhanced reliability afforded by manual cross connect capability, and the low probability of a DBA with concurrent worst case single failure.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

Is the failure of one of the two standby DGs, which would in turn affect one [SSW] subsystem. The [SSW] flow assumed in the analyses is [7900] gpm per pump to the heat exchanger (FSAR, Table [6.2-2], Ref. 7). Reference 2 discusses [SSW] System performance during these conditions.

The [SSW] System, together with the [UHS], satisfy Criterion 3 of the NRC Policy Statement. 10 CFR 50.36(c)(2)(ii).

LCO

The OPERABILITY of subsystem A (Division 1) and subsystem B (Division 2) of the [SSW] System is required to ensure the effective operation of the RHR System in removing heat from the reactor, and the effective operation of other safety related equipment during a DBA or transient. Requiring both subsystems to be OPERABLE ensures that either subsystem A or B will be available to provide adequate capability to meet cooling requirements of the equipment required for safe shutdown in the event of a single failure.

A subsystem is considered OPERABLE when:

a. The associated pump is OPERABLE;

b. The associated [UHS] is OPERABLE; and

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

pond

OPERABILITY of the [UHS] is based on a maximum water temperature of [95] °F [with OPERABILITY of each subsystem requiring a minimum basin water level at or above elevation [690 ft 3 inches] mean sea level (equivalent to an indicated level of ≥ [7 ft 3 inches]) and four OPERABLE cooling tower fans.]

975 and 690 ft

supplied to the plant

The isolation of the [SSW] System to components or systems may render those components or systems inoperable, but does not affect the OPERABILITY of the [SSW] System.

OPERABILITY of the High Pressure Core Spray (HPCS) Service Water System (SWS) is addressed by LCO 3.7.2, "HPCS SWS."

(continued)

In addition, to ensure the volume of water available in the CSCS pond is sufficient to maintain adequate long term cooling, sediment deposition (in the intake flume and in the pond) must be ≤ 1.5 ft and CSCS pond bottom elevation must be ≤ 686.5 ft.

BASES

ACTIONS (continued)

C.1 and C.2

If the [SSW] subsystem cannot be restored to OPERABLE status within the associated Completion Time, or both [SSW] subsystems are inoperable for reasons other than Condition A, or the [UHS] is determined inoperable for reasons other than Condition A, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

(e.g., inoperable due to the temperature of the cooling water supplied to the plant from the CSCS pond >97.5°F)

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1

This SR ensures adequate long term (30 days) cooling can be maintained. With the [UHS] water source below the minimum level, the affected [SSW] subsystem must be declared inoperable. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.1.2

This SR verifies the water level [in each [SSW] pump well of the intake structure] to be sufficient for the proper operation of the [SSW] pumps (net positive suction head and pump vortexing are considered in determining this limit). The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.1.3

Verification of the [UHS] temperature ensures that the heat removal capability of the [SSW] System is within the assumptions of the DBA analysis. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

RHRSW System and DGCW System are

(continued)

Insert SRs 3.7.3.2 and 3.7.3.3

Fuel Pool Water Level
B 3.7.8

BASES (continued)

LCO

The specified water level preserves the assumption of the fuel handling accident analysis (Refs. 2 and 3). As such, it is the minimum required for fuel movement within the spent fuel storage pool and upper containment fuel storage pool.

APPLICABILITY

This LCO applies whenever movement of irradiated fuel assemblies occurs in the associated fuel storage racks since the potential for a release of fission products exists.

or whenever movement of new fuel assemblies occurs in the spent fuel storage pool with irradiated fuel assemblies seated in the spent fuel storage pool,

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not a sufficient reason to require a reactor shutdown.

When the initial conditions for an accident cannot be met, steps should be taken to preclude the accident from occurring. With either fuel pool level less than required, the movement of irradiated fuel assemblies in the associated storage pool is suspended immediately. Suspension of this activity shall not preclude completion of movement of an irradiated fuel assembly to a safe position. This effectively precludes a spent fuel handling accident from occurring.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

This SR verifies that sufficient water is available in the event of a fuel handling accident. The water level in the spent fuel storage pool and upper containment fuel storage racks must be checked periodically. The 7 day Frequency is acceptable, based on operating experience, considering that the water volume in the pool is normally stable and water level changes are controlled by unit procedures.

(continued)

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1434, REVISION 1
ITS BASES: 3.7.8 - SPENT FUEL STORAGE POOL WATER LEVEL

1. The Bases has been renumbered to accommodate additional plant specific changes to ISTS Section B 3.7.

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

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

4. Not used. 1 A C

5. Changes have been made to be consistent with changes made to the Specification.

6. TSTF-139 changed the Applicable Safety Analyses section to also state that spent fuel pool water level meets Criterion 3 (in addition to meeting Criterion 2, which is stated in Rev. 1 of the ISTS Bases). 10 CFR 50.36(c)(2)(ii) describes Criterion 3 as a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The justification for TSTF-139 states that fuel pool water level is a process variable which satisfies Criteria 2 and 3. A process variable is not a structure, system, or component. The Interim and Final Policy Statements, as well as the statement of considerations for the change to 10 CFR 50.36 (that added the four criteria to 10 CFR 50.36(c)(2)(ii)) state that Criterion 3 is for equipment only. Criterion 2 was specifically developed for process variables. The ISTS Bases currently states that spent fuel pool water level meets Criterion 2 only, which is correct. Therefore, this TSTF has not been adopted. In addition, other Technical Specification Bases for water level requirements (e.g., ISTS 3.9.6 and ISTS 3.9.7, RPV Water Level requirements, which are in Technical Specifications for the same reason as the spent fuel pool water level requirements, and ISTS 3.6.2.2, Suppression Pool Water Level) state that the water level requirements only meet Criterion 2.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources – Operating

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

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

b. Three diesel generators (DGs); and

c. The opposite unit's Division 2 DG capable of supporting the associated equipment required to be OPERABLE by LCO 3.6.3.1, "Primary Containment Hydrogen Recombiners," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," LCO 3.7.4, "Control Room Area Filtration (CRAF) System," and LCO 3.7.5, "Control Room Area Ventilation Air Conditioning (AC) System."

APPLICABILITY: MODES 1, 2, and 3.

---NOTES---

1. Division 3 AC electrical power sources are not required to be OPERABLE when High Pressure Core Spray (HPCS) System is inoperable.

2. The opposite unit's Division 2 DG in LCO 3.8.1.c is not required to be OPERABLE when the associated required equipment is inoperable.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 for OPERABLE required offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.	24 hours from discovery of no offsite power to one division concurrent with inoperability of redundant required feature(s)
	AND		
	A.3	Restore required offsite circuit to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet LCO 3.8.1.a or b

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action B.1 and associated Completion Time not met. OR One required Division 1, 2, or 3 DG inoperable for reasons other than Condition B. OR Required opposite unit Division 2 DG inoperable. OR One required Division 1, 2, or 3 DG inoperable and the required opposite unit Division 2 DG inoperable.	C.1	Perform SR 3.8.1.1 for OPERABLE required offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	C.2	Declare required feature(s), supported by the inoperable DG(s), inoperable when the redundant required feature(s) are inoperable.	4 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	AND		
	C.3.1	Determine OPERABLE DG(s) are not inoperable due to common cause failure.	24 hours
	OR		
	C.3.2	Perform SR 3.8.1.2 for OPERABLE DG(s).	24 hours
	AND		
	C.4	Restore required DG(s) to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet LCO 3.8.1.a or b

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two required offsite circuits inoperable.	D.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.	12 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND	
	D.2 Restore one required offsite circuit to OPERABLE status.	24 hours
E. One required offsite circuit inoperable. AND One required Division 1, 2, or 3 DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems – Operating," when Condition E is entered with no AC power source to any required division. ----------	
	E.1 Restore required offsite circuit to OPERABLE status.	12 hours
	OR	
	E.2 Restore required DG to OPERABLE status.	12 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two required Division 1, 2, or 3 DGs inoperable. OR Division 2 DG and the required opposite unit Division 2 DG inoperable.	F.1 Restore one required DG to OPERABLE status.	2 hours OR 72 hours if Division 3 DG is inoperable
G. Required Action and associated Completion Time of Condition A, C, D, E, or F not met. OR Required Action and associated Completion Time of Required Action B.2, B.3, or B.4 not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	12 hours 36 hours
H. Three or more required AC sources inoperable.	H.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.1.7	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. ---------- Verify each required DG starts from standby condition and achieves: a. in $\leq$ 13 seconds, voltage $\geq$ 4010 V and frequency $\geq$ 58.8 Hz; and b. steady state voltage $\geq$ 4010 V and $\leq$ 4310 V and frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz.	184 days
SR 3.8.1.8	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	----------NOTES---------- 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. ---------- Verify each required DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, the frequency is $\leq$ 66.7 Hz.	24 months
SR 3.8.1.10	----------NOTES---------- 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. ---------- Verify each required DG does not trip and voltage is maintained $\leq$ 5000 V during and following a load rejection of a load $\geq$ 2600 kW.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2 only; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in $\leq$ 13 seconds, 2. energizes auto-connected shutdown loads, 3. maintains steady state voltage $\geq$ 4010 V and $\leq$ 4310 V, 4. maintains steady state frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for $\geq$ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal each required DG auto-starts from standby condition and: a. In $\leq$ 13 seconds after auto-start, achieves voltage $\geq$ 4010 V and frequency $\geq$ 58.8 Hz; b. Achieves steady state voltage $\geq$ 4010 V and $\leq$ 4310 V and frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz; and c. Operates for $\geq$ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each required DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except: a. Engine overspeed; and b. Generator differential current.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------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 unless the other two DGs are OPERABLE. If either of the other two DGs becomes inoperable, this Surveillance shall be suspended. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. 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. 4. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. ----------	
	Verify each required DG operating within the power factor limit operates for $\geq$ 24 hours: a. For $\geq$ 2 hours loaded $\geq$ 2860 kW; and b. For the remaining hours of the test loaded $\geq$ 2400 kW and $\leq$ 2600 kW.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated $\geq$ 2 hours loaded $\geq$ 2400 kW and $\leq$ 2600 kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. 3. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. ---------- Verify each required DG starts and achieves: a. in $\leq$ 13 seconds, voltage $\geq$ 4010 V and frequency $\geq$ 58.8 Hz; and b. steady state voltage $\geq$ 4010 V and $\leq$ 4310 V and frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each required 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.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.17	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify, with a required DG operating in test mode and connected to its bus: a. For Division 1 and 2 DGs, an actual or simulated ECCS initiation signal overrides the test mode by returning DG to ready-to-load operation; and b. For Division 3 DG, an actual or simulated DG overcurrent trip signal automatically disconnects the offsite power source while the DG continues to supply normal loads.	24 months
SR 3.8.1.18	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify interval between each sequenced load block, for Division 1 and 2 DGs only, is $\geq$ 90% of the design interval for each time delay relay.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
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 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2 only; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in $\leq$ 13 seconds, 2. energizes auto-connected emergency loads including through time delay relays, where applicable, 3. maintains steady state voltage $\geq$ 3744 V and $\leq$ 4576 V, 4. maintains steady state frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for $\geq$ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.1.20	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify, when started simultaneously from standby condition, each required DG achieves, in $\leq$ 13 seconds, voltage $\geq$ 3744 V and frequency $\geq$ 58.8 Hz.	10 years
SR 3.8.1.21	----------NOTE---------- When the opposite unit is in MODE 4 or 5, or moving irradiated fuel assemblies in secondary containment, the following opposite unit SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.14 through SR 3.8.1.16. ---------- For required opposite unit DG, the SRs of the opposite unit's Specification 3.8.1, except SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.17, SR 3.8.1.18, SR 3.8.1.19, and SR 3.8.1.20, are applicable.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

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

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown"; and

b. One diesel generator (DG) capable of supplying one division of the Division 1 or 2 onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8;

c. The Division 3 DG capable of supplying the Division 3 onsite Class 1E AC electrical power distribution subsystem, when the Division 3 onsite Class 1E AC electrical power distribution subsystem is required by LCO 3.8.8; and

d. One qualified circuit, which may be the same circuit in LCO 3.8.2.a, between the offsite transmission network and the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem, or the opposite unit DG capable of supplying the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem, when the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem is required by LCO 3.8.8.

1 (C)

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required offsite circuit of LCO Item a. inoperable.	---NOTE--- Enter applicable Condition and Required Actions of LCO 3.8.8, when any required division is de-energized as a result of Condition A. --- A.1 Declare affected required feature(s) with no offsite power available inoperable. OR A.2.1 Suspend CORE ALTERATIONS. AND A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment. AND	Immediately Immediately Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.3	Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).	Immediately
	AND		
	A.2.4	Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. Required DG of LCO Item b. inoperable.	B.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	B.2	Suspend movement of irradiated fuel assemblies in secondary containment.	Immediately
	AND		
	B.3	Initiate action to suspend OPDRVs.	Immediately
	AND		
	B.4	Initiate action to restore required DG to OPERABLE status.	Immediately
C. Required DG of LCO Item c. inoperable.	C.1	Declare High Pressure Core Spray System inoperable.	72 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required offsite circuit or DG of LCO Item d. inoperable.	D.1 Declare associated standby gas treatment subsystem, control room area filtration subsystem, and control room area ventilation air conditioning subsystem inoperable.	Immediately

10

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	----------NOTES---------- 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19. 2. SR 3.8.1.12 and SR 3.8.1.19 are not required to be met when associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "ECCS – Shutdown." ---------- For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20, are applicable.	In accordance with applicable SRs

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more DGs with stored fuel oil total particulates not within limit.	B.1 Restore stored fuel oil total particulates to within limit.	7 days
C. One or more DGs with new fuel oil properties not within limits.	C.1 Restore stored fuel oil properties to within limits.	30 days
D. One or more DGs with starting air receiver pressure < 200 psig and ≥ 165 psig.	D.1 Restore starting air receiver pressure to ≥ 200 psig.	48 hours
E. Required Action and associated Completion Time of Condition A, B, C, or D not met. OR One or more DGs with stored diesel fuel oil or starting air subsystem not within limits for reasons other than Condition A, B, C, or D.	E.1 Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify: a. $\geq$ 31,000 gal of fuel in each fuel oil storage tank for the Division 1 and Division 2 DGs and the opposite unit Division 2 DG. b. $\geq$ 29,750 gal of fuel in the combined fuel oil storage tank and day tank for the Division 3 DG.	31 days
SR 3.8.3.2	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
SR 3.8.3.3	Verify each DG air start receiver pressure is $\geq$ 200 psig.	31 days
SR 3.8.3.4	Check for and remove accumulated water from each fuel oil storage tank.	92 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources – Operating

LCO 3.8.4 The Division 1 125 VDC and 250 VDC, Division 2 125 VDC, Division 3 125 VDC, and the opposite unit Division 2 125 VDC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Division 1 or 2 125 VDC electrical power subsystem inoperable.	A.1 Restore Division 1 and 2 125 VDC electrical power subsystems to OPERABLE status.	2 hours
B. Division 3 DC electrical power subsystem inoperable.	B.1 Declare High Pressure Core Spray System inoperable.	Immediately
C. Division 1 250 VDC electrical power subsystem inoperable.	C.1 Declare associated supported features inoperable.	Immediately
D. Opposite unit Division 2 DC electrical power subsystem inoperable.	D.1 Restore opposite unit Division 2 DC electrical power subsystem to OPERABLE status.	7 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.5	Verify battery connection resistance is $\leq$ 1.5E-4 ohm for inter-cell connections, and $\leq$ 1.5E-4 ohm for terminal connections.	24 months
SR 3.8.4.6	Verify each required battery charger supplies: a. $\geq$ 200 amps at $\geq$ 130 V for $\geq$ 4 hours for the Division 1 and 2 125 V battery chargers; b. $\geq$ 50 amps at $\geq$ 130 V for $\geq$ 4 hours for the Division 3 125 V battery charger; and c. $\geq$ 200 amps at $\geq$ 260 V for $\geq$ 4 hours for the 250 V battery charger.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.4.7 ----------NOTES---------- 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 provided the modified performance discharge test completely envelops the service test. 2. This Surveillance shall not normally be performed in MODE 1 or 2 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is $\geq$ 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 expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity $\geq$ 100% of manufacturer's rating

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.4.9	----------NOTE---------- When the opposite unit is in MODE 4 or 5, or moving irradiated fuel in the secondary containment, the following opposite unit SRs are not required to be performed: SR 3.8.4.6, SR 3.8.4.7, and SR 3.8.4.8. ---------- For the opposite unit Division 2 DC electrical power subsystem, the SRs of the opposite unit Specification 3.8.4 are applicable.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources – Shutdown

LCO 3.8.5 The following DC electrical power subsystem(s) shall be OPERABLE:

a. One Division 1 125 VDC or Division 2 125 VDC electrical power subsystem;

b. The Division 3 125 VDC electrical power subsystem, when the Division 3 onsite Class 1E DC electrical power distribution subsystem is required by LCO 3.8.8, "Distribution Systems – Shutdown"; and

c. The opposite unit Division 2 125 VDC electrical power distribution subsystem, when the opposite unit Division 2 onsite Class 1E DC electrical power distribution subsystem is required by LCO 3.8.8.

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---NOTE--- Not applicable when the opposite unit is in MODE 1, 2, or 3. --- One or more required Division 1, 2, and 3 DC electrical power subsystems inoperable.	A.1 Verify associated DC electrical power distribution subsystem is energized by OPERABLE opposite unit DC electrical power subsystem. AND	1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Restore required Division 1, 2, and 3 DC electrical power subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met. OR Required opposite unit Division 2 DC electrical power subsystem inoperable. OR ---------NOTE--------- Only applicable when the opposite unit is in MODE 1, 2, or 3. ---------- One or more required Division 1, 2, and 3 DC electrical power subsystems inoperable.	B.1 Declare affected required feature(s) inoperable. OR B.2.1 Suspend CORE ALTERATIONS. AND B.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment. AND B.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel. AND B.2.4 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately Immediately Immediately Immediately Immediately

Table 3.8.6-1 (page 1 of 1)
Battery Cell Parameter Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[a]	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[a]	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity[b][c]	≥ 1.200	≥ 1.195 AND Average of all connected cells > 1.205	Not more than 0.020 below average of all connected cells AND Average of all connected cells ≥ 1.195

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum level during and, for a limited time, following equalizing charges provided it is not overflowing. | A

(b) Corrected for electrolyte temperature and level.

(c) A battery charging current of < 2 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or both Division 1 and 2 125 V DC electrical power distribution subsystems inoperable.	B.1 Restore Division 1 and 2 125 V DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet LCO 3.8.7.a
C. One or more required opposite unit Division 2 AC or DC electrical power distribution subsystems inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.1 when Condition C results in the inoperability of a required offsite circuit. ---------- C.1 Restore required opposite unit Division 2 AC and DC electrical power distribution subsystem(s).	 7 days
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 4.	12 hours 36 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or both Division 3 AC or DC electrical power distribution subsystems inoperable.	E.1 Declare associated supported features inoperable.	Immediately
F. Division 1 250 V DC electrical power subsystem inoperable.	F.1 Declare associated supported features inoperable.	Immediately
G. Two or more electrical power distribution subsystems inoperable that, in combination, result in a loss of function.	G.1 Enter LCO 3.0.3.	Immediately

1 A

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct breaker alignments and voltage to required AC and DC electrical power distribution subsystems.	7 days

BASES

APPLICABLE SAFETY ANALYSES (continued)

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 3.5, Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC) System; and Section 3.6, Containment Systems.

The OPERABILITY of the AC electrical power sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining 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

b. A worst case single failure.

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

LCO

Two qualified circuits (normal and alternate) between the offsite transmission network and the onsite Class 1E Distribution System (i.e., the unit Division 1, 2, and 3 4.16 kV emergency buses and the opposite unit Division 2 4.16 kV emergency bus), three separate and independent unit DGs, and the opposite unit's DG capable of supporting the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem to power the equipment required to be OPERABLE by LCO 3.6.3.1, LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5 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. A specific LCO requirement for a qualified circuit to provide power to the opposite unit Division 2 4.16 kV emergency bus is not provided since the alternate qualified circuit to the units Division 2 4.16 kV emergency bus encompasses the circuit path to the opposite unit Division 2 4.16 kV emergency bus. (C)

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

(continued)

BASES

LCO (continued)

Each offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the emergency buses. For the normal offsite circuit, the OPERABLE qualified offsite circuit consists of the required incoming breaker(s) and disconnects from the 345 kV switchyard to and including the SAT, the respective circuit path to and including the feeder breakers to the required unit Division 1, 2, and 3 4.16 kV emergency buses. 1A

For the alternate offsite circuit, the OPERABLE qualified offsite circuit consists of the required incoming breaker(s) and disconnects from the 345 kV switchyard to and including the SAT or UAT (backfeed mode), to and including the opposite unit 4.16 kV emergency bus, the opposite unit circuit path to and including the unit tie breakers (breakers 1414, 1424, 2414, 2424), and the respective circuit path to the required Division 1 and 2 4.16 kV emergency buses.

Each unit DG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This sequence must be accomplished within 13 seconds. Each DG must also be capable of accepting required loads within the assumed loading sequence intervals, and must continue to operate until offsite power can be restored to the 4.16 kV emergency buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with engine hot and DG in standby with engine at ambient conditions. Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the Division 1 and 2 DGs to revert to standby status on an ECCS signal while operating in parallel test mode. Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY. 1A

The opposite unit's DG must be capable of starting, accelerating to rated speed and voltage, and connecting to the opposite unit's Division 2 Class 1E AC electrical power distribution subsystem on detection of bus undervoltage. This sequence must be accomplished within 13 seconds and is required to be met from the same variety of initial conditions specified for the unit DGs.

(continued)

BASES

LCO (continued)

In addition, day tank storage and fuel oil transfer system requirements must be met for each required DG. | A

The AC sources in one division must be separate and independent (to the extent possible) of the AC sources in the other division(s). For the DGs, the separation and independence are complete. For the offsite AC sources, the separation and independence are to the extent practical. A qualified circuit may be connected to all divisions of either unit, with manual transfer capability to the other circuit OPERABLE, and not violate separation criteria. A qualified circuit that is not connected to the 4.16 kV emergency buses is required to have OPERABLE manual transfer capability (from the control room) to the associated 4.16 kV emergency buses to support OPERABILITY of that qualified circuit.

APPLICABILITY

The AC sources are required to be OPERABLE in MODES 1, 2, and 3 to ensure that:

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

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

Note 1 has been added taking exception to the Applicability requirements for Division 3 sources, provided the High Pressure Core Spray (HPCS) System is declared inoperable. This exception is intended to allow declaring of the Division 3 inoperable either in lieu of declaring the Division 3 source inoperable, or at any time subsequent to entering ACTIONS for an inoperable Division 3 source. This exception is acceptable since, with the Division 3 inoperable and the associated ACTIONS entered, the Division 3 AC sources provide no additional assurance of meeting the above criteria.

Note 2 has been added taking exception to the Applicability requirements for the required opposite unit's Division 2 DG in LCO 3.8.1.c, provided the associated required equipment

(continued)

BASES

APPLICABILITY (continued)

is inoperable (i.e., one SGT subsystem, one primary containment hydrogen recombiner subsystem, one control room area filtration subsystem, and one control room area ventilation air conditioning subsystem). This exception is intended to allow declaring the opposite unit's Division 2 supported equipment inoperable either in lieu of declaring the opposite unit's Division 2 DG inoperable, or at any time subsequent to entering ACTIONS for an inoperable opposite unit Division 2 DG. This exception is acceptable since, with the opposite unit powered Division 2 equipment inoperable and the associated ACTIONS entered, the opposite unit Division 2 DG provides no additional assurance of meeting the above criteria.

AC power requirements for MODES 4 and 5 and other conditions in which AC sources are required are covered in LCO 3.8.2, "AC Sources – Shutdown."

ACTIONS

A.1

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

A.2

Required Action A.2, which only applies if the division cannot be powered from an offsite source, is intended to provide assurance that an event with a coincident single failure of the associated DG does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related divisions (i.e., single division systems are not included, although, for this Required Action, Division 3 (HPCS System) is considered redundant to Division 1 and 2 ECCS). Redundant required

(continued)

BASES

ACTIONS

A.2 (continued)

features failures consist of inoperable features associated with a division redundant to the division that has no offsite power available.

The Completion Time for Required Action A.2 is intended to allow time for the operator 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 division has no offsite power available to supply its loads; and

b. A redundant required feature on another division is inoperable.

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

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

The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection may have been lost for the required feature's function; however, function is not lost. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

(continued)

BASES

ACTIONS (continued)

A.3

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

With one required 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 plant safety systems. In this condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E distribution system.

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

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, the common DG is inoperable for pre-planned maintenance and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to 7 days. This situation could lead to a total of 10 days, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a unit DG could again become inoperable, the circuit restored OPERABLE, and an additional 72 hours (for a total of 13 days) allowed prior to complete restoration of the LCO. The 10 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet LCO 3.8.1.a or b. This limit is considered reasonable for situations in which Conditions are entered concurrently for combinations of Conditions A, B, and C. The "AND" connector between the 72 hour and 10 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive must be met. C C

Similar to Required Action A.2, the Completion Time of Required Action A.3 allows for an exception to the normal "time zero" for beginning the allowed outage time "clock."

(continued)

BASES

ACTIONS

A.3 (continued)

This exception results in establishing the "time zero" at the time LCO 3.8.1.a or b was initially not met, instead of at the time that Condition A was entered.

B.1

Condition B provides appropriate compensatory measures to allow performance of pre-planned maintenance or testing on the common DG. Pre-planned maintenance or testing includes preventative maintenance, modifications, and performance of Surveillance Requirements. The Note effectively only allows Condition B to be used for the common DG when the opposite unit is not in MODE 1, 2, or 3. When the common DG becomes inoperable while both units are in MODE 1, 2, or 3, Condition C must be entered for both units and the associated Required Actions performed.

Required Action B.1, is intended to provide assurance that a loss of offsite power, during the period that the common DG or its supported equipment is inoperable for the purposes of completing pre-planned maintenance, modifications, or Surveillance Requirements, does not result in a complete loss of safety function of critical systems. This is accomplished by making an additional source available to support the unit and opposite unit Division 2 emergency buses. This additional source is the unit or opposite unit Division 2 DG. To ensure this alternate highly reliable power source is available during operation in Condition B, it is necessary to temporarily modify the control circuit for the unit crosstie circuit breakers between 4.16 kV emergency buses 142Y and 242Y to allow the breakers to be closed with a DG powering one of the Division 2 emergency buses (142Y or 242Y) so that the unit or opposite unit Division 2 DG can supply the unit and opposite unit Division 2 emergency buses. Therefore, the unit or opposite unit Division 2 DG must be OPERABLE with the capability to be manually aligned to the unit and opposite unit Division 2 emergency buses. The Completion Time ensures the alternate source to the Division 2 emergency buses is available whenever the plant is operating in Condition B. If Required Action B.1 and the associated Completion Time are not met, Condition C must the entered and the Required Actions taken.

(continued)

BASES

ACTIONS (continued)

B.2

To ensure a highly reliable power source remains, it is necessary to verify the availability of the remaining required offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure to meet 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 must then be entered.

B.3

Required Action B.3 is intended to provide assurance that a loss of offsite power, during the period that the common DG is inoperable for the purposes of completing pre-planned maintenance, modifications, or Surveillance Requirements on the common DG or its support systems, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related divisions (i.e., single division systems are not included, although for this Required Action, Division 3 (HPCS) is considered redundant to Division 1 and Division 2 ECCS). Redundant required feature failures consist of inoperable features associated with a division redundant to the division that has an inoperable DG.

The Completion Time 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 common DG exists; and

b. A redundant required feature on another division is inoperable.

If, at any time during the existence of this Condition (the common DG inoperable due to pre-planned maintenance, modification, or testing), a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

(continued)

BASES

ACTIONS

B.3 (continued)

Discovering the common DG inoperable coincident with one or more redundant required support or supported features, or both, that are associated with the redundant OPERABLE DG(s), results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE DGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the component 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 low probability of a DBA occurring during this period.

B.4

One common DG provides onsite standby power to the Division 1 emergency buses on both units. This Required Action provides a 7 day time period to perform pre-planned maintenance or testing on the common DG while precluding the shutdown of both units. Pre-planned maintenance or testing includes preventative maintenance, modifications, and performance of Surveillance Requirements. The Note to Condition B effectively only allows the 7 day Completion Time to be used for the common DG when the opposite unit is not in MODE 1, 2, or 3. When the common DG becomes inoperable while both units are in MODE 1, 2, or 3, Condition C must be entered for both units and the associated Required Actions performed. The 4.16 kV emergency bus design is sufficient to allow operation to continue in Condition B for a period that should not exceed 7 days. In this condition, the remaining OPERABLE DGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The 7 day

(continued)

BASES

ACTIONS

B.4 (continued)

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

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 LCO 3.8.1.a or b. 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 situation could lead to a total of 10 days, since initial failure of 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 13 days) allowed prior to complete restoration of the LCO. The 10 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet LCO 3.8.1.a or b. This limit is considered reasonable for situations in which Conditions are entered concurrently for combinations of Conditions A, B, and C. The "AND" connector between the 7 day and 10 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive must be met.

Similar to Required Action B.3, the Completion Time of Required Action B.4 allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This exception results in establishing the "time zero" at the time LCO 3.8.1.a or b was initially not met, instead of the time that Condition B was entered.

C.1

To ensure a highly reliable power source remains, it is necessary to verify the availability of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of

(continued)

BASES

ACTIONS

C.1 (continued)

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 must then be entered.

C.2

Required Action C.2 is intended to provide assurance that a loss of offsite power, during the period that the DG(s) is inoperable as described in Condition C, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related divisions (i.e., single division systems are not included, although, for this Required Action, Division 3 (HPCS System) is considered redundant to Division 1 and 2 ECCS). Redundant required features failures consist of inoperable features associated with a division redundant to the division that has an inoperable DG.

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

a. An inoperable DG exists; and

b. A redundant required feature on another division is inoperable.

If, at any time during the existence of this Condition (DG(s) inoperable as described in Condition C), a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering required DG(s) inoperable coincident with one or more redundant required support or supported features, or both, that are associated with the redundant OPERABLE DG(s), results in starting the Completion Time for the Required

(continued)

BASES

ACTIONS

C.2 (continued)

Action. Four hours from the discovery of these events existing concurrently is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

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

C.3.1 and C.3.2

Required Action C.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DGs. If it can be determined that the cause of the inoperable DG(s) does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DGs, the other DGs are declared inoperable upon discovery, and Condition F or H of LCO 3.8.1 is entered, as applicable. Once the failure is repaired, and the common cause failure no longer exists, Required Action C.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 those DG(s).

In the event the inoperable DG(s) is restored to OPERABLE status prior to completing either C.3.1 or C.3.2, the station corrective action program will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in Condition C.

(continued)

BASES

ACTIONS

C.3.1 and C.3.2 (continued)

According to Generic Letter 84-15 (Ref. 7), 24 hours is reasonable time to confirm that the OPERABLE DG(s) are not affected by the same problem as the inoperable DG.

C.4

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition C for a period that should not exceed 72 hours. In this condition, the remaining OPERABLE DGs 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, reasonable time for repairs, and low probability of a DBA occurring during this period.

The second Completion Time for Required Action C.4 established 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 LCO 3.8.1.a or b. If Condition C is entered while, for instance, the common DG is inoperable due to pre-planned maintenance and that DG is subsequently restored OPERABLE, the LCO may already have been not met for up to 7 days. This situation could lead to a total of 10 days, since initial failure to meet the LCO, to restore the unit DG. At this time, an offsite circuit could become inoperable, the unit DG restored OPERABLE, and an additional 72 hours (for a total of 13 days) allowed prior to complete restoration of the LCO. The 10 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet LCO 3.8.1.a or b. This limit is considered reasonable for situations in which Conditions are entered concurrently for combinations of Conditions A, B, and C. The "AND" connector between the 72 hour and 10 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met. | C

(continued)

BASES

ACTIONS

C.4 (continued)

Similar to Required Action C.2, the Completion Time of Required Action C.4 allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This exception results in establishing the "time zero" at the time the LCO was initially not met, instead of the time Condition C was entered.

D.1 and D.2

Required Action D.1 addresses actions to be taken in the event of concurrent failure of redundant required features. Required Action D.1 reduces the vulnerability to a loss of function. The Completion Time for taking these actions is reduced to 12 hours from that allowed with only one division without offsite power (Required Action A.2). The rationale for the reduction to 12 hours is that Regulatory Guide 1.93 (Ref. 6) allows a Completion Time of 24 hours for two required offsite circuits inoperable, based upon the assumption that two complete safety divisions 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 designed with redundant safety related divisions (i.e., single division systems are not included in the list, although, for this Required Action, Division 3 (HPCS System) is considered redundant to Division 1 and 2 ECCS). Redundant required features failures consist of any of these features that are inoperable, because any inoperability is on a division redundant to a division with inoperable offsite circuits.

The Completion Time for Required Action D.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. Two required offsite circuits are inoperable; and

(continued)

BASES

ACTIONS

D.1 and D.2 (continued)

b. A redundant required feature is inoperable.

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

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition D for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system may 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 degradation level:

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

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

With two 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.

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BASES

ACTIONS

D.1 and D.2 (continued)

According to Regulatory Guide 1.93 (Ref. 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.

E.1 and E.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 E are modified by a Note to indicate that when Condition E is entered with no AC source to any required division (i.e., the division is de-energized), Actions for LCO 3.8.7, "Distribution Systems – Operating," must be immediately entered. This allows Condition E to provide requirements for the loss of an offsite circuit and one required unit DG without regard to whether a division is de-energized. LCO 3.8.7 provides the appropriate restrictions for a de-energized division.

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition E for a period that should not exceed 12 hours. In Condition E, 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 D (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, reasonable time for repairs, and low probability of a DBA occurring during this period.

(continued)

BASES

ACTIONS (continued)

F.1

With two required unit DGs inoperable or both required Division 2 DGs inoperable, there is no more than two remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, sufficient standby AC sources may not be available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for the majority of ESF equipment at this level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Regulatory Guide 1.93 (Ref. 6), with Division 1 and 2 unit DGs inoperable, operation may continue for a period that should not exceed 2 hours. This Completion Time assumes complete loss of onsite (DG) AC capability to power the minimum loads needed to respond to analyzed events.

In the event the unit Division 3 DG in conjunction with a unit Division 1 or 2 DG is inoperable, with a unit Division 1 or 2 DG remaining, a significant spectrum of breaks would be capable of being responded to with onsite power. Even the worst case event would be mitigated to some extent-an extent greater than a typical two division design in which this condition represents a complete loss of function. Given the remaining function, a 72 hour Completion Time is appropriate. At the end of this 72 hour period, the unit Division 3 system (HPCS System) could be declared inoperable (See Applicability Note 1) and this Condition could be exited with only one remaining required unit DG inoperable. However, with a unit Division 1 or 2 DG remaining inoperable and the HPCS System declared inoperable, a redundant required feature failure exists, according to Required Action B.3 or C.2.

(continued)

BASES

ACTIONS

F.1 (continued)

In the event the required opposite unit Division 2 DG is inoperable in conjunction with a unit Division 2 DG inoperable, the opposite unit Division 2 subsystems (e.g., SGT subsystem) could be declared inoperable at the end of the 2 hour Completion Time (see Applicability Note 2) and this Condition could be exited with only one required unit DG remaining inoperable. However, with the given unit Division 2 DG remaining inoperable and the opposite unit Division 2 subsystems declared inoperable, redundant required feature failures exist, according to Required Action C.2.

G.1 and G.2

If the inoperable AC electrical power sources cannot be restored to OPERABLE status within the associated 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 MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

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, GDC 18 (Ref. 8). Periodic component tests are supplemented by extensive functional tests during refueling

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

outages under simulated accident conditions. The SRs for demonstrating the OPERABILITY of the DGs are consistent with the recommendations of Regulatory Guide 1.9 (Ref. 3) and Regulatory Guide 1.137 (Ref. 9).

The Surveillances are modified by two Notes to clearly identify how the Surveillances apply to the given unit and opposite unit's Division 2 DGs. Note 1 states that SR 3.8.1.1 through SR 3.8.1.20 are applicable only to the given unit AC electrical power sources and Note 2 states that SR 3.8.1.21 is applicable to the opposite unit's Division 2 DG. These Notes are necessary since the opposite unit AC electrical power source is not required to meet all of the requirements of the given unit AC electrical power sources (e.g., the opposite unit DG is not required to start on the opposite unit's ECCS initiation signal to support OPERABILITY of the given unit).

Where the SRs discussed herein specify voltage and frequency tolerances, the following summary is applicable. The minimum steady state output voltage of 4010 V is greater than 90% of the nominal 4160 V output voltage. This value, which is conservative with respect to the value specified in ANSI C84.1 (Ref. 10), allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90%, or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating. The specified maximum steady state output voltage of 4310 V is within the maximum operating voltage of 110% specified for 4000 V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 4000 V motors is no more than the maximum rated operating voltages. The specified minimum and maximum frequencies of the DG are 58.8 Hz and 61.2 Hz, respectively. These values are equal to ± 2% of the 60 Hz nominal frequency and are derived from the recommendations given in Regulatory Guide 1.9 (Ref. 3).

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BASES

SURVEILLANCE REQUIREMENTS (continued)

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 or capable of being connected to their power source and that appropriate independence of offsite circuits is maintained. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 3.8.1.2 and SR 3.8.1.7

These SRs help to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and 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 have been modified by Notes (Note 1 for SR 3.8.1.7 and Note 1 for SR 3.8.1.2) 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, as recommended by the manufacturer.

For the purposes of SR 3.8.1.2, the DGs are started from normal standby conditions and for the purposes of SR 3.8.1.7, the DGs are started from ambient standby conditions. Normal standby conditions for a DG means that the diesel engine jacket water and lube oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations. Ambient standby conditions for a DG mean that the diesel engine jacket water and lube oil temperatures are within the prescribed temperature bands of these subsystems when the DG has been at rest for an extended period with the pre-lube oil and jacket water circulating systems operational.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.2 and SR 3.8.1.7 (continued)

In order to reduce stress and wear on diesel engines, the manufacturer has recommended that the starting speed of DGs be limited, that warmup be limited to this lower speed, and that DGs be gradually accelerated to synchronous speed prior to loading. These start procedures are the intent of Note 2 of SR 3.8.1.2.

SR 3.8.1.7 requires that, at a 184 day Frequency, the DG starts from standby conditions and achieves required voltage and frequency within 13 seconds. The 13 second start requirement supports the assumptions in the design basis LOCA analysis (Ref. 5). The 13 second start requirement may not be applicable to SR 3.8.1.2 (see Note 2 of SR 3.8.1.2), when a modified start procedure as described above is used. If a modified start is not used, the 13 second start requirement of SR 3.8.1.7 applies. Since SR 3.8.1.7 does require a 13 second start, it is more restrictive than SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2.

In addition, 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 13 seconds. 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.

To minimize testing of the common DG, Note 3 of SR 3.8.1.2 and Note 2 of SR 3.8.1.7 allow a single test for the common DG (instead of two tests, one for each unit) to satisfy the requirements of both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. However, to the extent practicable, the tests should be alternated between units. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit. (C)

The 31 day Frequency for SR 3.8.1.2 is consistent with Regulatory Guide 1.9 (Ref. 3). The 184 day Frequency for SR 3.8.1.7 is a reduction in cold testing consistent with

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.2 and SR 3.8.1.7 (continued)

Generic Letter 84-15 (Ref. 7). These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 3.8.1.3

This Surveillance demonstrates that the DGs are capable of synchronizing and accepting greater than or equal to 90% of the DG continuous load rating. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the DG is connected to the offsite source.

Although no power factor requirements are established by this SR, the DG is normally operated at a power factor between 0.8 lagging and 1.0 when running synchronized with the grid. The 0.8 power factor value is the design rating of the machine at a particular kVA. The 1.0 power factor value is an operational limitation condition where the reactive power component is zero, which minimizes the reactive heating of the generator. Operating the generator at a power factor between 0.8 lagging and 1.0 avoids adverse conditions associated with underexciting the generator and more closely represents the generator operating requirements when performing its safety function (running isolated on its associated 4160 V emergency bus). The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

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

Note 1 modifies this Surveillance to indicate 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 modifies this Surveillance by stating that momentary transients because of changing bus loads do not invalidate this test.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.3 (continued)

Note 3 indicates that this Surveillance must 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.

To minimize testing of the common DG, Note 5 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. However, to the extent practicable, the test should be alternated between units. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit. C

SR 3.8.1.4

This SR provides verification that the level of fuel oil in the day tank is at or above the level at which the low level alarm is annunciated. The level is expressed as an equivalent volume in gallons, and is selected to ensure adequate fuel oil for a minimum of 50 minutes of DG operation at rated capacity.

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

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

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.5 (continued)

fuel oil day tanks once every 31 days eliminates the necessary environment for bacterial survival. This is most effective means in 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, 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 Frequency is established by Regulatory Guide 1.137 (Ref. 10). This SR is for preventive maintenance. The presence of water does not necessarily represent a failure of this SR provided that accumulated water is removed during performance of this Surveillance.

SR 3.8.1.6

This Surveillance demonstrates that each required fuel oil transfer pump operates and automatically transfers fuel oil from its associated storage tank to its associated day tank. It is required to support the 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.

The Frequency for this SR corresponds to the testing requirements for pumps as contained in the ASME Boiler and Pressure Vessel Code, Section XI (Ref. 11).

SR 3.8.1.8

Transfer of each Division 1 and 2 4.16 kV emergency 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 Division 1 and 2 shutdown loads. The 24 month Frequency of the Surveillance is based on engineering judgment taking

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SURVEILLANCE REQUIREMENTS

SR 3.8.1.8 (continued)

into consideration the plant 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 on the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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

SR 3.8.1.9

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

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

largest single load without exceeding predetermined frequency and while maintaining a specified margin to the overspeed trip. The load referenced for the Division 1 DG is the 1190 kW low pressure core spray pump; for the Division 2 DG, the 638 kW residual heat removal (RHR) pump; and for the Division 3 DG the 2421 kW HPCS pump. This Surveillance may be accomplished by:

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

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

Consistent with Regulatory Guide 1.9 (Ref. 3), 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 66.7 Hz, which is the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint. The 24 month Frequency takes into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

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

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. To minimize testing of the common DG, Note 2 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

SR 3.8.1.10

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 DG damage protection. While the DG is not expected to experience this transient during an event, and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

The 24 month Frequency takes into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

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 perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, plant safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consiser the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. To minimize testing of the common DG, Note 2 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

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SR 3.8.1.11

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

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.11 (continued)

shedding of the nonessential loads (Divisions 1 and 2 only) and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The DG auto-start and energization of permanently connected loads time of 13 seconds is derived from requirements of the accident analysis for responding to a design basis large break LOCA (Ref. 5). The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability has been achieved.

The requirement to verify the connection and power supply of permanently connected loads and auto-connected 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, systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of the connection and loading of these loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. The prelube period shall be consistent with manufacturer recommendations. For the purpose of this testing, the DGs must be started from normal standby conditions, that is, with the engine jacket water and lube oil being continuously circulated and temperature is being maintained consistent with manufacturer recommendations. The reason for Note 2 is

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.11 (continued)

that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge plant 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 this assessment. Credit may be taken for unplanned events that satisfy this SR. (C)

SR 3.8.1.12

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.5, this Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (13 seconds) from the design basis actuation signal (LOCA signal). 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 13 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 operate for $\geq$ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.12 (continued)

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with the expected fuel cycle lengths.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. The prelube period shall be consistent with manufacturer recommendations. For the purpose of this testing, the DGs must be started from normal standby conditions, that is, with the engine jacket water and lube oil being continuously circulated and temperature is being maintained consistent with manufacturer recommendations. The reason for Note 2 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, plant 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 this assessment. Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.13

Consistent with Regulatory Guide 1.9 (Ref. 3) paragraph C.2.2.12, this Surveillance demonstrates that DG non-critical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ECCS initiation test signal and critical protective functions (engine overspeed and generator differential current) trip the DG to avert substantial damage to the DG unit. The non-critical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

The 24 month Frequency is based on engineering judgment, taking into consideration plant 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 removes a required DG from service. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. (C)

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.14

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.9, this Surveillance requires demonstration that the DGs can start and run continuously near full load capability for an interval of not less than 24 hours, 22 hours of which is at a load equivalent to 92% and 100% of the continuous rating of the DG, and 2 hours of which is at a load between the 2000 hour rating and the 7 day rating of the DG. The DG starts for this Surveillance can be performed either from normal standby or hot conditions. The provisions for prelube 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.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed at a power factor as close to the accident load power factor as practicable. When synchronized with offsite power, the power factor limit is $\leq$ 0.85. This power factor is chosen to bound the actual worst case inductive loading that the DG could experience under design basis accident conditions.

The 24 month Frequency takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by four Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. 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. Similarly, momentary power factor transients above the limit do not invalidate the test. The reason for Note 2 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, plant safety systems. However, it is acceptable to perform this SR in MODES 1 and 2 provided the other two DGs are OPERABLE, since a perturbation can only affect one divisional DG. If during performance of this SR one of the other DGs becomes inoperable, this Surveillance is to be suspended. In addition, this restriction from normally performing the

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

Surveillance in MODE 1 or 2 with any of the remaining two DGs inoperable 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 with any of the remaining two DGs inoperable . Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Note 3 is provided in recognition that under certain conditions, it is necessary to allow the surveillance to be conducted at a power factor other than the specified limit. During the Surveillance, the DG is normally operated paralleled to the grid, which is not the configuration when the DG is performing its safety function following a loss of offsite power (with or without a LOCA). Given the parallel configuration to the grid during the Surveillance, the grid voltage may be such that the DG field excitation level needed to obtain the specified power factor could result in a transient voltage within the DG windings higher than the recommended values if the DG output breaker were to trip during the Surveillance. Therefore, the power factor shall be maintained as close as practicable to the specified limit while still ensuring that if the DG output breaker were to trip during the Surveillance that the maximum DG winding voltage would not be exceeded. To minimize testing of the common DG, Note 4 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both

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SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within 13 seconds. The 13 second time is derived from the requirements of the accident analysis for responding to a design basis large break LOCA (Ref. 5). 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 13 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 24 month Frequency takes into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR has been modified by three Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The requirement that the diesel has operated for at least 2 hours at 92% to 100% of full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. 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. 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. The prelube period shall be consistent with

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.15 (continued)

manufacturer recommendations. To minimize testing of the common DG, Note 3 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

SR 3.8.1.16

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.11, this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite 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 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 auto-close signal on bus undervoltage, and the individual load time delay relays are reset.

The Frequency of 24 months takes into consideration plant 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 plant safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.16 (continued)

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

SR 3.8.1.17

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.13, demonstration of the parallel test mode override ensures that the DG availability under accident conditions is not compromised as the result of testing. Interlocks to the LOCA sensing circuits cause the Divisions 1 and 2 DGs to automatically reset to ready-to-load operation if an ECCS initiation 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. 12), paragraph 6.2.6(2).

The Division 3 DG overcurrent trip of the SAT feeder breaker to the respective Division 3 emergency bus demonstrates the ability of the Division 3 DG to remain connected to the emergency bus and supplying the necessary loads.

The 24 month Frequency takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR has been 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 (C)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.17 (continued)

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 this assessment. Credit may be taken for unplanned events that satisfy this SR. (C)

SR 3.8.1.18

Under accident conditions with loss of offsite power loads are sequentially connected to the bus by the individual time delay relays. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The -10% load sequence time interval limit ensures that a sufficient time interval exists for the DG to restore frequency and voltage prior to applying the next load. There is no upper limit for the load sequence time interval since, for a single load interval (i.e., the time between two load blocks), the capability of the DG to restore frequency and voltage prior to applying the second load is not negatively affected by a longer than designed load interval, and if there are additional load blocks (i.e., the design includes multiple load intervals), then the lower limit requirements (-10%) will ensure that sufficient time exists for the DG to restore frequency and voltage prior to applying the remaining load blocks (i.e., all load intervals must be $\geq$ 90% of the design interval). Reference 2 provides (C) (C)

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.18 (continued)

a summary of the automatic loading of emergency buses. Since only the Division 1 and 2 DGs have more than one load block, this SR is only applicable to these DGs.

The Frequency of 24 months takes into consideration plant 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 during these MODES would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge plant 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 this assessment. Credit may be taken for unplanned events that satisfy this SR. (C)

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.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.19 (continued)

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 ECCS initiation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. The prelube period shall be consistent with manufacturer recommendations. For the purpose of this testing, the DGs must be started from normal standby conditions, that is, with the engine jacket water and lube oil being continuously circulated and temperature is being 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 plant 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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.19 (continued)

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

SR 3.8.1.20

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

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.9, paragraph C.2.2.14 (Ref. 3).

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG during testing. The prelube period shall be consistent with manufacturer recommendations. For the purpose of this testing, the DGs must be started from normal standby conditions, that is, with the engine jacket water and lube oil continuously circulated and temperature is being maintained consistent with manufacturer recommendations. C

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 the given unit AC sources. This Surveillance is provided to direct that appropriate Surveillances for the required opposite unit AC source is governed by the applicable opposite unit Technical Specifications. Performance of the applicable opposite unit Surveillances will satisfy the opposite unit requirements as well as satisfy the given unit Surveillance Requirement. Exceptions are noted to the opposite unit SRs of LCO 3.8.1. SR 3.8.1.20 is excepted since only one opposite unit DG is

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.21 (continued)

required by the given unit Specification. SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.17, SR 3.8.1.18, and SR 3.8.1.19 are excepted since these SRs test the opposite unit's ECCS initiation signal, which is not required for the AC electrical power sources to be OPERABLE on a given unit.

The Frequency required by the applicable opposite unit SR also governs performance of that SR for the given unit.

As noted, if the opposite unit is in MODE 4 or 5, or moving irradiated fuel assemblies in secondary containment, SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, and SR 3.8.1.14 through SR 3.8.1.16 are not required to be performed. This ensures that a given unit SR will not require an opposite unit SR to be performed, when the opposite unit Technical Specifications exempts performance of an opposite unit SR (however, as stated in the opposite unit SR 3.8.2.1 Note 1, while performance of an SR is exempted, the SR must still be met).

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. UFSAR, Chapter 8.
3. Regulatory Guide 1.9.
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. Regulatory Guide 1.93.
7. Generic Letter 84-15, July 2, 1984.
8. 10 CFR 50, Appendix A, GDC 18.
9. Regulatory Guide 1.137.
10. ANSI C84.1, 1982.
11. ASME, Boiler and Pressure Vessel Code, Section XI.
12. IEEE Standard 308.

BASES

APPLICABILITY (continued)

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

ACTIONS

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, 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 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Entering LCO 3.0.3 while in MODE 1, 2, or 3 would require the unit to be shutdown, but would not require immediate suspension of movement of irradiated fuel assemblies. The Note to the ACTIONS, "LCO 3.0.3 is not applicable," ensures that the actions for immediate suspension of irradiated fuel assembly movement are not postponed due to entry into LCO 3.0.3.

A.1

An offsite circuit is considered inoperable if it is not available to one required 4.16 kV emergency bus. If two or more 4.16 kV emergency buses are required per LCO 3.8.8, division(s) with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for draining the reactor vessel. By the allowance of the option to declare required features inoperable that are not capable of being powered from offsite power, appropriate restrictions can be implemented in accordance with the required feature(s) LCOs' ACTIONS. Required features remaining capable of being powered from a qualified offsite circuit, even if that circuit is considered inoperable because it is not capable of powering other required features, are not declared inoperable by this Required Action. For example, if both Division 1 and 2 emergency buses are required OPERABLE by LCO 3.8.8 and only the Division 1 emergency buses are not capable of being powered from offsite power, then only the required features powered from Division 1 emergency buses are required to be declared inoperable.

(C)

(continued)

BASES

ACTIONS (continued)

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

With the offsite circuit not available to all required divisions, the option still exists to declare all required features inoperable per Required Action A.1. 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 irradiated fuel assemblies in the secondary containment, and activities that could potentially result in inadvertent draining of the reactor vessel.

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 initiate action immediately 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 plant 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 plant safety systems may be without sufficient power.

Pursuant to LCO 3.0.6, the Distribution System ACTIONS are not entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A have been modified by a Note to indicate that when Condition A is entered with no AC power to any required emergency bus, ACTIONS for LCO 3.8.8 must be immediately entered. This Note allows Condition A to provide requirements for the loss of the offsite circuit whether or not a division is de-energized. LCO 3.8.8 provides the appropriate restrictions for the situation involving a de-energized division.

(continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil and Starting Air

BASES

BACKGROUND

Each diesel generator (DG) is provided with a storage tank. The Division 1 and 2 DGs and the opposite unit Division 2 DG storage tank fuel oil capacity, and the Division 3 combined storage tank and day tank fuel oil capacity, is sufficient to operate that DG for a period of 7 days while the DG is supplying maximum post loss of coolant accident load demand (Ref. 1). The maximum load demand is calculated using the assumption that at least two DGs are 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. C

Fuel oil is transferred from each storage tank to its respective day tank by a transfer pump 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 system piping and components, except for fill piping and vents, are located within the diesel buildings. The fuel oil level in the storage tanks is indicated locally, and each storage tank is provided with low level switches that actuate alarm annunciators in the main control room.

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 flashpoint and kinematic viscosity, specific gravity (or API gravity), and impurity level.

Each Division 1 and Division 2 DG has two air start subsystems, each with adequate capacity for five successive starts on the DG without recharging the air start receivers. Each Division 3 DG has two air start subsystems, each with adequate capacity for three successive starts on the DG without recharging the air start receivers.

(continued)

BASES

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in UFSAR, Chapter 6 (Ref. 4) and 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 3.5, Emergency Core Cooling (ECCS) and Reactor Core Isolation Cooling (RCIC) System; and Section 3.6, Containment Systems.

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

LCO

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

The starting air system is required to have a minimum capacity for five successive Division 1 and 2 DG starts and three successive Division 3 DG starts without recharging the air start receivers. While each air start receiver set has the required capacity, both air start receiver sets (and associated air start headers) per DG are required to ensure OPERABILITY of the DG. (c)

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2), are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel

(continued)

BASES

APPLICABILITY (continued)

oil and starting air subsystems support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil and starting air are required to be within limits when the associated DG is required to be OPERABLE.

ACTIONS

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

A.1

With stored fuel oil level not within the specified limit, 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:

a. Full load operation required after an inadvertent start while at minimum required level; or

b. Feed and bleed operations that 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 the 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 actions will be initiated to obtain replenishment, and the low probability of an event during this brief period.

(continued)

BASES

ACTIONS (continued)

B.1

This Condition is entered as a result of a failure to meet the acceptance criterion for particulates. 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, since particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and since 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, resampling, and re-analysis of the DG fuel oil.

C.1

With the new fuel oil properties defined in the Bases for 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, 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 a combination 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 high likelihood that the DG would still be capable of performing its intended function.

D.1

With starting air receiver pressure < 200 psig, sufficient capacity for five successive starts for the Division 1 or 2 DG or three successive starts for the Division 3 DG, as applicable, does not exist. However, as long as the receiver pressure is > 165 psig, there is adequate capacity

(continued)

BASES

ACTIONS

D.1 (continued)

for at least one start, 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.

E.1

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

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the associated fuel oil storage tank for the Division 1 and 2 DGs and the opposite unit Division 2 DG and in the associated fuel oil storage tank and day tank for the Division 3 DG 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. C

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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.2

The tests of new fuel prior to addition to the storage tanks 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 and operation. 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). The tests, limits, and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057-95 (Ref. 6);

b. Verify in accordance with the tests specified in ASTM D975-98b (Ref. 6) that the sample has: 1) an absolute specific gravity at 60°F of $\geq$ 0.83 and $\leq$ 0.89 (or an API gravity at 60°F of $\geq$ 27 and $\leq$ 39) when tested in accordance with ASTM D1298-99 (Ref. 6); 2) a kinematic viscosity at 40°C of $\geq$ 1.9 centistokes and $\leq$ 4.1 centistokes when tested in accordance with ASTM D445-97 (Ref. 6); and 3) a flash point of $\geq$ 125°F when tested in accordance with ASTM D93-99c (Ref. 6); and

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-93 (Ref. 6) or a water and sediment content within limits when tested in accordance with ASTM D2709-96e (Ref. 6). The clear and bright appearance with proper color test is only applicable to fuels that meet the ASTM color requirement (i.e., ASTM color 5 or less).

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 since the fuel oil is not added to the storage tanks.

Following the initial new fuel oil sample, the fuel oil is analyzed within 31 days following addition of the new fuel oil to the fuel oil storage tank(s) to establish that the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.2 (continued)

other properties specified in Table 1 of ASTM D975-98b (Ref. 6) are met for new fuel oil when tested in accordance with ASTM D975-98b (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-95 (Ref. 6), ASTM D2622-98 (Ref. 6), or ASTM D4294-98 (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if 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.

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

Particulate concentrations should be determined in accordance with ASTM D5452-98 (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.

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

SR 3.8.3.3

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 starts for each Division 1 and Division 2 DG, and three engine starts for each Division 3 DG without recharging. The pressure specified in this SR is intended to support the lowest value at which the required number of starts can be accomplished.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3 (continued)

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

SR 3.8.3.4

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 storage tank once every 92 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. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent a failure of this SR provided that accumulated water is removed during performance of this Surveillance. (C)

REFERENCES

1. UFSAR, Section 9.5.4.
2. Regulatory Guide 1.137.
3. ANSI N195, Appendix B, 1976.
4. UFSAR, Chapter 6.
5. UFSAR, Chapter 15.
6. ASTM Standards: D4057-95; D975-98b; D1298-99; D445-97; D93-99c; D4176-93; D2709-96e; D1552-95; D2622-98; D4294-98; D5452-98. (B)(C)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources – Operating

BASES

BACKGROUND

The station DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment. 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 requirements of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3).

The 125 VDC electrical power system consists of three independent Class 1E DC electrical power subsystems, Divisions 1, 2, and 3. The 250 VDC electric power system consists of one Class 1E DC electrical power subsystem, Division 1. Each subsystem consists of a battery, associated battery charger, and all the associated control equipment and interconnecting cabling.

During normal operation, the DC loads are powered from the battery chargers with the batteries floating on the system. In case of loss of normal power to the battery charger, the DC loads are automatically powered from the batteries.

The Division 1 safety related DC power source consists of one 125 V and one 250 V battery bank and associated full capacity battery chargers (one per battery bank). The Division 1 125 VDC power source provides the control power for its associated Class 1E AC power load group, 4.16 kV switchgear, and 480 V load centers and control power for non-Class 1E loads. Also, the 125 VDC power sources provide DC power to the emergency lighting system, diesel generator (DG) auxiliaries, and the DC control power for the Engineered Safety Feature (ESF) and non-ESF systems. The 250 VDC power source supplies power to the Reactor Core Isolation Cooling (RCIC) System, and RCIC primary containment isolation valves (PCIVs). It also supplies power to the main turbine emergency bearing oil pumps, main generator emergency seal oil pumps, and the process computer, however, these are not Technical Specification related loads.

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(continued)

BASES

BACKGROUND (continued)

between redundant Class 1E subsystems such as batteries, battery chargers, or distribution panels.

The batteries for a DC electrical power subsystem are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The voltage design limit is 1.81 V per cell (Ref. 4).

Each Division 1, 2, and 3 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 has sufficient capacity to restore the battery bank from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads (Ref. 4). |

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 5), and Chapter 15 (Ref. 6), assume that ESF systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation.

The OPERABILITY of the DC 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 DC sources OPERABLE during accident conditions in the event of:

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

b. A worst case single failure.

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

LCO

The Division 1 125 VDC and 250 VDC, Division 2 125 VDC, and Division 3 125 VDC, and opposite unit Division 2 125 VDC electrical power subsystems, each subsystem consisting of one battery, one battery charger, and the corresponding | 

(continued)

BASES

LCO (continued)

control equipment and interconnecting cabling supplying power to the associated bus within the divisions, are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. Loss of any DC electrical power subsystem does not prevent the minimum safety function from being performed (Ref. 4).

APPLICABILITY

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, and 3 to ensure safe unit operation and to ensure that:

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

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

The DC electrical power requirements for MODES 4 and 5 and other conditions in which the DC electrical power sources are required are addressed in LCO 3.8.5, "DC Sources – Shutdown."

ACTIONS

A.1

Condition A represents one division 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 division. The 2 hour limit is consistent with the allowed time for an inoperable DC distribution system division.

If one of the Division 1 or 2 125 VDC electrical power subsystems is inoperable (e.g., inoperable battery, inoperable battery charger, or inoperable battery charger and associated inoperable battery), the remaining DC electrical power subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. Since

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(continued)

BASES

ACTIONS

A.1 (continued)

a subsequent worst case single failure could, however, result in the loss of minimum necessary DC electrical subsystems, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 7) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown.

B.1

With the Division 3 DC electrical power subsystem inoperable, the HPCS System may be incapable of performing its intended function and must be immediately declared inoperable. This declaration also requires entry into applicable Conditions and Required Actions of LCO 3.5.1, "ECCS – Operating."

C.1

With the Division 1 250 VDC electrical power subsystem inoperable, the RCIC System and the RCIC DC powered PCIVs may be incapable of performing their intended functions and must be immediately declared inoperable. This declaration also requires entry into applicable Conditions and Required Actions of LCO 3.5.3, "RCIC System," and LCO 3.6.1.3, "PCIVs." 1C

D.1

If the opposite unit Division 2 125 VDC electrical power subsystem is inoperable (e.g., inoperable battery, inoperable charger, or inoperable battery charger and associated battery), certain redundant Division 2 features (e.g., a standby gas treatment subsystem) will not function if a design basis event were to occur. Therefore, a 7 day Completion Time is provided to restore the opposite unit Division 2 125 VDC electrical power subsystem to 1E 1C

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.6

Battery charger capability requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 9), the battery charger supply is required 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.

The Surveillance Frequency is acceptable, given the administrative controls existing to ensure adequate charger performance during these 24 month intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

SR 3.8.4.7

A battery service test is a special test of the battery's capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length correspond to the design duty cycle requirements as specified in Reference 4.

The Surveillance Frequency of 24 months is acceptable, given unit conditions required to perform the test and the other requirements existing to ensure adequate battery performance during these 24 month intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test provided the modified performance discharge test completely envelops the service test. This substitution is acceptable because a modified performance discharge test represents a more severe test of battery capacity than SR 3.8.4.7. The reason for Note 2 is that performing the Surveillance would remove a required 125 VDC electrical power subsystem from service, perturb the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.7 (continued)

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 this assessment. Credit may be taken for unplanned events that satisfy the Surveillance. (C)

SR 3.8.4.8

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

A battery modified performance discharge test is a simulated duty cycle normally consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance discharge test, both of which envelope the duty cycle of the service test. (The test can consist of a single rate if the test rate employed for the performance discharge test exceeds the 1 minute rate and (C)

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

continues to envelope the duty cycle of the service test.) To ensure the modified performance discharge test completely envelopes the service test duty cycle, additional loads and durations of the duty cycle may be added to the modified performance discharge test prior to going to the constant current rate. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test. (c)

A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test when the modified performance discharge test is performed in lieu of a service test. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance is consistent with IEEE-450 (Ref. 8) and IEEE-485 (Ref. 11). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating, since IEEE-485 (Ref. 11) recommends using an ageing factor of 125% in the battery sizing calculation. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

< 100% of the manufacturers rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturers rating. Degradation is indicated, consistent with IEEE-450 (Ref. 8), 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 manufacturers rating. The 12 month and 60 month Frequencies are consistent with the recommendations in IEEE-450 (Ref. 8). The 24 month Frequency is derived from the recommendations of IEEE-450 (Ref. 8).

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required 125 VDC electrical power subsystem 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 this assessment. Credit may be taken for unplanned events that satisfy this SR. (E)

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.9

With the exception of this Surveillance, all other Surveillances of this Specification (SR 3.8.4.1 through 3.8.4.8) are applied to the given unit DC sources. This Surveillance is provided to direct that appropriate Surveillances for the required opposite unit DC source are governed by the applicable opposite unit 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 opposite unit SR also governs performance of that SR for the given unit.

As noted, if the opposite unit is in MODE 4 or 5, or moving irradiated fuel assemblies in secondary containment, SR 3.8.4.6, SR 3.8.4.7, and SR 3.8.4.8 are not required to be performed. This ensures that a given unit SR will not require an opposite unit SR to be performed, when the opposite unit Technical Specifications exempts performance of an opposite unit SR (however, as stated in the opposite unit SR 3.8.5.1 Note 1, while performance of an SR is exempted, the SR must still be met).

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. Regulatory Guide 1.6, March 10, 1971.
3. IEEE Standard 308, 1971.
4. UFSAR, Section 8.3.2.
5. UFSAR, Chapter 6.
6. UFSAR, Chapter 15.
7. Regulatory Guide 1.93, December 1974.
8. IEEE Standard 450, 1987.
9. Regulatory Guide 1.32, August 1972.
10. IEEE Standard 485, 1978.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.5 DC Sources – Shutdown

BASES

BACKGROUND

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

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident and transient analyses in the UFSAR, Chapter 6 (Ref. 1) and Chapter 15 (Ref. 2), assume that Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators, emergency auxiliaries, and control and switching during all MODES of operation and during movement of irradiated fuel assemblies in the secondary containment.

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

The OPERABILITY of the minimum DC electrical power sources during MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment ensures that:

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

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

c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as an inadvertent draindown of the vessel or a fuel handling accident.

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, and 3 have no specific analyses in MODES 4

(C)

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

and 5. Worst case bounding events are deemed not credible in MODES 4 and 5 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.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case Design Basis Accidents which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the Industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

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

LCO

The DC electrical power subsystems, each required subsystem consisting of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated buses within the division, are required to be OPERABLE to support some of the required DC Distribution System divisions required OPERABLE by LCO 3.8.8, "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

(continued)

BASES

LCO (continued)

consequences of postulated events during shutdown (e.g., fuel handling accidents and inadvertent reactor vessel draindown).

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment provide assurance that:

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core in case of an inadvertent draindown of the reactor vessel;

b. Required features needed to mitigate a fuel handling accident are available;

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

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

The DC electrical power requirements for MODES 1, 2, and 3 are covered in LCO 3.8.4.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, 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 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Entering LCO 3.0.3 while in MODE 1, 2, or 3 would require the unit to be shutdown, but would not require immediate suspension of movement of irradiated fuel assemblies. The Note to the ACTIONS, "LCO 3.0.3 is not applicable," ensures that the actions for immediate suspension of irradiated fuel assembly movement are not postponed due to entry into LCO 3.0.3.

(continued)

BASES

ACTIONS (continued)

A.1 and A.2

With one or more required Division 1 ,2, and 3 DC electrical power subsystems inoperable, the associated DC electrical power distribution subsystem may not be capable of supporting its required features. However, if the opposite unit's DC electrical power subsystem for the same division is OPERABLE, power can be supplied by the OPERABLE opposite unit DC electrical power subsystem. This will maintain the given unit's DC electrical power distribution subsystem energized from an OPERABLE DC electrical power subsystem, ensuring it remains capable of supporting its required features. Therefore, Required Action A.1 requires verification within 1 hour that the associated DC electrical power distribution subsystem is energized by the OPERABLE opposite unit DC electrical power subsystem. If this cannot be verified within 1 hour, then Condition B is required to be entered and its Required Actions taken. If this can be verified, then operation in the condition is allowed to continue and the inoperable required Division 1, 2, and 3 DC electrical power subsystems must be restored to OPERABLE status (and the associated DC electrical power distribution subsystem must be realigned to its unit DC electrical power subsystem) within 72 hours. The Completion Time is acceptable since the opposite unit's DC electrical power subsystem is capable of powering both unit's loads in the event of an accident on the opposite unit and the low probability of an accident occurring during this time. As noted, this allowance is only applicable if the opposite unit is not in MODE 1, 2, or 3. This allowance can not be used with the opposite unit in MODES 1, 2, and 3 since the associated subsystems are required the support the OPERABILITY of opposite unit safety equipment. The Division 2 DC electrical power source subsystem for each unit supports redundant safety equipment for both units and the batteries have insufficient capacity to support the required loads for both units if either unit is in MODE 1, 2, or 3. Therefore, this allowance is only permitted to be used when both units are in shutdown conditions (MODE 4, 5, or defueled) when divisional separation is not required.

(c) 1

(continued)

BASES

ACTIONS (continued)

B.1, B.2.1, B.2.2, B.2.3, and B.2.4

By allowing the option to declare required features inoperable with associated DC electrical power subsystems inoperable, appropriate restrictions are implemented in accordance with the affected system LCOs' ACTIONS. However, 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 irradiated fuel assemblies in the secondary containment, and any activities that could result in inadvertent draining of the reactor vessel).

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 DC electrical power subsystems and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the plant safety systems.

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

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

SR 3.8.5.1 requires all Surveillances required by SR 3.8.4.1 through SR 3.8.4.9 to be applicable. Therefore, see the corresponding Bases for LCO 3.8.4 for a discussion of each SR.

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DC sources from being discharged below their capability to provide the required power supply or otherwise rendered inoperable during the performance of SRs. It is the intent that these SRs must still be capable of being met, but actual performance is not required.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Chapter 6.

2. UFSAR, Chapter 15.

BASES

SURVEILLANCE REQUIREMENTS

Table 3.8.6-1 (continued)

as pilot cells are those whose temperature, voltage, and electrolyte specific gravity approximate the state of charge of the entire battery.

The Category A limits specified for electrolyte level are based on manufacturers recommendations and are consistent with the guidance in IEEE-450 (Ref. 3), with the extra ¼ inch allowance above the high water level indication for operating margin to account for temperatures and charge effects. In addition to this allowance, footnote (a) to Table 3.8.6-1 permits the electrolyte level to be temporarily above the specified maximum level during and, for a limited time, following an equalizing charge (normally up to 3 days following the completion of an equalize charge to allow electrolyte stabilization), provided it is not overflowing. These limits ensure that the plates suffer no physical damage, and that adequate electron transfer capability is maintained in the event of transient conditions. IEEE-450 (Ref. 3) recommends that electrolyte level readings should be made only after the battery has been at float charge for at least 72 hours. C

The Category A limit specified for float voltage is ≥ 2.13 V per cell. This value is based on the recommendation of IEEE-450 (Ref. 3), which states that prolonged operation of cells below 2.13 V can reduce the life expectancy of cells.

The Category A limit specified for specific gravity for each pilot cell is ≥ 1.200 (0.015 below the manufacturer's fully charged nominal specific gravity or a battery charging current that had stabilized at a low value). This value is characteristic of a charged cell with adequate capacity. According to IEEE-450 (Ref. 3), the specific gravity readings are based on a temperature of 77°F (25°C).

The specific gravity readings are corrected for actual electrolyte temperature and level. For each 3°F (1.67°C) above 77°F (25°C), 1 point (0.001) is added to the reading; 1 point is subtracted for each 3°F below 77°F. The specific gravity of the electrolyte in a cell increases with a loss of water due to electrolysis or evaporation. Level correction will be in accordance with manufacturers recommendations.

(continued)

BASES

BACKGROUND (continued)

The list of all required distribution buses for Unit 1 and Unit 2 is located in Tables B 3.8.7-1 and B 3.8.7-2, respectively. C

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 1) and Chapter 15 (Ref. 2), assume Engineered Safety Features (ESF) systems are OPERABLE. The AC and DC 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 3.5, Emergency Core Cooling Systems (ECCS) and Reactor Core Isolation Cooling (RCIC) System; and Section 3.6, Containment Systems.

The OPERABILITY of the AC and DC electrical power distribution systems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the plant. This includes maintaining the AC and DC electrical power sources and associated distribution systems OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite or onsite AC electrical power; and

b. A worst case single failure.

The AC and DC electrical power distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The required AC and DC electrical power distribution subsystems listed in Table B 3.8.7-1 for Unit 1 and Table B 3.8.7-2 for Unit 2 ensure the availability of AC and DC electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. The Division 1, 2, and 3 AC and DC bus electrical power primary distribution subsystems are required to be C

(continued)

BASES

LCO (continued)

OPERABLE and certain buses of the opposite unit Division 2 AC and DC electrical power distribution subsystems are required to be OPERABLE to support the equipment required to be OPERABLE by LCO 3.6.3.1, LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.1. As noted in Table B 3.8.7-1 and Table B 3.8.7-2 (Footnote a), each division of the AC and DC electrical power distribution systems is a subsystem. C

Maintaining the Division 1, 2, and 3 AC and DC electrical power distribution subsystems OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Any two of the three divisions of the distribution system are capable of providing the necessary electrical power to the associated ESF components. Therefore, a single failure within any system or within the electrical power distribution subsystems does not prevent safe shutdown of the reactor.

OPERABLE AC electrical power distribution subsystems require the associated buses to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated buses to be energized to their proper voltage from either the associated battery or charger.

Based on the number of safety significant electrical loads associated with each bus listed in Table B 3.8.7-1 for Unit 1 and Table B 3.8.7-2 for Unit 2, if one or more of the buses becomes inoperable, entry into the appropriate ACTIONS of LCO 3.8.7 is required. C Some buses, such as distribution panels, which help comprise the AC and DC distribution systems are not listed in Table B 3.8.7-1 for Unit 1 and Table B 3.8.7-2 for Unit 2. C 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 3.8.7-1 for Unit 1 and Table B 3.8.7-2 for Unit 2 C (e.g., a breaker supplying a single distribution panel fails open), the individual loads on the bus would be considered 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

(continued)

BASES

LCO (continued)

inoperable due to a failure also affecting the OPERABILITY of a bus listed in Table B 3.8.7-1 for Unit 1 and Table B 3.8.7-2 for Unit 2 (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). (e)

In addition, at least one tie breaker between the redundant Division 2, safety related AC and DC emergency power distribution subsystems must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, which could cause the failure of a redundant subsystem and a loss of essential safety function(s). For the Division 2 AC power distribution subsystems, if both the unit tie breakers are closed, the electrical power distribution subsystem that is not being powered from its normal source (i.e., it is being powered from its alternate power source through the redundant electrical power distribution subsystem) is considered inoperable. The restriction of maintaining electrical separation applies to the onsite, safety related, redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E 4.16 kV emergency buses from being supplied from the same offsite source. For the DC power distribution subsystems, both the Unit 1 and Unit 2 power distribution subsystems are considered inoperable when both cross tie breakers are closed because of the limitation of the battery capacity to supply both units when in MODES 1, 2, and 3. (c)

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, and 3 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

(continued)

BASES

APPLICABILITY (continued)

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

Electrical power distribution subsystem requirements for MODES 4 and 5 and other conditions in which AC and DC electrical power distribution subsystems are required. are covered in the Bases for LCO 3.8.8, "Distribution Systems—Shutdown."

ACTIONS

A.1

With one or more Division 1 and 2 required AC buses, load centers, motor control centers, or distribution panels inoperable and a loss of function has not yet 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 buses, load centers, motor control centers, and distribution panels must be restored to OPERABLE status within 8 hours.

The Condition A worst scenario is two divisions without AC power (i.e., no offsite power to the divisions and the associated DGs inoperable). In this situation, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operators' attention be focused on minimizing the potential for loss of power to the remaining division by stabilizing the unit and restoring power to the affected division. 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 operators' attention is diverted from the evaluations and actions necessary to restore power to the affected division to the actions associated with taking the unit to shutdown within this time limit.

(continued)

BASES

ACTIONS

A.1 (continued)

b. The low potential for an event in conjunction with a single failure of a redundant component in the division with AC power. (The redundant component is verified OPERABLE in accordance with Specification 5.5.12, "Safety Function Determination Program (SFDP).")

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 LCO 3.8.7.a. If Condition A is entered while, for instance, a DC electrical power distribution subsystem is inoperable and subsequently returned OPERABLE, LCO 3.8.7.a may already have been not met for up to 2 hours. This situation could lead to a total duration of 10 hours, since initial failure of LCO 3.8.7.a, to restore the AC electrical power distribution system. At this time, a DC electrical power distribution subsystem could again become inoperable, and the AC electrical power distribution could be restored OPERABLE. This could continue indefinitely.

This Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This results in establishing the "time zero" at the time LCO 3.8.7.a was initially not met, instead of at the time Condition A was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet LCO 3.8.7.a indefinitely.

B.1

With one or more Division 1 and 2 DC electrical distribution subsystems 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 subsystems could result in the minimum required

(continued)

BASES

ACTIONS

B.1 (continued)

ESF functions not being supported. Therefore, the required DC electrical power distribution subsystem(s) must be restored to OPERABLE status within 2 hours by powering the bus from the associated battery or charger.

Condition B worst scenario is two divisions without adequate DC power, potentially with both the battery significantly degraded and the associated charger nonfunctioning. In this situation, the plant is significantly more vulnerable to a complete loss of all DC power. It is, therefore, imperative that the operator's attention focus on stabilizing the plant, minimizing the potential for loss of power to the remaining divisions, and restoring power to the affected division(s).

This 2 hour limit is more conservative than Completion Times allowed for the majority of components that could be without power. Taking exception to LCO 3.0.2 for components without adequate DC power, that would have Required Action Completion Times shorter than 2 hours, is acceptable because of:

a. The potential for decreased safety when requiring a change in plant conditions (i.e., requiring a shutdown) while not allowing stable operations to continue;

b. The potential for decreased safety when requiring entry into numerous applicable Conditions and Required Actions for components without DC power while not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected division; and

c. The potential for an event in conjunction with a single failure of a redundant component.

The 2 hour Completion Time for DC electrical power distribution subsystems is consistent with Regulatory Guide 1.93 (Ref. 3).

(continued)

BASES

ACTIONS

B.1 (continued)

The second Completion Time for Required Action B.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 LCO 3.8.7.a. If Condition B is entered while, for instance, an AC electrical power distribution subsystem is inoperable and subsequently returned OPERABLE, LCO 3.8.7.a 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 LCO 3.8.7.a, to restore the DC electrical power distribution system. At this time, an AC electrical power distribution subsystem could again become inoperable, and DC electrical power distribution subsystem could be restored OPERABLE. This could continue indefinitely.

This Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This allowance results in establishing the "time zero" at the time LCO 3.8.7.a was initially not met, instead of the time Condition B was entered. The 16 hour Completion Time is an acceptable limitation on this potential of failing to meet LCO 3.8.7.a indefinitely.

C.1

With one or more required opposite unit Division 2 AC or DC electrical power distribution subsystems inoperable and a loss of function has not yet occurred, certain redundant Division 2 features (e.g., a standby gas treatment subsystem) will not function if a design basis event were to occur. Therefore, a 7 day Completion Time is provided to restore the required opposite unit Division 2 AC and DC electrical power distribution subsystems to OPERABLE status. The 7 day Completion Time takes into account the capacity and capability of the remaining AC and DC electrical power distribution subsystems, and is based on the shortest restoration time allowed for the systems affected by the inoperable AC and DC electrical power distribution subsystems in the respective system specifications.

(continued)

BASES

ACTIONS

C.1 (continued)

The Required Action is modified by a Note indicating that the applicable Conditions of LCO 3.8.1 be entered and Required Actions taken if the inoperable opposite unit AC electrical power distribution subsystem results in an inoperable required offsite circuit. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. C

D.1 and D.2

If the inoperable electrical power distribution system cannot be restored to OPERABLE status within the associated Completion Times, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

With the Division 3 electrical power distribution system inoperable (i.e., one or both Division 3 AC or DC electrical power distribution subsystems inoperable), the Division 3 powered systems are not capable of performing their intended functions. Immediately declaring the affected supported features, e.g., the High Pressure Core Spray System and its associated primary containment isolation valves, inoperable allows the ACTIONS of LCO 3.5.1, "ECCS—Operating," and LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," to apply appropriate limitations on continued reactor operation.

F.1

With the Division 1 250 V DC subsystem inoperable, the RCIC System and the RCIC DC powered PCIVs may be incapable of performing their intended functions and must be immediately declared inoperable. This declaration also requires entry

(continued)

BASES

ACTIONS

F.1 (continued)

into applicable Conditions and Required Actions of LCO 3.5.3, "Reactor Core Isolation Cooling (RCIC) System," and LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)."

G.1

Condition G corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. When the inoperability of two or more inoperable electrical power distribution subsystems, in combination, result in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown. The term "in combination" means that the loss of function must result from the inoperability of two or more AC and DC electrical power distribution subsystems; a loss of function solely due to a single AC or DC electrical power distribution subsystem inoperability even with another AC or DC electrical power distribution subsystem concurrently inoperable, does not require entry into Condition G. In addition, for this Action, Division 3 is considered redundant to Division 1 and 2 ECCS. (c)

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

Meeting this Surveillance verifies that the AC and DC 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 and DC electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Chapter 6.

2. UFSAR, Chapter 15.

3. Regulatory Guide 1.93, Revision 0, December 1974.

Table B 3.8.7-1 (page 1 of 1)
Unit 1 AC and DC Electrical Power Distribution Systems

TYPE	VOLTAGE	DIVISION 1[a]	DIVISION 2[a][b]	DIVISION 3[a]
AC buses	4160 V	141Y	142Y	143
	480 V	135X and 135Y MCCs 135X-1, 135X-2, 135X-3, 135Y-1, and 135Y-2	136X and 136Y MCCS 136X-1, 136X-2, 136X-3, 136Y-1, and 136Y-2	MCC 143-1
	120 V	Distribution Panels in 480V MCCS 135X-1, 135X-2, 135X-3, and 135Y-1	Distribution Panels in 480V MCCS 136X-1, 136X-2, 136X-3, and 136Y-2	Distribution Panels in 480V MCC 143-1
DC buses	250 V	MCC 121Y		
	125 V	Distribution Panel 111Y	Distribution Panel 112Y	Distribution Panel 113

(a) Each division of the AC and DC electrical power distribution systems is a subsystem.

(b) OPERABILITY requirements of the opposite unit's Division 2 AC and DC electrical power distribution subsystems require OPERABILITY of all the opposite unit's Division 2 4160 VAC, 480 VAC, 120 VAC, and 125 VDC buses listed in the Unit 2 Table.

Table B 3.8.7-2 (page 1 of 1)
Unit 2 AC and DC Electrical Power Distribution Systems

TYPE	VOLTAGE	DIVISION 1[a]	DIVISION 2[a][b]	DIVISION 3[a]
AC buses	4160 V	241Y	242Y	243
	480 V	235X and 235Y MCCs 235X-1, 235X-2, 235X-3, 235Y-1, and 235Y-2	236X and 236Y MCCS 236X-1, 236X-2, 236X-3, 236Y-1, and 236Y-2	MCC 243-1
	120 V	Distribution Panels in 480V MCCs 235X-1, 235X-2, 235X-3, and 235Y-1	Distribution Panels in 480V MCCs 236X-1, 236X-2, 236X-3, and 236Y-2	Distribution Panels in 480V MCC 243-1
DC buses	250 V	MCC 221Y		
	125 V	Distribution Panel 211Y	Distribution Panel 212Y	Distribution Panel 213

(a) Each division of the AC and DC electrical power distribution systems is a subsystem.

(b) OPERABILITY requirements of the opposite unit's Division 2 AC and DC electrical power distribution subsystems require OPERABILITY of all the opposite unit's Division 2 4160 VAC, 480 VAC, 120 VAC, and 125 VDC buses listed in the Unit 1 Table.

BASES (continued)

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support features. This LCO explicitly requires energization of the portions of the electrical distribution system, including the opposite unit Division 2 electrical distribution subsystem, necessary to support OPERABILITY of Technical Specifications' required systems, equipment, and components – both specifically addressed by their own LCOs, and implicitly required by the definition of OPERABILITY.

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

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment provide assurance that:

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core in case of an inadvertent draindown of the reactor vessel;

b. Systems needed to mitigate a fuel handling accident 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 or refueling condition.

The AC and DC electrical power distribution subsystem requirements for MODES 1, 2, and 3 are covered in LCO 3.8.7.

(continued)

A.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

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

LCO 3.8.1.a a. Two ~~physically independent~~ circuits between the offsite transmission network and the onsite Class 1E distribution system, and LA.1

LCO 3.8.1.b LCO 3.8.1.c b. ~~Separate and independent~~ diesel generators* ~~0, 1A, 2A and 1B~~ with:

1. For diesel generator 0, 1A and 2A: A.2

SR 3.8.1.4 a) A separate day fuel tank containing a minimum of 250 gallons of fuel.

A.3 moved to ITS 3.8.3 b) A separate fuel storage system containing a minimum of 31,000 gallons of fuel.

2. For diesel generator 1B, a separate fuel storage tank and a day tank containing a minimum of 29,750 gallons of fuel. A.2

SR 3.8.1.4 3. ~~A separate fuel transfer~~ pump. (550 gallons of fuel) M.2

LA.1

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION: (All proposed Applicability Notes) A.4 L.19 C

ACTION A a. With one offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. L.1 C

ACTION G (All proposed Required Action A.3 2nd Completion Time)

ACTION C b. With either the 0 or 1A diesel generator inoperable, demonstrate the OPERABILITY of the above required 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. If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE

~~*See page 3/4 8-1(a).~~

LA.5

A.1 A.18

All proposed Surveillance Table Notes 1 and 2

ELECTRICAL POWER SYSTEMS

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:

LD.1

SR 3.8.1.1 a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and L.6

SR 3.8.1.8 b. Demonstrated OPERABLE at least once per ~~18~~ 24 months during shutdown by manually transferring unit power supply from the normal circuit to the alternate circuit. A.20 C

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:

L.7

a. At least once per 31 days ~~on a STAGGERED TEST BASIS~~ by:

SR 3.8.1.4 1. Verifying the fuel level in the day fuel tank. Moved to ITS 3.8.3 A.3

2. Verifying the fuel level in the fuel storage tank.

SR 3.8.1.6 3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank. once per 92 days L.8

SR 3.8.1.2 SR 3.8.1.7 4. Verifying the diesel starts from ambient condition and ~~accelerates to 900 rpm +5%, -2%~~ Achieves a generator voltage ≥ 4010 V and a frequency ≥ 58.8 Hz in less than or equal to 13 seconds*. ~~The~~ generator voltage and frequency shall be 4160 ±150 volts and 60 ~~+ 3.0, -1.2~~ ± 1.2 Hz ~~within 13 seconds~~** after the start signal. Achieves a steady state L.9 A.11 Add proposed SR 3.8.1.2 Note 3 and SR 3.8.1.7 Note 2

SR 3.8.1.3 & SR 3.8.1.3 Note 1 5. Verifying the diesel generator is synchronized, and then loaded to 2400 kW to 2600 kW*** in accordance with the manufacturer's recommendations, and operates with this load for at least 60 minutes.

Add proposed SR 3.8.1.3 Notes 3 and 4 M.9

Add proposed SR 3.8.1.3 Note 5 A.11

SR 3.8.1.2 Note 1 SR 3.8.1.7 Note 1 *All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer. LA.4

SR 3.8.1.7 Frequency SR 3.8.1.2 Note 1 **Surveillance testing to verify the diesel generator start (13 second) time from ambient conditions shall be performed at least once per 184 days. All other engine starts performed for the purpose of meeting these surveillance requirements may be conducted in accordance with warmup and loading procedures, as recommended by the manufacturer, in order to minimize mechanical stress and wear on the diesel generator caused by fast starting of the diesel generator. LA.4

SR 3.8.1.3 Note 2 ***Transients, outside of this load band, do not invalidate the surveillance tests.

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses. L.10

(Moved to ITS 3.8.3) 7. Verifying the pressure in required diesel generator air start receivers to be greater than or equal to 200 psig. A.3

SR 3.8.1.5 b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tanks. L.11

A.3 c. By sampling and analyzing stored and new fuel oil in accordance with the following:

(Moved to ITS Section 5.5)

1. At least once per 92 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained and tested in accordance with the applicable ASTM Standards has:

   a) A water and sediment content within applicable ASTM limits.

   b) A kinematic viscosity at 40°C within applicable ASTM limits.

2. At least every 31 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained in accordance with the applicable ASTM Standard has a total particulate contamination of less than 10 mg/l when tested in accordance with the applicable ASTM Standard.

d. At least once per (18) (24) months during shutdown by: L.6 A.20 LD.1 A.12 (c)

1. (Not used).

SR 3.8.1.9 2. Verifying the diesel generator (ITS associated single largest post-accident load) capability* to reject a load of greater than or equal to 1190 kW for diesel generator 0, greater than or equal to 638 kW for diesel generators 1A and 2A, and greater than or equal to 2421 kW for diesel generator 1B while maintaining engine speed less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint or 15% above nominal, whichever is less. LA.5 A.6 A.11 (c)

Add proposed SR 3.8.1.9 NOTE 2

Add proposed SR 3.8.1.10 NOTE 2

SR 3.8.1.10 3. Verifying the diesel generator capability* to reject a load of 2600 kW without tripping. The generator voltage shall not exceed 5000 volts during and following the load rejection. A.12

SR 3.8.1.11 4. Simulating a loss of offsite power* by itself, and: L.12

(or actual)

SR 3.8.1.11 Note 1 *All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period as recommended by the manufacturer. LA-4 (c)

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.11

a) For Divisions 1 and 2 and for Unit 2 Division 2:

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

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 13 seconds, energizes the auto-connected loads and operates for greater than or equal to 5 minutes while its generator is so loaded. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 150 volts and 60 ± 1.2 Hz during this test.

b) For Division 3:

1) Verifying de-energization of the emergency bus.

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency bus with its loads within 13 seconds and operates for greater than or equal to 5 minutes while its generator is so loaded. After energization, the steady-state voltage and frequency of the emergency bus shall be maintained at 4160 ± 150 volts and 60 ± 1.2 Hz during this test.

M.1

5. Verifying that on an ECCS actuation test or actual signal, without loss of offsite power, diesel generators 0, 1A, and 1B start* on the auto-start signal and operate on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 ~~± 410~~ -150 volts and 60 ~~± 3.0~~ -1.2 Hz within 13 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within ~~these~~ limits during this test.

SR 3.8.1.12

L.12

4160 ± 150 and 60 ± 1.2

L.9

SR 3.8.1.19

6. Simulating a loss of offsite power in conjunction with an ECCS actuation test signal,* and:

Actual or

L.12

a) For Divisions 1 and 2:

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

SR 3.8.1.12 Note 1 and SR 3.8.1.19 Note 1

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, ~~as recommended by the manufacturer.~~

LA.4

C

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.19

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 13 seconds, energizes the auto-connected emergency loads through the load sequencer (time delay relays A.19) and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ±416 volts and 60 ±1.2 Hz during this test. (A) (B)

b) For Division 3:

1) Verifying de-energization of the emergency bus.

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency bus with its loads (M.1) within 13 seconds and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady state voltage and frequency of the emergency bus shall be maintained at 4160 ±416 volts and 60 ±1.2 Hz during this test. (B)

SR 3.8.1.13

7. Verifying that all diesel generator 0, 1A, and 1B automatic trips except the following are automatically bypassed on an ECCS actuation signal: (L.12) (actual or simulated)

a) For Divisions 1 and 2 - engine overspeed, generator differential current, and emergency manual stop. (A.13) (A.11)

b) For Division 3 - engine overspeed, generator differential current, and emergency manual stop. (A.12)

SR 3.8.1.14

8. *Verifying the diesel generator operates** for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 2860 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to 2400 kW to 2600 kW.*** The generator voltage and frequency shall be 4160 +420, -150 volts and 60 +3.0, -1.2 Hz within 13 seconds after the start signal; the steady state (Add proposed SR 3.8.1.14 Note 4) (Add power factor requirement) (M.10) (L.13) (C)

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer. (A.12)

SR 3.8.1.14 Note 3 / SR 3.8.1.15 Note 1 ***Transients, outside of this load band, do not invalidate the surveillance tests.

A.1

ITS 3.8.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued) add proposed SR 3.8.1.15 Note 3 — A.11

SR 3.8.1.15 generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24 hour test, perform Surveillance Requirement 4.8.1.1.2.a.4.**,# — L.13, A.12, C

9. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 2860 kW. — LA.7

A.12

10. Verifying the diesel generator's capability to:

SR 3.8.1.16

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.

A.12

11. Verifying that with diesel generator O, 1A, and 1B operating in a test mode and connected to its bus:

SR 3.8.1.17

a) For Divisions 1 and 2, that a simulated ECCS actuation signal (actuator) overrides the test mode by returning the diesel generator to standby operation. — L.12

b) For Division 3, that a simulated trip (actuator) of the diesel generator overcurrent relay trips the SAT feed breaker to bus 143 and that the diesel generator continues to supply normal bus loads. — A.14

SR 3.8.1.18 12. Verifying that the automatic load sequence timer (time delay relay) is OPERABLE with the interval between each load block within ±10% of its design interval for diesel generators 0 and 1A. — L.20, C

13. Verifying that the following diesel generator lockout features prevent diesel generator operation only when required: — L.14

SR 3.8.1.15 Note 2: All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer. — LA.4

SR 3.8.1.15 Note 1: **If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 24 hour test. Instead, the diesel generator may be operated at ≥2400 kW and ≤2600 kW for 2 hours or until operating temperature has stabilized.

SR 3.8.1.14 Note 2: #This test may be performed during power operation provided that the other required diesel generators are OPERABLE. Should any of the other required diesel generators become inoperable, the test shall be aborted. — A.15, C

Momentary transients below the load limit do not invalidate the test

A.1

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION:

a. With either Division 1 or Division 2 of the above required A.C. distribution system inoperable or not energized, restore the inoperable division to OPERABLE and energized status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours

b. With Division 3 of the above required A.C. distribution system inoperable or not energized, declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1.

(See ITS 3.8.7)

ACTION A / ACTION G

c. With Unit 2 Division 1 or Unit 2 Division 2 of the above required A.C. distribution systems inoperable or not energized, restore the inoperable division to OPERABLE and energized status within ~~7 days~~ 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

A.17

C

d. With both Unit 2 Division 1 and Unit 2 Division 2 of the above required A.C. distribution systems inoperable or not energized, restore at least one of the inoperable A.C. distribution systems to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

(See ITS 3.8.7)

SURVEILLANCE REQUIREMENTS

4.8.2.1 The above required A.C. distribution system electrical divisions shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and voltage on the busses/panels.

A.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

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

qualified

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and LA.1 (LCO 3.8.1.a)

b. Separate and independent diesel generators* 0, 1A, 2A and 2B with: LA.1 (LCO 3.8.1.b)

1. For diesel generator 0, 1A and 2A: (LCO 3.8.1.c)

a) A separate day fuel tank containing a minimum of 250 gallons of fuel. A.2 (SR 3.8.1.4)

b) A separate fuel storage system containing a minimum of 31,000 gallons of fuel. A.3 moved to ITS 3.8.3

2. For diesel generator 2B, a separate fuel storage tank and a day tank containing a minimum of 29,750 gallons of fuel. A.2 (SR 3.8.1.4)

550 gallons of fuel M.2

3. ~~A separate fuel transfer pump.~~ LA.1

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3. A.4 L.19

ACTION: Add proposed Applicability Notes

ACTION A

a. With one offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. L.1 Add proposed Required Action A.3 2nd Completion Time (ACTION G)

ACTION C

b. With either the 0 or 2A diesel generator inoperable, demonstrate the OPERABILITY of the above required 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. If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE

~~*See page 3/4 8-1(a).~~ A.5

A.1 A.18

Add proposed Surveillance Table Notes 1 and 2

ELECTRICAL POWER SYSTEMS

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:

SR 3.8.1.1 a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and LD.1 L.6

SR 3.8.1.8 b. Demonstrated OPERABLE at least once per ~~18~~ 24 months during shutdown by A.20 manually transferring unit power supply from the normal circuit to the alternate circuit. E

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:*

a. At least once per 31 days ~~on a STAGGERED TEST BASIS~~ by: L.7

SR 3.8.1.4 1. Verifying the fuel level in the day fuel tank. (Moved to ITS 3.8.3)

2. Verifying the fuel level in the fuel storage tank. A.3

SR 3.8.1.6 3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank once per 92 days L.8

SR 3.8.1.2 SR 3.8.1.7 4. Verifying the diesel starts from ambient condition and ~~accelerates to 900 rpm + 5%, -2%~~ Achieves a generator voltage of 2410 V & frequency ≥ 58.8 Hz in less than or equal to 13 seconds*. ~~The~~ generator voltage and frequency shall be 4160 ±150 volts and 60 ± 3.0 ± 1.2 Hz within 13 seconds** after the start signal. Achieves a steady state L.9 A.11

Add proposed SR 3.8.1.2 Note 3 and SR 3.8.1.7 Note 2

SR 3.8.1.3 & SR 3.8.1.3 Note 1 5. Verifying the diesel generator is synchronized, and then loaded to 2400 kW to 2600 kW*** in accordance with the manufacturer's recommendations, and operates with this load for at least 60 minutes.

Add proposed SR 3.8.1.3 Notes 3 and 4 M.9

Add proposed SR 3.8.1.3 Note 5 A.11

SR 3.8.1.2 Note 1 & SR 3.8.1.7 Note 1 *All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, ~~as recommended by the manufacturer.~~ LA.4

SR 3.8.1.7 Frequency SR 3.8.1.2 Note 1 **Surveillance testing to verify the diesel generator start (13 second) time from ambient conditions shall be performed at least once per 184 days. All other engine starts performed for the purpose of meeting these surveillance requirements may be conducted in accordance with warmup and loading procedures, as recommended by the manufacturer, in order to minimize ~~mechanical stress and wear on the diesel generator caused by fast starting of the diesel generator.~~ LA.4

SR 3.8.1.3 Note 2 ***Transients, outside of this load band, do not invalidate the surveillance tests.

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses. L.10

Moved to ITS 3.8.3

7. Verifying the pressure in required diesel generator air start receivers to be greater than or equal to 200 psig. A.3

SR 3.8.1.5

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tanks. L.11 A.3

Moved to ITS Section 5.5

c. By sampling and analyzing stored and new fuel oil in accordance with the following:

1. At least once per 92 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained and tested in accordance with the applicable ASTM Standards has:

a) A water and sediment content within applicable ASTM limits.

b) A kinematic viscosity at 40°C within applicable ASTM limits.

2. At least every 31 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained in accordance with the applicable ASTM Standard has a total particulate contamination of less than 10 mg/l when tested in accordance with the applicable ASTM Standard.

d. At least once per 18 (24) months during shutdown by: A.20 L.6 LD.1 C

1. (Not Used).

SR 3.8.1.9

2. Verifying the diesel generator capability to reject a load of greater than or equal to 1190 kW for diesel generator 0, greater than or equal to 638 kW for diesel generators 1A and 2A, and greater than or equal to 2421 kW for diesel generator 2B (its associated single largest post-accident load) while maintaining engine speed less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint or 15% above nominal, whichever is less. A.12 LA.5 A.6 A.11 Add proposed SR 3.8.1.9 NOTE 2 Add proposed SR 3.8.1.10 NOTE 2 C

SR 3.8.1.10

3. Verifying the diesel generator capability to reject a load of 2600 kW without tripping. The generator voltage shall not exceed 5000 volts during and following the load rejection. A.12

SR 3.8.1.11

4. Simulating a loss of offsite power* by itself, and: (or actual) L.12

SR 3.8.1.11 Note 1

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer. LA.4 C

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.11 a) For Divisions 1 and 2 and for Unit 1 Division 2:

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

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 13 seconds, energizes the auto-connected loads and operates for greater than or equal to 5 minutes while its generator is so loaded. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 150 volts and 60 ± 1.2 Hz during this test.

b) For Division 3:

1) Verifying de-energization of the emergency bus.

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency bus with its loads within 13 seconds and operates for greater than or equal to 5 minutes while its generator is so loaded. After energization, the steady-state voltage and frequency of the emergency bus shall be maintained at 4160 ± 150 volts and 60 ± 1.2 Hz during this test. M.1

or actual L.12

SR 3.8.1.12 5. Verifying that on an ECCS actuation test signal, without loss of offsite power, diesel generators 0, 2A, and 2B start on the auto-start signal and operate on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 ~~+ 420~~ -150 volts and 60 ~~+ 3.0~~, -1.2 Hz within 13 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within ~~these~~ limits during this test. L.9

4160 ± 150 and 60 ± 1.2

SR 3.8.1.19 6. Simulating a loss of offsite power in conjunction with an ECCS actuation test signal,* and:

Actual or L.12

a) For Divisions 1 and 2:

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

SR 3.8.1.12 Note 1 and SR 3.8.1.19 Note 1 All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, ~~as recommended by the manufacturer~~. LA.4 C

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.1.19

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 13 seconds, energizes the auto-connected emergency loads through the load sequencer (time delay relays) and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ±416 volts and 60 ±1.2 Hz during this test. A.19 C

b) For Division 3:

1) Verifying de-energization of the emergency bus.

2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency bus with its loads within 13 seconds and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady state voltage and frequency of the emergency bus shall be maintained at 4160 ±416 volts and 60 ±1.2 Hz during this test. M.1

SR 3.8.1.13

7. Verifying that all diesel generator 0, 2A, and 2B automatic trips except the following are automatically bypassed on an ECCS actuation signal: L.12 (actual or simulated)

a) For Divisions 1 and 2 - engine overspeed, generator differential current, A.13 and emergency manual stop A.11

b) For Division 3 - engine overspeed, generator differential current, and emergency manual stop A.12

SR 3.8.1.14

8. Verifying the diesel generator operates* for at least 24 hours. (Add proposed SR 3.8.1.14 Note 4) (Add power factor requirement) M.10 C During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 2860 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to 2400 kW to 2600 kW.*** The generator voltage and frequency shall be 4160 +420, -150 volts and 60 +3.0, -1.2 Hz within 13 seconds after the start signal; the steady-state L.13

A.12 *All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer.

SR 3.8.1.14 Note 1 / SR 3.8.1.15 Note 1 ***Transients, outside of this load band, do not invalidate the surveillance tests.

ITS 3.8.1

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued) — add proposed SR 3.8.1.15 Note 3 — A.11

SR 3.8.1.15 — generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24 hour test, perform Surveillance Requirement 4.8.1.1.2.a.4.**,# — L.13

9. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 2860 kW. — A.12, LA.7

SR 3.8.1.16

10. Verifying the diesel generator's capability to: — A.12

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.

SR 3.8.1.17

11. Verifying that with diesel generator 0, 2A, and 2B operating in a test mode and connected to its bus: — A.12

a) For Divisions 1 and 2, that a actual or simulated ECCS actuation signal overrides the test mode by returning the diesel generator to standby operation. — L.12

b) For Division 3, that a actual or simulated trip of the diesel generator overcurrent relay trips the SAT feed breaker to bus 243 and that the diesel generator continues to supply normal bus loads.

SR 3.8.1.18

12. Verifying that the automatic load sequence timer time delay relay is OPERABLE with the interval between each load block within ±10% of its design interval for diesel generators 0 and 2A. — A.14, L.20, C

13. Verifying that the following diesel generator lockout features prevent diesel generator operation only when required: — L.14

SR 3.8.1.15 Note 2 — *All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period as recommended by the manufacturer — LA.4

SR 3.8.1.15 Note 1 — **If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 24 hour test. Instead, the diesel generator may be operated at ≥ 2400 kW and ≤ 2600 kW for 2 hours or until operating temperature has stabilized. — A.15

SR 3.8.1.14 Note 2 — #This test may be performed during power operation provided that the other required diesel generators are OPERABLE. Should any of the other required diesel generators become inoperable, the test shall be aborted. — C

Momentary transients below the load limit do not invalidate the test.

A.1

ITS 3.8.1

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION:

a. With either Division 1 or Division 2 of the above required A.C. distribution system inoperable or not energized, restore the inoperable division to OPERABLE and energized status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours

b. With Division 3 of the above required A.C. distribution system inoperable or not energized, declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1.

See ITS 3.8.7

ACTION A / ACTION G

c. With Unit 1 Division 1 or Unit 1 Division 2 of the above required A.C. distribution systems inoperable or not energized, restore the inoperable division to OPERABLE and energized status within ~~7 days~~ 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

A.17

C

d. With both Unit 1 Division 1 and Unit 1 Division 2 of the above required A.C. distribution systems inoperable or not energized, restore at least one of the inoperable A.C. distribution systems to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

See ITS 3.8.7

SURVEILLANCE REQUIREMENTS

4.8.2.1 The above required A.C. distribution system electrical divisions shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and voltage on the busses/panels.

DISCUSSION OF CHANGES
ITS: 3.8.1 - AC SOURCES—OPERATING

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e, the Improved Standard Technical Specifications (ISTS)).

A.2 The details relating to the required day tank level in CTS 3.8.1.1.b.1 and b.2 have been moved to proposed SR 3.8.1.4. No technical changes are being made; therefore, this change is considered administrative in nature.

A.3 The technical content of CTS 3.8.1.1.b.1.b), 3.8.1.1.b.2, 4.8.1.1.2.a.2, 4.8.1.1.2.a.7, 4.8.1.1.2.c, and 4.8.1.1.2.f is being moved to ITS 3.8.3. This is in accordance with the format of the BWR ISTS, NUREG-1434, Rev. 1. Any technical changes to these requirements are addressed in the Discussion of Changes for ITS: 3.8.3.

A.4 The ITS Applicability includes two Notes. In the event the HPCS System is inoperable, Note 1 allows the Division 3 DG to be inoperable. In addition, certain safety related components (e.g., one standby gas treatment subsystem) are powered from Division 2 of the opposite unit. In the event all these required safety related components powered from the opposite unit are inoperable, Note 2 allows the opposite unit Division 2 AC sources to not be required to be OPERABLE. The effect is to continue to allow the ACTIONS to be applied to other AC sources inoperabilities, without the complexity of also having the AC Sources Specification address concurrent Division 3 DG or opposite unit Division 2 AC source inoperability. The format and implementation rules for the ITS would dictate several additional ACTIONS or a separate LCO for the Division 3 DG and the opposite unit Division 2, to address each AC source inoperability in combination with each of the other required AC sources in order to provide ACTIONS similar to those in the current LaSalle 1 and 2 TS. The actual implementation of the Applicability Notes is consistent with the intent of CTS 3.8.1.1, which separates Actions for Divisions 1 and 2 DGs from Actions for Division 3 DG and opposite unit Division 2. Also, since Note 2 modifies the Applicability of ITS 3.8.1, the allowance in CTS 3.8.1.1 Action g to discontinue performance of Surveillance Requirement 4.8.1.1.1.a when the required safety related components powered from the opposite unit are declared

ADMINISTRATIVE

A.4 (cont'd) inoperable is no longer necessary. This change is consistent with ITS LCO 3.0.2 which does not require ACTIONS to be performed when the Technical Specification is not applicable unless specifically stated. Because this change is an enhanced presentation of existing intent, the change is considered administrative.

A.5 The * footnote to CTS LCO 3.8.1.1.b provides alternative actions to those described in CTS 3.8.1.1 action statement b. Part 1 of the * footnote allows Surveillance Requirement 4.8.1.1.1.a to be eliminated when the 0 diesel generator (LaSalle 1 and 2 common Division 1 diesel generator) is inoperable for planned maintenance and testing. However, Part B of the * footnote defines specific requirements for Surveillance Requirement 4.8.1.1.1.a when the 0 diesel generator is inoperable for planned maintenance and testing. ITS 3.8.1 Condition B defines requirements for the Division 1 DG when the Division 1 DG is inoperable for planned maintenance or testing. ITS 3.8.1 Condition C defines requirements for the Division 1 DG when the Division 1 DG is inoperable for reasons other than Condition B. With regard to the Division 1 DG, ITS 3.8.1 Condition C is not entered and the associated Required Actions are not required when the Division 1 DG is inoperable for reasons that meet the entry conditions and Required Actions and associated Completion Times of Condition B. As such, it is unnecessary to state that the Required Actions are eliminated. Because this change is an enhanced presentation of existing intent, the change is considered administrative.

A.6 CTS 4.8.1.1.2.d.2 requires the DG to reject the single largest load while maintaining the engine speed increase $\leq$ 75% of the difference between nominal speed and the overspeed trip setpoint or $\leq$ 15% of the nominal speed, whichever is less. These two possible values for the overspeed trip point are fixed by the design of the DG unit. The appropriate value (i.e., the most limiting, which is 66.7 Hz) is presented in proposed SR 3.8.1.9. This presentation eliminates the basis for the accepted value from the Technical Specifications, moving it to the Bases. Since there is no difference in the requirement, this is an editorial presentation preference only.

A.7 AC Sources in CTS 3.8.1.1 (ITS 3.8.1) are considered a support system to the Distribution System in CTS 3.8.2.1 (ITS 3.8.7). 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 AC Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in this event (an entire division may be without power), specific direction to take appropriate ACTIONS for the

ADMINISTRATIVE

A.7 (cont'd) Distribution System is added (ITS 3.8.1, Note to ACTION E) when there is no power for a division. This format and construction implements the existing treatment of this condition within the framework of the LaSalle 1 and 2 Improved Technical Specification methods.

A.8 CTS 3.8.1.1 Action d requires the HPCS System to be declared inoperable and to take the Action required by Specification 3.5.1 when the Division 3 DG is inoperable. CTS 3.8.1.1 Action g requires Specifications 3.6.5.3, 3.6.6.1, and 3.7.2 Actions to be performed when various Division 2 loads are declared inoperable. The format of the ITS does not include providing "cross references". The individual Specifications adequately prescribe the Required Actions for inoperable systems, subsystems, trains, components, and devices without such references. Therefore, the current LaSalle 1 and 2 TS references to "take the ACTION required by..." in CTS 3.8.1.1 Actions d and g serve no functional purpose, and their deletion is an administrative presentation preference.

A.9 CTS 3.8.1.1 Actions i, j, k, and l specify which ACTION requirements apply with various combinations of AC source inoperabilities. Section 1.3 of ITS states that when situations are discovered that require entry into more than one Condition at a time, the Required Actions for each Condition must be performed within the associated Completion Time. In addition, to avoid the misinterpretation that LCO 3.0.3 (CTS 3.0.3) must be entered if Actions are not specifically defined for multiple combinations of inoperabilities, the Bases of ITS LCO 3.0.3 state that LCO 3.0.3 is applicable when, "...no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit." As a result, it is not necessary to provide specific actions to reference other actions. Therefore, CTS 3.8.1.1 Actions i, j, k, and l are not included as separate ITS 3.8.1 ACTIONS. Since this change preserves existing intent, this change is considered an administrative change.

A.10 The format of the ITS allows multiple Conditions to be simultaneously entered. With three or more required AC sources inoperable (e.g., two offsite circuits and one DG), ACTIONS would be taken in accordance with ITS 3.8.1, and ITS LCO 3.0.3 entry conditions would not be met. However, CTS 3.8.1.1 does not provide Actions for these conditions. Therefore, a CTS 3.0.3 entry would be required. To preserve the existing intent for CTS 3.0.3 entry, ITS 3.8.1 ACTION H is added to direct entry into ITS LCO 3.0.3.

ADMINISTRATIVE (continued)

A.11 CTS 4.8.1.1.2.a.4, 4.8.1.1.2.a.5, 4.8.1.1.2.d.2, 4.8.1.1.2.d.3, and 4.8.1.1.2.d.8 specify requirements for testing of a DG (0 diesel generator) that is common to both units. Therefore, a Note is added to ITS SRs (SR 3.8.1.2 Note 3, SR 3.8.1.3 Note 5, SR 3.8.1.7 Note 2, SR 3.8.1.9 Note 2, SR 3.8.1.10 Note 2, SR 3.8.1.14 Note 4, and SR 3.8.1.15 Note 3) to clearly state the current plant interpretation, i.e., a single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. This is acceptable since the main purpose of the Surveillance can be met performing the test on either unit. If the DG fails one of these Surveillances, the DG is considered inoperable on both units unless the cause of the failure can be directly related to only one unit.

A.12 The * footnote to CTS 4.8.1.1.2, which allows DG engine pre-lubrication when starting diesel generators, is referenced by CTS 4.8.1.1.2.d.2, 4.8.1.1.2.d.3, 4.8.1.1.2.d.8, 4.8.1.1.2.d.9, 4.8.1.1.2.d.10, and 4.8.1.1.2.d.11. These Surveillance Requirements define requirements for operating DGs. Therefore, it is unnecessary to include a note that allows DG starting to be proceeded by DG engine pre-lubrication. This change is consistent with the ISTS and does not alter the existing intent. Therefore, this change is considered administrative.

A.13 CTS 4.8.1.1.2.d.7 requires a verification that all automatic trips except engine overspeed, generator differential current, and emergency manual stop are automatically bypassed on an ECCS actuation signal. The emergency manual stop is not an automatic DG trip. This trip manually trips the fuel racks, and must be manually initiated by an operator. Therefore, this trip is not included in the ITS, and since the CTS only requires automatic trips to be verified, its deletion is considered administrative.

A.14 CTS 4.8.1.1.2.d.12 references load sequence timers. LaSalle 1 and 2 design does not include load sequencer timers. Specific safety related loads are sequenced onto the emergency busses by time delay relays. As such, the wording of ITS SR 3.8.1.18 (CTS 4.8.1.1.2.d.12) has been modified to reference time delay relays. This change preserves existing intent. Therefore, this change is considered an administrative change.

A.15 If CTS 4.8.1.1.2.d.8 (the DG restart test portion) fails after the performance of the 24 hour DG load test, the ** footnote to CTS 4.8.1.1.2.d.8 allows the diesel generator to be operated at 2600 kW for 2 hours or until operating temperature has stabilized. ITS SR 3.8.1.15 Note 1 only includes a requirement that load must be $\geq$ 2400 kW and $\leq$ 2600 kW for 2 hours within 5 minutes of starting the

ADMINISTRATIVE

A.15 (cont'd) SR. Operation ≥ 2400 kW and ≤ 2600 kW for 2 hours has been the accepted manufacturer's recommendation to achieve hot conditions (i.e., a stabilized operating temperature) and is consistent with the ISTS. Since the prerequisite for the SR is effectively unchanged, this change is considered administrative.

A.16 CTS 3.0.5 has been incorporated into the ACTIONS of ITS 3.8.1. ITS 3.8.1 is only applicable in MODES 1, 2, and 3. Therefore, the statement in CTS 3.0.5, which states that the Specification is not applicable in Operational Condition (MODE) 4 or 5, is no longer necessary and is deleted. This change is administrative.

A.17 CTS 3.8.2.1.d requires the opposite unit Division 1 4.16 kV bus and cross-tie breaker be OPERABLE and CTS 3.8.2.1 Action c provides a 7 day restoration time if the opposite unit Division 1 4.16 kV bus or cross-tie breaker is inoperable. However, this bus and breaker are also part of the alternate offsite circuit pathway, and only a 72 hour restoration time is allowed for an offsite circuit in CTS 3.8.1.1 Action a. In ITS, this bus and cross-tie breaker are only identified in the ITS 3.8.1 Bases as part of the alternate offsite circuit pathway to the given unit. This change simply clarifies that this requirement is associated with the ITS AC Sources Specifications. Therefore, this change to both include the bus and breaker in ITS 3.8.1 and apply a 72 hour restoration time is considered administrative. (C) (C)

A.18 Since the Specification has been prepared for both units, two Notes have been added to the Surveillance Requirements (ITS Surveillance Table Notes 1 and 2) to clearly define the applicability of Surveillances to both units. An additional Surveillance (proposed SR 3.8.1.21) has also been added to ensure the opposite unit's power sources are properly tested. Since these Notes are considered clarifications to the current requirements these modifications are considered administrative.

A.19 The requirement of CTS 4.8.1.1.2.d.6.a)2) that the auto-connected emergency loads be energized "through the load sequencer" for Division 1 and 2 is changed to "including through time delay relays, where applicable" (SR 3.8.1.19). The LaSalle 1 and 2 design does not include "load sequencers" but includes "time delay relays" for some individual components (e.g., Low Pressure Coolant Injection A and B pumps). The term "load sequencer" as used in CTS 4.8.1.1.2.d.6.a)2) is taken to mean "time delay relays, where applicable" installed for the associated components. Therefore, this change is considered administrative. (C)

ADMINISTRATIVE (continued)

A.20 The CTS 4.8.1.1.1.b and 4.8.1.1.2.d existing limitation on 18-month Surveillances to perform them "during shutdown" is more specifically presented in the proposed Surveillances. Each proposed SR contains a specific Note limiting the performance in MODES 1 and 2. Additionally, the ITS Note clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. (C)

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 4.8.1.1.2.d.4 and 4.8.1.1.2.d.6 require de-energization and re-energization of the Division 3 bus and its loads for loss-of-offsite-power simulation testing and for testing of response to a loss-of-offsite-power in conjunction with an ECCS actuation. The ITS SR 3.8.1.11 and SR 3.8.1.19 are written to differentiate between the Division 3 loads that are permanently connected and the auto-connected loads such as the diesel generator cooling water pump. This more specific delineation is considered a more restrictive change with regard to plant operation.

M.2 Currently, CTS 3.8.1.1.b.2 requires that the combined fuel oil volume of the Division 3 DG (1B and 2B) fuel storage tank and day tank to be $\geq$ 29,750 gallons. No minimum volume for the day tank is provided; i.e., all the fuel oil can be in the fuel storage tank and the LCO requirement is met. To ensure that the day tank maintains a minimum fuel oil volume (sufficient to operate the DG for 50 minutes without makup), a new requirement is added to ITS SR 3.8.1.4 for the Division 3 DG to maintain 550 gallons of fuel oil in the day tank. Since this change adds an additional requirement that is not currently in the CTS, this change is considered more restrictive.

M.3 Not used.

M.4 Part B of the * footnote to CTS 3.8.1.1 Action b allows Surveillance Requirement 4.8.1.1.1.a (ITS SR 3.8.1.1) to be performed within 48 hours prior to removal of the 0 diesel generator (Division 1 DG) from service for planned maintenance or testing. Performance of this Surveillance ensures a reliable power source remains while the DG is inoperable. If the Surveillance is performed 48 hours prior to removal of the DG from service, the configuration of the offsite circuits may have been changed. Therefore, ITS 3.8.1 Required action B.2 requires SR 3.8.1.1 to be performed within 1 hour following removal of the diesel generator from service. This change is consistent with the use and application of the ISTS and is considered more restrictive on plant operation.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.5 The * footnote to CTS 3.8.1.1 Action b states that the provisions of Specification 3.0.4 (ITS LCO 3.0.4) are not applicable when the 0 diesel generator (Division 1 DG) is removed from service for pre-planned maintenance or testing. ITS 3.8.1 does not provide this exception to ITS LCO 3.0.4. Elimination of this exception will require the inoperable DG to be restored to OPERABLE status prior to making a MODE change. This will ensure all required AC sources are OPERABLE prior to making a MODE change, so that accident analysis assumptions are met. Elimination of this exception to ITS LCO 3.0.4 is an added restriction on plant operation.

M.6 CTS 3.8.1.1 Action e requires the unit to be placed in Hot Shutdown (Mode 3) if one of the two inoperable offsite circuits is not restored to Operable status in 24 hours. ITS 3.8.1 ACTION G will require the unit to be placed in Mode 4 within 36 hours, in addition to being in Mode 3 within 12 hours. This will ensure the unit is placed in a Mode where the LCO requirements do not have to be met. This change is more restrictive on plant operations.

M.7 When the opposite unit's Division 2 diesel generator is inoperable, CTS 3.8.1.1 Action g only requires a DG start verification or a verification that a common mode failure does not exist on the unit Division 2 diesel generator. ITS 3.8.1 ACTION C requires a DG start verification or a verification that a common mode failure does not exist on all required OPERABLE DGs. This requirement is added to ensure that a common failure affecting more than one diesel generator is detected thereby minimizing the risk of insufficient standby AC sources available to power the minimum required ESF functions. This is necessary since all five DGs are of a similar design. Since additional requirements have been added, this change is considered more restrictive on plant operation.

M.8 CTS 3.8.1.1 Action h allows one offsite circuit and the Division 3 DG to be inoperable concurrently for up to 72 hours. ITS 3.8.1 ACTION E will limit this time to 12 hours. This new time is consistent with the time allowed in CTS 3.8.1.1 Action c (ITS 3.8.1 ACTION E) when the Division 1 or 2 DG and one offsite circuit is concurrently inoperable. Limiting this situation to 12 hours adds a restriction not currently imposed in the LaSalle 1 and 2 CTS and will ensure proper actions are taken in a timely manner when multiple AC Sources are inoperable. This is also consistent with Regulatory Guide 1.93.

M.9 Two Notes have been added to CTS 4.8.1.1.2.a.5. Proposed SR 3.8.1.3 Note 3 precludes this Surveillance from being performed on more than one DG at a time. This will ensure that an electrical disturbance during the DG test can only

TECHNICAL CHANGES - MORE RESTRICTIVE

M.9 (cont'd) adversely affect one DG. Proposed SR 3.8.1.3 Note 4 requires that this SR be immediately preceded by a successful performance of SR 3.8.1.2 (the DG start Surveillance). This will ensure the DG load carrying capability is tested subsequent to a successful DG start test. While these Notes clearly represent current LaSalle 1 and 2 practice, they are more restrictive than the CTS since the SR could currently be performed without these restrictions.

M.10 Limitations on the operating power factor are added to CTS 4.8.1.1.2.d.8, the 24-hour run Surveillance (proposed SR 3.8.1.14, including Note 3). These limitations ensure the DG is conservatively tested at as close to accident conditions as reasonable provided the power factor can be attained. The actual power factor values have been added to the Bases. A Note has been also added to CTS 4.8.1.1.2.d.8 (proposed SR 3.8.1.14 Note 1) to ensure a momentary transient that results in the power factor not being met does not invalidate the 24 hour run. The change to include any power factor requirement is more restrictive on plant operation. |

M.11 CTS 4.8.1.1.2.e, the 10 year DG simultaneous start test, does not provide a minimum voltage the DGs must attain within the 13 second DG start time assumed in the accident analysis. Proposed SR 3.8.1.20 requires the minimum voltage to be 3744 V. The new minimum voltage limit ensures that components powered by the associated bus will have sufficient voltage to perform their required function. This acceptance criterion is consistent with all other DG start acceptance criteria. This is an added restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The CTS 3.8.1.1.a, 3.8.1.1.b, 3.8.1.1.b.3, and 3.8.2.1.d details relating to system design and OPERABILITY (i.e., that the offsite circuits are "physically independent," the DGs are "separate and independent," the nomenclature of the DGs, that each DG has "a separate fuel transfer pump," and some components of the opposite unit's offsite circuit) are proposed to be relocated to the Bases. The details for system OPERABILITY are not necessary in the LCO. The definition of OPERABILITY suffices. The design details are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the AC Sources

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) since OPERABILITY requirements are adequately addressed in ITS 3.8.1, "AC Sources—Operating." As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.2 Not used.

LA.3 Details of CTS 3.8.1.1 Action g, regarding the subsystems required to be declared inoperable, are proposed to be relocated to the Bases. These details are design details associated with the opposite unit's division and not necessary to ensure proper application of CTS 3.8.1.1 Action g (proposed Applicability Note 2 to ITS 3.8.1). The requirements of ITS 3.8.1 and the associated Surveillance Requirements for the opposite unit's AC electrical power sources are adequate to ensure proper action is taken when an opposite unit AC electrical power source is inoperable. As such, these relocated requirements are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases are controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.4 The * footnote to CTS 4.8.1.1.2, 4.8.1.1.2.d.4, 4.8.1.1.2.d.5, 4.8.1.1.2.d.6, 4.8.1.1.2.d.8, and 4.8.1.1.2.e specifies that DG starts may be preceeded by an engine prelube as recommended by the manufacturer, and the ** footnote to CTS 4.8.1.1.2.a.4 specifies that diesel engine warmup and loading procedures are used in order to minimize mechanical stress and wear on the DGs caused by fast starting. These details are proposed to be relocated to the Bases and are not included in ITS SR 3.8.1.2, SR 3.8.1.7, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.15, SR 3.8.1.19, and SR 3.8.1.20 since these are details relating to the reason for the associated Notes to these SRs. These details are not necessary to ensure proper application of CTS 3/4.8.1.1 Surveillance Requirements. The requirements of ITS 3.8.1 and the associated Surveillance Requirements are adequate to ensure the diesel generators are maintained OPERABLE. As such, these relocated requirements are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases are controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.5 The CTS 4.8.1.1.2.d.2 specific kilowatt value of the single largest post-accident load for the single load rejection Surveillance Requirement is proposed to be relocated to the Bases. The reference to the specific value of the single largest

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.5 (cont'd) post-accident load within the Technical Specifications is not necessary to adequately present the requirement. The value of the load is specifically detailed in the Bases. These details are not necessary to ensure the OPERABILITY of the diesel generators. The requirements of ITS 3.8.1 and the associated Surveillance Requirements (including SR 3.8.1.9) for the diesel generators are adequate to ensure the diesel generators are maintained OPERABLE. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.6 Not used.

LA.7 CTS 4.8.1.1.2.d.9, which addresses the specific load value for the auto-connected loads, is proposed to be relocated to the UFSAR. In addition, the specific bus designation (141Y and 241Y) associated with the offsite circuit path specified in CTS 3.8.2.1.d is proposed to be relocated to the UFSAR. The specific load value for the autoconnected loads on the diesel generators and bus designation are design details. These details are not necessary to ensure the OPERABILITY of the diesel generators or offsite circuits. The definition of OPERABILITY, the requirements of ITS 3.8.1, and the associated Surveillance Requirements for the diesel generators and offsite circuits are adequate to ensure the AC sources are maintained OPERABLE. Changes to the UFSAR are controlled by 10 CFR 50.59. In addition, any change to the loads placed on the DG will be controlled by 10 CFR 50.59 (a design change is required to change the actual loads). As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety.

LA.8 The details in CTS 3.8.1.1.b footnote * provision E, that the control circuit for the unit cross-tie breakers between buses 142Y and 242Y are temporarily modified to allow the breakers to be closed, is proposed to be relocated to the Bases. This provision is required to be able to ensure an alternate source (the unit or opposite unit Division 2 DG) is capable of supplying the unit and opposite unit Division 2 emergency buses while maintenance is being performed on the common DG (DG 0). The detail of the method in which this is accomplished is not necessary to be in the ITS to ensure this can be achieved. ITS 3.8.1 Required Action B.1 requires immediate verification that the unit crosstie breakers between the unit and opposite unit Division 2 emergency buses are capable of being closed with a DG powering one of the buses. Therefore, the

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LA.8 (cont'd) relocated requirements are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LD.1 The Frequency for performing CTS 4.8.1.1.1.b, 4.8.1.2.d.2, 4.8.1.2.d.3, 4.8.1.2.d.4, 4.8.1.2.d.5, 4.8.1.2.d.6, 4.8.1.2.d.7, 4.8.1.2.d.8, 4.7.1.2.d.10, 4.8.1.2.d.11, and 4.8.1.2.d.12 (proposed SRs 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.19, 3.8.1.13, 3.8.1.14, 3.8.1.15, 3.8.1.16, 3.8.1.17, and 3.8.1.18, respectively) has been extended from 18 to 24 months. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed 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.

SR 3.8.1.8 requires the transfer of each 4.16 kV emergency bus power supply from the normal offsite circuit to the alternate offsite circuit to demonstrate the OPERABILITY of the alternate circuit. Extending the Surveillance interval for this SR is acceptable for the following reasons: the design, in conjunction with Technical Specification requirements which limit the extent and duration of inoperable AC sources, provides substantial redundancy in AC sources; breaker verification and periodic breaker maintenance is based on performance history for the breakers and is designed for maximum availability.

The portions of the test not directly associated with the functioning of the offsite source and breaker movement are equivalent to a LOGIC SYSTEM FUNCTIONAL TEST. For these logic tests, the NRC Safety Evaluation Report (dated August 2, 1993) related to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3, surveillance intervals from 18 to 24 months documents the following conclusion:

> "Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and

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LD.1 (cont'd)

valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Therefore, based on the above discussion, the impact of this change, if any, on system availability is minimal.

SR 3.8.1.9 verifies each required DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, the specified frequency is achieved. This SR verifies the proper operation of the governor and load control circuits.

SR 3.8.1.10 verifies each required 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 governor and load control circuits.

SR 3.8.1.11 verifies on an actual or simulated loss of offsite power signal: a) de-energization of emergency buses, b) load shedding from emergency buses for Division 1 and 2 only, and c) DG auto-starts from standby condition and 1) energizes permanently 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 Division 1 and 2 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 3.8.1.12 verifies on actual or simulated Emergency Core Cooling (ECCS) initiation signal each required 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) and operates for the specified minimum time. This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within

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LD.1 (cont'd) the specified time from the design basis actuation signal (LOCA signal) and operates for greater than the specified time period which provides sufficient time to demonstrate stability.

SR 3.8.1.13 verifies each required DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except: a) engine overspeed, and b) generator differential current. This SR is essentially a LOGIC SYSTEM FUNCTIONAL TEST since the normal operation of the DG has all automatic trips active, and the trips are only bypassed with a ECCS initiation signal.

SR 3.8.1.14 verifies each required DG operates greater than or equal to 24 hours: a) for 2 hours greater than the specified load, b) for the remaining hours of the test at the specified load. This Surveillance demonstrates that the DG meets Regulatory Guide 1.108 paragraph 2.a.(3), which requires that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours - 22 hours of which is at a load equivalent to the continuous rating of the DG, and 2 hours of which is at a load equivalent to 110% of the continuous duty rating of the DG.

SR 3.8.1.15 verifies each required DG starts and achieves: a) in the specified time the required voltage and frequency, 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 3.8.1.16 verifies each required 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, c) and returns to ready-to-load operation. This Surveillance ensures that the manual synchronization and load transfer from the DG to each 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 3.8.1.17 verifies with a required DG operating in test mode and connected to its bus: a) For Division 1 and 2 DGs, an actual or simulated ECCS initiation signal overrides the test mode by returning DG to ready-to-load operation; and b) for Division 3 DG, an actual or simulated DG overcurrent trip signal automatically disconnects the offsite power source while the DG continues to supply normal loads. This Surveillance demonstrates operation of the test mode

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LD.1 (cont'd) override. The test mode override ensures that the DG availability under accident conditions is not compromised as the result of testing. Interlocks to the LOCA sensing circuits cause the DG to automatically reset ready-to-load operation if an ECCS initiation signal is received during operation in the test mode.

SR 3.8.1.18 verifies the interval between each sequenced load block for Division 1 and 2 DGs only, 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 ECCS initiation signal: a) de-energization of emergency buses; b) load shedding from emergency buses for Division 1 and 2 only; 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) maintains steady state voltages specified, 4) maintains specified frequency, and 5) supplies permanently connected and auto-connected emergency loads for greater than specified time. 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 ECCS initiation 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.

Extending SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.14, 3.8.1.15, 3.8.1.16, 3.8.1.17, 3.8.1.18 and 3.8.1.19 surveillance intervals are acceptable for the following reasons: 1) During the operating cycle, the diesel generators are subjected to operational testing every 31 days and fast start testing every 184 days. This testing provides confidence of diesel generator operability and the capability to perform its intended function. The testing will also provide prompt identification of any substantial DG degradation or failure. 2) DGs are not operated except for the performance of the monthly demonstration of operability so there is minimal risk of wear related degradation. 3) DG attributes subject to degradation due to aging, such as fuel oil quality, are subject to its requirements for replenishment and testing.

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LD.1 (cont'd) The portions of the test not directly associated with the functioning of the Diesel Generator and breaker movement are equivalent to a LOGIC SYSTEM FUNCTIONAL TEST. For these logic tests, the NRC Safety Evaluation Report (dated August 2, 1993) related to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3, surveillance intervals from 18 to 24 months documents the following conclusion:

> "Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Therefore, based on the above discussion, the impact of this change, if any, on system availability is minimal.

Reviews of historical maintenance and surveillance data 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. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

"Specific"

L.1 In the event of multiple concurrent AC Source inoperabilities (i.e., one Division 1 or 2 DG and one offsite circuit), the existing Actions limit restoration time to 72 hours from the time of initial loss of the first AC Source (CTS 3.8.1.1 Action c). 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 ($\leq$ 72 hours). Given the minimal risk of an event during the repair of the

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L.1 (cont'd) subsequent inoperability, the likelihood of a satisfactory return to OPERABLE, 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. The ITS format presents this as an additional Completion Time of "10 days from discovery of failure to meet LCO" in ITS 3.8.1 Required Actions A.3, B.4, and C.4.

In addition, in the event of multiple DG inoperabilities (Division 1 and 2) or multiple offsite circuit inoperabilities, the existing Actions limit restoration time to 72 hours from the time of initial loss (CTS 3.8.1.1 Actions e and f). The consequences and occurrences of the multiple inoperabilities is similar to that described in the first paragraph. Therefore, a separate time period is allowed for the subsequent repair. This time period is described in ITS 1.3, and essentially allows extension of the initial restoration time by 24 hours, not to exceed the actual time if the subsequent inoperability were tracked from its time of loss. The ITS 1.3 limits the subsequent inoperability extension to one use, i.e., the second inoperability can be extended, but not a third or subsequent inoperability. This is fully described in ITS 1.3.

L.2 Part B of the * footnote to CTS 3.8.1.1 Action b requires CTS 4.8.1.1.2.a.4, a DG start test, to be performed within 48 hours prior to performing pre-planned maintenance or testing on the Division 1 DG. However, under normal conditions when a DG is inoperable, CTS 3.8.1.1 Action b does not require this test if a DG is inoperable due to pre-planned maintenance or testing. The ITS will not include this extra requirement when the Division 1 DG is placed in an inoperable status for pre-planned maintenance or testing. Generic Letter 93-05 allowed an alternative to starting the remaining DGs to determine their OPERABILITY status when a DG is found to be inoperable. The alternative is to determine that a common mode failure does not exist. When the Division 1 DG is removed from service to perform pre-planned maintenance and testing, then the reason for its inoperability is known and does not affect the remaining OPERABLE DGs. This change also minimizes DG starts. Minimizing DG starts is recommended to avoid unnecessary diesel wear, thereby enhancing overall DG reliability. In addition, a single event could compromise the required offsite circuits and the remaining required DGs.

Additionally, the requirement that precludes maintenance on offsite circuits or diesel generators while the 0 diesel generator (common diesel generator) is inoperable, as required by Part C of the * footnote to CTS 3.8.1.1 Action b, is

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L.2 (cont'd) deleted. The reason for the deletion of this requirement is the ACTIONS of ITS 3.8.1 are adequate to ensure appropriate compensatory measures are taken in the event another required AC electrical power source is inoperable. Also, the intent of ITS 3.0.2 (CTS 3.0.1), as stated in the ITS 3.0.2 Bases, is that equipment removed from service intentionally should not be made for operational convenience. Therefore, performance of maintenance on another AC electrical power source should only be performed concurrently with the common diesel generator inoperable if it was necessary to maintain immediate reliability of the AC Electrical Power System. In the event, another AC electrical power source becomes inoperable during planned maintenance on the common DG, CTS 3.0.3 would have to be entered since Part C of the * footnote to CTS 3.8.1.1 Action b is not met and no other actions are provided in CTS 3.8.1.1. Proposed ITS 3.8.1 ACTIONS will provide reasonable time to evaluate and repair, as necessary, any inoperable AC source that does not result in a severely degraded AC Electrical Power System, thereby avoiding an unnecessary plant transient.

L.3 CTS 3.8.1.1 Actions b, c, d, f, and g footnote * states "This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY. The provisions of Specification 3.0.2 are not applicable." This requirement (to verify the cause of the inoperable DG does not impact the other DG) is proposed to be deleted. The intent of this requirement, testing the other diesel generators, is related to the determination that no common cause failure exists, whether or not the originally discovered inoperable DG has already been restored. "Common cause" evaluations are required by the ComEd Nuclear Stations Corrective Action Program for all significant safety related deficiencies (as would be the case for inoperable DGs). The program requires "prompt" investigation of potential common mode failures and timely evaluations and corrective actions to preclude their recurrence. The Corrective Action Program (required by 10 CFR 50, Appendix B) provides assurance the necessary evaluations are completed in a timely manner without necessitating abnormal requirements within the ITS.

L.4 CTS 3.8.1.1 Actions c and f require a verification that the cause of a DG inoperability does not affect the remaining DGs. This is verified by an evaluation or test within 8 hours. ITS 3.8.1 Required Actions C.3.1 and C.3.2 will continue to require this verification, but will allow 24 hours to perform the verification. The proposed Completion Time is consistent with GL 84-15, which stated that the 24 hours was a reasonable time to perform the verification. This will allow more attention to be focused on restoring the inoperable DG, in lieu of testing the remaining OPERABLE DGs. This proposed time is also consistent

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L.4 (cont'd) with that provided in CTS 3.8.1.1 Actions b, d, and g, when one DG is inoperable. This extension is acceptable since the remaining DGs are routinely found to be OPERABLE during this verification. This change is also consistent with the time approved for WNP-2, which has a similar DG electrical distribution design (i.e., three divisionalized unit DGs), in their recent ITS amendment.

L.5 CTS 3.8.1.1 Actions do not address both Division 2 DGs inoperable, therefore, the plant would default to CTS 3.0.3. ITS LCO 3.8.1 ACTION F will allow the unit Division 2 DG and required opposite unit DG to be inoperable for 2 hours before entry into ITS LCO 3.8.1, ACTION G (MODE 3 within 12 hours and MODE 4 within 36 hours) is required. With both unit Division 2 DGs inoperable, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite Electrical Power System is the only source of AC power for the required ESF equipment at 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. Since any inadvertent unit generator trip could also lead to a loss of offsite AC power, 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. In the case where both unit Division 2 DGs are inoperable, the opposite unit's Division 2 subsystems (e.g., SGT subsystem) could be declared inoperable (proposed ITS 3.8.1 Applicability Note 2) and Condition F could be exited with only one required unit DG remaining inoperable. However, with the given unit Division 2 DG remaining inoperable and the opposite unit Division 2 subsystems declared inoperable, redundant required feature failures exist, according to proposed ITS 3.8.1 Required Action C.2. Although, this Required Action allows an additional 4 hours, the additional time period is considered acceptable since offsite power is still available to the given unit Division 2 loads thereby maintaining the related safety functions.

L.6 The requirement to perform CTS 4.8.1.1.1.b and 4.8.1.1.2.d during shutdown has been included in proposed SRs 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.14, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19. However, the proposed Surveillances include an allowance that portions or all of the Surveillance can be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Currently, credit is not allowed to be taken for performing one of these SRs if

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L.6 (cont'd) performed to demonstrate OPERABILITY after restoration of an offsite circuit or DG. This change will allow credit for the SR to be taken. In addition, the requirement to perform the hot restart test portion of CTS 4.8.1.1.2.d.8 during shutdown has not been included in ITS SR 3.8.1.15. The control of plant conditions appropriate to perform a Surveillance is an issue for procedures and scheduling. 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 plant conditions for the Surveillance. This detail of the Surveillances is a prerequisite for performance of the test and is not necessary for ensuring the requirements to demonstrate OPERABILITY of the DG or qualified offsite sources. 

L.7 CTS 4.8.1.1.2.a requires the normal monthly DG Surveillances to be performed on a STAGGERED TEST BASIS. Proposed SRs 3.8.1.2, 3.8.1.3, 3.8.1.4, 3.8.1.6, and 3.8.1.7 do not include the STAGGERED TEST BASIS requirement. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of reviews/evaluations have been performed which have demonstrated that staggered testing has negligible impact on component reliability. As a result, it has been 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 failure rates and component wearout, 6) results in reduced redundancy during testing, and 7) increases likelihood of human error by increasing testing intervals. Therefore, the DG staggered testing requirements have been deleted.

L.8 The Surveillance Frequency for CTS 4.8.1.1.2.a.3 (proposed SR 3.8.1.6), the fuel oil transfer pump test, has been changed from "31 days" to "92 days." The 92 day transfer pump test frequency is consistent with ASME Section XI requirements for similar pumps. Industry and plant operating experience has shown testing of pumps of this type on a quarterly basis to be adequate for maintaining OPERABILITY. Performing this test on a less frequent basis also reduces wear on the pumps.

L.9 The requirements of CTS 4.8.1.1.2.a.4, 4.8.1.1.2.d.5, and 4.8.1.1.2.e (proposed SR 3.8.1.7, SR 3.8.1.12, SR 3.8.1.20) have been changed to only require the minimum voltage and frequency limits to be met within the appropriate time limits. Currently, these CTS SRs require the establishment of a speed of 900 rpm +5%, -2% within ≤ 13 seconds and generator frequency

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L.9 (cont'd) within 60 + 3.0, -1.2 Hz within 13 seconds after the start signal. For these DGs, a speed of 900 rpm is equivalent to a frequency of 60 Hz. Thus, the acceptance criterion for the DG speed is equivalent to the acceptance criteria for the DG frequency of 60 Hz +3.0, -1.2 Hz. As stated above, the proposed SRs will require only the establishment of the minimum frequency (i.e., 58.8 Hz) and voltage within the given time frame. The accident analysis requires that the DGs be capable of being loaded within 13 seconds. This can be accomplished at 58.8 Hz. While the upper level requirement regarding the speed acceptance criterion is being eliminated, the requirement to establish a steady state voltage and frequency has been retained. The upper limit on the frequency will be 61.2 Hz, this is equivalent to a speed of 900 rpm +2%. 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. The proposed requirements will, therefore, require that the DG start and achieve in $\leq$ 13 seconds, voltage $\geq$ 4010 V and frequency $\geq$ 58.8 Hz; and steady state voltage $\geq$ 4010 V and $\leq$ 4310 V and frequency $\geq$ 58.8 Hz and $\leq$ 61.2 Hz. The tests in question are those that automatically start the DG but do not tie 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 tie within the proper time. Once the minimum voltage and frequency limits are met, the DG can tie to the bus. When a test is performed that does not result in tieing the DG to the bus, a voltage or frequency overshoot can occur since no loads are being tied (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. This condition however, 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 governor and voltage regulator performance as described in the Bases. This change is consistent with TSTF-163.

L.10 CTS 4.8.1.1.2.a.6 requires verification that each DG is aligned to provide standby power to the associated emergency buses. The requirements of ITS 3.8.1, which require the DGs to be OPERABLE, and the associated Surveillance Requirements for the DGs are adequate to ensure the DGs are maintained OPERABLE. In addition, the definition of OPERABILITY and procedural controls on DG standby alignment are sufficient to ensure the DG remains aligned to provide standby power. In general, this type of requirement is addressed by plant specific processes which continuously monitor plant

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L.10 (cont'd) conditions to ensure that changes in the status of plant equipment that require entry into ACTIONS (as a result of failure to maintain equipment OPERABLE) are identified in a timely manner. This verification is an implicit part of using Technical Specifications and determining the appropriate Conditions to enter and Actions to take in the event of inoperability of Technical Specification equipment. In addition, plant and equipment status is continuously monitored by control room personnel. The results of this monitoring process are documented in records/logs maintained by control room personnel, as required. The continuous monitoring process includes re-evaluating the status of compliance with Technical Specification requirements when Technical Specification equipment becomes inoperable using the control room records/logs as aids. Therefore, the explicit requirement to periodically verify that each DG is aligned to provide standby power to the associated emergency buses is considered to be unnecessary for ensuring compliance with the applicable Technical Specification OPERABILITY requirements and is to be removed from the Technical Specifications.

L.11 CTS 4.8.1.1.2.b requires checking for and removing accumulated water from the DG day tanks every 31 days and "after each operation of the diesel where the period of operation was greater than or equal to 1 hour." Proposed SR 3.8.1.5 only requires the check every 31 days; the frequency of "after each operation of the diesel where the period of operation was greater than or equal to 1 hour" has been deleted. Water condensation within the fuel oil 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 (and based on experience), no increased Frequency is necessary.

L.12 The phrase "actual or", in reference to the loss of offsite power signal or the ECCS actuation signal, as applicable, has been added to CTS 4.8.1.1.2.d.4, 4.8.1.1.2.d.5, 4.8.1.1.2.d.6, 4.8.1.1.2.d.7, and 4.8.1.1.2.d.11 (proposed SRs 3.8.1.11, 3.8.1.12, 3.8.1.19, 3.8.1.13, and 3.8.1.17, respectively) for verifying the proper response of the DG. This allows satisfactory loss of offsite power or ECCS actuations for other than Surveillance purposes to be used to fulfill the Surveillance Requirement. OPERABILITY is adequately demonstrated in either case since the DG cannot discriminate between "actual" or "simulated" signals.

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L.13 The manner in which the DG is started for CTS 4.8.1.1.2.d.8 (i.e., that the DG must be within the proper voltage and frequency within a certain time limit after the start signal) has not been included in proposed SR 3.8.1.14. While this test can be performed only after a fast start, the manner in which the DG is started does not affect the test. In addition, maintaining voltage and frequency (as required by CTS 4.8.1.1.2.d.8) is routine for this test to ensure the loads are maintained within the necessary limits, and does not need to be specified. Other Surveillance Requirements being maintained in the ITS (e.g., CTS 4.8.1.1.2.a.4, proposed SR 3.8.1.7) continue to require verifying the DG start time and voltage and frequency limits. If these limits are found not to be met during the performance of proposed SR 3.8.1.14, then the DG would be declared inoperable. As a result, these requirements are not necessary to be included in the Technical Specifications to ensure the diesel generators are maintained OPERABLE.

L.14 CTS 4.8.1.1.2.d.13, which verifies the DG lockout features prevent DG operation only when required, is proposed to be deleted. If a DG lockout feature prevents the DG from operating during an accident, this will still be identified during the LOCA, LOOP, and LOCA/LOOP DG Surveillances (proposed SRs 3.8.1.11, 3.8.1.12, and 3.8.1.19), which are currently performed at the same periodicity as this Surveillance. It will also be identified during the normal 31 day test, proposed SR 3.8.1.2. Failure of a lockout feature to properly lockout a DG is not a concern as it relates to meeting accident analysis assumptions, since the DG would already be assumed not to be functioning (the lockout features are used to prevent the DG from starting on an accident signal). Therefore, removal of this Surveillance from the Technical Specifications will have no effect on DG OPERABILITY.

L.15 Explicit post maintenance Surveillance Requirements as required by CTS 4.8.1.1.2.e (i.e., after any modifications which could affect DG interdependence) have been deleted. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, or replacement of a component, post maintenance testing is required to demonstrate OPERABILITY of the system or component. After restoration of a component that caused a required SR to be failed, ITS SR 3.0.1 requires the appropriate SRs (in this case, SR 3.8.1.20) to be performed to demonstrate the OPERABILITY of the affected components. Therefore, explicit post maintenance Surveillance Requirements are not repaired and have been deleted from the Technical Specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.16 The requirement to perform CTS 4.8.1.1.2.e during shutdown has not been included in proposed SR 3.8.1.20. The proposed Surveillance (to simultaneously start all three DGs) does not include the restriction on plant 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; the Surveillance only requires a start of the DGs. The control of plant conditions appropriate to perform the Surveillance 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 plant conditions for the Surveillance.

L.17 CTS 3.0.5 provides an allowance that required feature(s) supported by an inoperable AC source may be considered OPERABLE provided the redundant required feature(s) are OPERABLE. However, if these requirements are not satisfied, CTS 3.0.5 requires the unit to be placed in Startup within 6 hours, Hot Shutdown within following 6 hours, and in Cold Shutdown within the subsequent 24 hours. In lieu of a shutdown, ITS LCO 3.8.1 ACTIONS A, B, C, and D include requirements to declare required feature(s) supported by the inoperable AC source inoperable when the redundant required feature(s) are inoperable. ITS 3.8.1 ACTION A (one required offsite circuit inoperable) allows 24 hours before declaring the equipment supported by the inoperable AC source inoperable, ITS 3.8.1 ACTIONS B and C (one required DG inoperable) allow 4 hours before the affected supported equipment must be declared inoperable, and ITS 3.8.1 ACTION D (two required offsite circuits inoperable) allows 12 hours before the affected supported equipment must be declared inoperable. 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 provided, in some cases, in the CTS system specifications. 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

TECHNICAL CHANGES - LESS RESTRICTIVE

L.17 (cont'd) 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. 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.

L.18 Not used. | A

L.19 If an offsite circuit is inoperable only due to its inability to provide power to the Division 3 electrical power distribution subsystem, CTS 3.8.1.1 Action a would require a unit shutdown if the offsite circuit is not restored to OPERABLE status within 72 hours. ITS 3.8.1 provides an Applicability Note which, in the event the HPCS System is inoperable, allows the associated offsite circuits to not be required to be OPERABLE for Division 3. (ITS 3.8.1 would still require these offsite circuits to be OPERABLE for the remaining required Divisions.) Thus, at the end of the current 72 hour restoration time, the ITS Note would allow the HPCS System to be declared inoperable, and the ACTIONS in ITS 3.5.1 would be taken to restore the HPCS System to OPERABLE status. The ACTIONS of ITS 3.5.1 allow 14 days to restore the HPCS System to OPERABLE status. The overall effect of this change is to allow an additional 14 days to restore the circuit to OPERABLE status, since this is the only way to restore the HPCS System to OPERABLE status under this condition. The 14 day allowance is consistent with the allowance already provided in CTS 3.8.1.1 Action d for when the HPCS DG is inoperable. The two conditions (i.e., loss of the offsite circuit and loss of the DG) are essentially the same; the HPCS System can still perform its intended function, however, it only has one source of power. In addition, CTS 3.5.1 currently allows the HPCS System to be inoperable for up to 14 days for other reasons that will preclude it from performing its intended function. Since the NRC has previously approved the 14 day allowance for when the HPCS DG is inoperable, as well as when the HPCS System is inoperable for other reasons, this change is considered acceptable. In addition, this 14 day time for when the HPCS System is inoperable is also consistent with the memorandum from R. L. Baer (NRC) to V. Stello Jr. (NRC), "Recommended Interim Revisions to LCO's for ECCS Components," December 1, 1975.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.20 CTS 4.8.1.1.2.d.12 requires verification that the interval between each load block is within $\pm$ 10% of its design interval for Division 1 and 2 DGs. The SR is proposed to be changed in ITS SR 3.8.1.18 to delete the upper 10% limit, such that the interval between each load block is only required to be $\geq$ 90% of the design load interval.

As stated in the ISTS Bases, the purposes of the 10% load sequence time interval tolerance are to ensure 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. The first purpose is met solely by applying a lower limit. If the interval between two load blocks is greater than 110% of the design interval, the capability of the DG to perform its function is not necessarily impacted. For the first load interval, sufficient time after energizing the first load block to allow the DG to restore frequency and voltage prior to energizing the second load block is still provided, since the minimum time needed is the design interval minus 10%; allowing more time than the design interval plus 10% does not negatively affect the ability of the DG to perform its intended function, with respect to the first load interval. In addition, for the LaSalle design, there is only two load blocks. Therefore, as long as the interval between the two load blocks is $\geq$ 90% of the design interval, the capability of the DG to perform its function is not impacted. (C)

The second purpose described in the Bases for the ISTS SR is not related to the DG; it relates to the ability of the individual loads to perform their assumed functions. Thus, if a time delay was too long, while the individual load may be inoperable, the DG is not inoperable; the DG can still perform its intended function. Thus, the upper limit should not be considered as an operability requirement for the DG. If an individual load timer is too long, only the associated load should be considered inoperable. In addition, many of the load timers (the ones that affect the ECCS pumps) are required by ISTS 3.3.5.1, ECCS Instrumentation; thus the upper limits for these timers will be maintained in the ISTS.

RELOCATED SPECIFICATIONS

None

A.1

ITS 3.8.2

ELECTRICAL POWER SYSTEMS

A.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.8.2 3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE: M.1

LCO 3.8.2.a a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and M.2

LCO 3.8.2.b, LCO 3.8.2.c, LCO 3.8.2.d b. Diesel generator 0 or 1A, and diesel generator 1B when the HPCS system is required to be OPERABLE, and diesel generator 2A when the offsite power source for standby gas treatment system subsystem B or control room and auxiliary electric equipment room emergency filtration system train B is inoperable and either or both systems are required to be OPERABLE, with each diesel generator having:

SR 3.8.2.1 1. For diesel generator 0, 1A and 2A:

a) A separate day fuel tank containing a minimum of 250 gallons of fuel. A.2

b) A separate fuel storage system containing a minimum of 31,000 gallons of fuel. A.3 moved to ITS 3.8.3

SR 3.8.2.1 2. For diesel generator 1B, a separate fuel storage tank/day tank containing a minimum of 29,750 gallons of fuel. A.2 M.3

550 gallons of fuel

A.2 3. A fuel transfer pump. LA.1

A.4

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and *.

ACTION: Add proposed ACTION A Note. Add proposed Required Action A.1 L.3 C

ACTIONS A AND B a. With all offsite circuits inoperable and/or with diesel generators 0 or 1A inoperable, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel. Add Required Actions A.2.4 and B.4 M.4

ACTION C b. With diesel generator 1B inoperable, restore the inoperable diesel generator 1B to OPERABLE status within 72 hours or declare the HPCS system inoperable and take the ACTION required by Specification 3.5.2 and 3.5.3. A.5

Applicability * When handling irradiated fuel in the secondary containment.

A.1

ELECTRICAL POWER SYSTEMS

A.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

M.1

LCO 3.8.2 **3.8.1.2** As a minimum, the following A.C. electrical power sources shall be OPERABLE: M.2

LCO 3.8.2.a a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

LCO 3.8.2.b b. Diesel generator 0 or 2A, and diesel generator 2B when the HPCS system is required to be OPERABLE, and diesel generator 1A when the offsite power source for standby gas treatment system subsystem A or control room and auxiliary electric equipment room emergency filtration system train A is inoperable and either or both systems are required to be OPERABLE, with each diesel generator having:

LCO 3.8.2.c

LCO 3.8.2.d

SR 3.8.2.1 1. For diesel generator 0, 1A, and 2A:

a) A separate day fuel tank containing a minimum of 250 gallons of fuel. A.2

b) A separate fuel storage system containing a minimum of 31,000 gallons of fuel. A.3 moved to ITS 3.8.3

SR 3.8.2.1 2. For diesel generator 2B, a separate fuel storage tank/day tank containing a minimum of 29,750 gallons of fuel A.2

550 gallons of fuel M.3

A.2 3. A fuel transfer pump. LA.1

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and *. A.4 L.3 C

ACTION: Add proposed ACTION A Note Add proposed Required Action A.1

ACTIONS A AND B a. With all offsite circuits inoperable and/or with diesel generators 0 or 2A inoperable, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel. M.4 Add Required Actions A.2.4 and B.4

ACTION C b. With diesel generator 2B inoperable, restore the inoperable diesel generator 2B to OPERABLE status within 72 hours or declare the HPCS system inoperable and take the ACTION required by Specifications 3.5.2 and 3.5.3. A.5

ACTION D c. With diesel generator 1A inoperable, declare standby gas treatment system subsystem A and control room and auxiliary electric equipment room emergency filtration system train A inoperable and take the ACTION required by Specifications 3.6.5.3 and 3.7.2. A.5

ACTIONS NOTE d. The provisions of Specification 3.0.3 are not applicable.

Applicability *When handling irradiated fuel in the secondary containment.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The CTS 3.8.1.2.b.3 detail relating to system design and OPERABILITY (i.e., that each DG has a fuel oil transfer pump) is proposed to be relocated to the Bases. The details for system OPERABILITY are not necessary in the LCO. The definition of OPERABILITY suffices. The design details are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the DGs since OPERABILITY requirements are adequately addressed in ITS 3.8.2, "AC Sources—Shutdown." As such, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

"Specific"

L.1 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 diesel generator 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 are excepted from performance requirements. Other Surveillances that would render the DG inoperable, require de-energizing a required 4.16 kV emergency bus, or require disconnecting a required offsite circuit. 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 in the form of a Note to proposed SR 3.8.2.1 and excludes proposed SR 3.8.1.3 (DG 1 hour load test), SR 3.8.1.9 (DG single largest load reject test), SR 3.8.1.10 (DG full load reject test), SR 3.8.1.11 (loss of power test), SR 3.8.1.13 (bypass of automatic trips), SR 3.8.1.14 (DG 24 hour run), SR 3.8.1.1.15 (DG hot start test), SR 3.8.1.16 (DG synchronization test), SR 3.8.1.18 (DG load block test), and SR 3.8.1.19 (ECCS simulation test).

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 CTS 4.8.1.2, which provides the Surveillance Requirements for the AC Sources while in Modes 4 and 5 and during handling of irradiated fuel in the secondary containment, requires the Surveillances of CTS 4.8.1.1.2 to be performed. Two of the Surveillances of CTS 4.8.1.1.2 are the DG start on an ECCS initiation signal (CTS 4.8.1.1.2.d.5) and the DG start and load on an ECCS initiation signal concurrent with a loss of offsite power signal (CTS 4.8.1.1.2.d.6). Proposed Note 2 to SR 3.8.2.1 will exempt these two Surveillances (proposed SRs 3.8.1.12 and 3.8.1.19) when the associated ECCS subsystem(s) are not required to be Operable. The CTS and ITS do not require the ECCS subsystem(s) to be Operable in Mode 5 when the spent fuel storage pool gates are removed and water level is $\geq$ 22 ft over the top of the reactor pressure vessel flange. The CTS and ITS also do not require the ECCS subsystem(s) to be Operable when defueled. 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 ECCS initiation signal. In addition, the ECCS initiation 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 (proposed SR 3.8.1.11). 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 ECCS actuation signal (either by itself or concurrent with a loss of offsite power signal).

L.3 An alternative is proposed in the LaSalle 1 and 2 ITS to suspending the movement of irradiated fuel assemblies, CORE ALTERATIONS, or OPDRVS, if being conducted, when less than the required AC sources are OPERABLE. The alternative, ITS 3.8.2 Required Action A.1, is to declare the affected required feature(s) inoperable, and continue to conduct operations (e.g., OPDRVs), if the affected required feature(s) ACTIONS allow. Conservative actions can be assured if the affected required feature(s) without the necessary AC source is declared inoperable and the associated ACTIONS of the individual feature(s) taken. These conservative actions are currently approved (or will be approved by the ITS amendment) by the NRC. Therefore, this change is considered acceptable.

RELOCATED SPECIFICATIONS

None

A.1

ITS 3.8.3

SURVEILLANCE REQUIREMENTS

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

SR 3.8.3.3 7. Verifying the pressure in required diesel generator air start receivers to be greater than or equal to 200 psig. M.1 C add proposed SR 3.8.3.4

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tanks. add proposed SR 3.8.3.2 A.4

c. By sampling and analyzing stored and new fuel oil in accordance with the following:

1. At least once per 92 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained and tested in accordance with the applicable ASTM Standards has:

a) A water and sediment content within applicable ASTM limits.

b) A kinematic viscosity at 40°C within applicable ASTM limits.

moved to ITS Section 5.5 A.4

2. At least every 31 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained in accordance with the applicable ASTM Standard has a total particulate contamination of less than 10 mg/l when tested in accordance with the applicable ASTM Standard.

d. At least once per 18 months during shutdown by:

1. (Not used).

2. Verifying the diesel generator capability* to reject a load of greater than or equal to 1190 kW for diesel generator 0, greater than or equal to 638 kW for diesel generators 1A and 2A, and greater than or equal to 2421 kW for diesel generator 1B while maintaining engine speed less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint or 15% above nominal, whichever is less.

3. Verifying the diesel generator capability* to reject a load of 2600 kW without tripping. The generator voltage shall not exceed 5000 volts during and following the load rejection.

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

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer.

(See ITS 3.8.1)

SURVEILLANCE REQUIREMENTS (Continued)

a) Generator underfrequency.
b) Low lube oil pressure.
c) High jacket cooling temperature.
d) Generator reverse power.
e) Generator overcurrent.
f) Generator loss of field.
g) Engine cranking lockout.

e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting diesel generators 0, 1A, and 1B simultaneously,* during shutdown, and verifying that all three diesel generators accelerate to 900 rpm +5, -2% in less than or equal to 13 seconds.

f. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite or equivalent solution, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND, of the ASME Code in accordance with ASME Code Section 11, Article IWD-5000.

LA.1 C

4.8.1.1.3 Reports - (Not used).

(See ITS 3.8.1)

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer.

A.1

ITS 3.8.3

SURVEILLANCE REQUIREMENTS

M.1

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

add proposed SR 3.8.3.4

C

SR 3.8.3.3 7. Verifying the pressure in required diesel generator air start receivers to be greater than or equal to 200 psig.

add proposed SR 3.8.3.2

A.4

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tanks.

c. By sampling and analyzing stored and new fuel oil in accordance with the following:

1. At least once per 92 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained and tested in accordance with the applicable ASTM Standards has:

a) A water and sediment content within applicable ASTM limits.

b) A kinematic viscosity at 40°C within applicable ASTM limits.

moved to ITS Section 5.5

A.4

2. At least every 31 days, and for new fuel oil prior to addition to the storage tanks, that a sample obtained in accordance with the applicable ASTM Standard has a total particulate contamination of less than 10 mg/l when tested in accordance with the applicable ASTM Standard.

d. At least once per 18 months during shutdown by:

1. (Not Used).

2. Verifying the diesel generator capability* to reject a load of greater than or equal to 1190 kW for diesel generator 0, greater than or equal to 638 kW for diesel generators 1A and 2A, and greater than or equal to 2421 kW for diesel generator 2B while maintaining engine speed less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint or 15% above nominal, whichever is less.

3. Verifying the diesel generator capability* to reject a load of 2600 kW without tripping. The generator voltage shall not exceed 5000 volts during and following the load rejection.

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

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer.

(See ITS 3.8.1)

a) Generator underfrequency.
b) Low lube oil pressure.
c) High jacket cooling temperature.
d) Generator reverse power.
e) Generator overcurrent.
f) Generator loss of field.
g) Engine cranking lockout.

e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting diesel generators 0, 2A, and 2B simultaneously*, during shutdown, and verifying that all three diesel generators accelerate to 900 rpm + 5, -2% in less than or equal to 13 seconds.

f. At least once per 10 years by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite or equivalent solution, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND, of the ASME Code in accordance with ASME Code Section XI, Article IWD-5000.

LA.1 △c

4.8.1.1.3 Reports - (Not Used).

(See ITS 3.8.1)

*All planned diesel generator starts performed for the purpose of meeting these surveillance requirements may be preceded by an engine prelube period, as recommended by the manufacturer.

DISCUSSION OF CHANGES
ITS: 3.8.3 - DIESEL FUEL OIL and STARTING AIR

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The fuel oil and starting air requirements of CTS 3.8.1.1 and 3.8.1.2 have been moved to a new ITS LCO 3.8.3. An LCO Statement has been provided requiring fuel oil storage and starting air. The Applicability of this new LCO is "when associated DG is required to be OPERABLE." This covers the current MODES 1, 2, 3, 4, and 5 and fuel handling requirements of CTS 3.8.1.1 and 3.8.1.2. These changes are considered administrative in nature. In addition, technical changes have been made, as discussed in the Discussion of Changes below.

A.3 The details relating to the required storage tank levels in CTS 3.8.1.1.b.1.b), CTS 3.8.1.1.b.2, CTS 3.8.1.2.b.1.b), and CTS 3.8.1.2.b.2 have been moved to a Surveillance Requirement (proposed SR 3.8.3.1). No technical changes are being made; therefore, this change is considered administrative in nature.

A.4 The technical content of CTS 4.8.1.1.2.c, which provides the DG fuel oil sampling requirements, is being moved to Specification 5.5.10 of the ITS in accordance with the format of the BWR ISTS, NUREG-1434, Rev. 1. Any technical changes will be addressed in the Discussion of Changes for ITS Section 5.5. A Surveillance Requirement is added (proposed SR 3.8.3.2) to clarity that the tests of the Diesel Fuel Oil Testing Program must also be completed and passed for determining OPERABILITY of the DGs. Since this is a presentation preference that maintains current requirements, this change is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A new Surveillance has been added (proposed SR 3.8.3.4) to check for and remove accumulated water from each required fuel oil storage tank. This proposed Surveillance is similar to CTS 4.8.1.1.2.b for the day tanks except it will be performed once every 92 days. This proposed Frequency is consistent with Regulatory Guide 1.137 and for those established at Quad Cities and Dresden. This new Surveillance will help prevent microbiological fouling. This is an additional restriction on plant operation. 

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The 10 year Surveillances of CTS 4.8.1.1.2.f to drain, remove sediment, and clean each fuel oil tank, and to perform a pressure test on the DG fuel oil system piping are proposed to be relocated to the TRM. These Surveillances are preventive maintenance type requirements. Sediment in the tank, or failure to perform these Surveillances, do not necessarily result in an inoperable storage tank. Performance of proposed SR 3.8.3.2 (fuel oil testing) and the limits of the Diesel Fuel Oil Testing Program help ensure tank sediment is minimized. Performance of proposed SR 3.8.3.1 (fuel oil volume verification) once per 31 days ensures that any degradation of the tank wall surface that results in a fuel oil volume reduction is detected and corrected in a timely manner. The pressure test of the fuel oil system is already covered by ASME Code Section XI Article IWD-5000. This requirement is currently implemented in the LaSalle 1 and 2 procedures. Therefore, the relocated requirement is not required to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. 

"Specific"

L.1 The ITS LCO 3.8.3, "Diesel Fuel Oil and Starting Air," reformats some of the existing CTS requirements by providing a separate LCO with requirements for each of the named parameters. The starting air requirements are currently presented as attributes of compliance with the DG LCO, via their presentation as Surveillances. These parameters, while supporting DG OPERABILITY, contain substantial margin in addition to the limits which would be absolutely necessary for DG OPERABILITY. Therefore, certain levels of degradation in these parameters are justified to extend the allowances for restoration (presented as ITS 3.8.3 ACTIONS A, B, C, D, E and ACTIONS Note). During the extended restoration periods for these parameters, the DG would still be capable of performing its intended function. ACTION A allows 48 hours to restore fuel oil level in the storage tanks prior to declaring the DG inoperable, provided fuel oil level is sufficient for 6 days supply. ACTION B allows 7 days to restore stored fuel oil total particulates to within limits prior to declaring the DG inoperable. ACTION C allows 30 days to restore other stored fuel oil properties to within limits. This is because these tests measure long term trending and stability. Even if the fuel oil exceeds these limits with other parameters met, the fuel oil

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 (cont'd) will remain able to support DG operation since when new fuel is added to a stored fuel oil tank it normally only replaces a small portion of the tank volume. ACTION D allows 48 hours to restore starting air pressure prior to declaring the DG inoperable, provided a 1 start capacity remains. ACTION E is provided to declare the DG inoperable if previous ACTIONS are not met. During the proposed extended periods for restoration of these parameters, the DG would still be capable of performing its intended function.

L.2 CTS 4.8.1.1.2.a requires the fuel oil storage tank level and the starting air pressure of each DG to be verified on a STAGGERED TEST BASIS. Proposed SR 3.8.3.1 and SR 3.8.3.3 do not include this requirement. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of reviews/evaluations have been performed which have demonstrated that staggered testing has negligible impact on component reliability. As a result, it has been determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) is not as significant as initially thought, and 4) has no impact on failure frequency. Therefore, the staggered testing requirements for diesel fuel oil level and starting air pressure verification have been deleted.

RELOCATED SPECIFICATIONS

None

A.1

ITS 3.8.4

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.4.7 Note 2
SR 3.8.4.7

d. At least once per ~~18~~ 24 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the 240 minute design cycle when the battery is subjected to a battery service test.

LD.1

LA.1

for the design duty cycle

C

SR 3.8.4.8 Note
SR 3.8.4.8

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturers rating when subjected to a performance discharge test. Once per 60 month interval this performance discharge test may be performed in lieu of the battery service test.

C

Note 1 to SR 3.8.4.7

modified

L.4

provided it envelops the service test

or modified performance discharge test

L.4

L.5

f. Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

SR 3.8.4.8

LA.3

with capacity <100% of manufacturer's rating

L.6

add proposed 3rd frequency

add proposed SR 3.8.4.9 and Notes to SRs

A.5

ELECTRICAL POWER SYSTEMS A.1

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.4.7 Note 2
SR 3.8.4.7

d. At least once per 24 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the 240 minute design cycle when the battery is subjected to a battery service test. LA.2

for the design duty cycle

LD.1

C

SR 3.8.4.8 Note
SR 3.8.4.8

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturers rating when subjected to a performance discharge test. Once per 60-month interval, this performance discharge test may be performed in lieu of the battery service test.

C

Note 1 to SR 3.8.4.7

modified L.4

provided it envelops the service test

or modified performance discharge test L.4

C

f. Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating. LA.3

SR 3.8.4.8

L.5

with capacity < 100% of manufacturer's rating

add proposed 3rd frequency L.6

add proposed SR 3.8.4.9 and Notes to SRs

A.5

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 The requirement of CTS 4.8.2.3.2.b to verify, within 7 days after a battery discharge or overcharge, that there is no visible corrosion at either terminals or connectors, or that connection resistance is $< 150 X10^{-6}$ohm has been removed. This is consistent with the nature of the condition being verified, i.e., that the battery resistance has not degraded significantly, since corrosion rates and connection resistance are not immediately and significantly affected by a severe discharge or overcharge condition.

L.2 CTS 4.8.2.3.2.c.2 and 4.7.3.d.3.b) require the cell-to-cell and terminal connections to be "clean, tight." The confirmation that the connection is "tight" is typically performed by application of a torque, which results in unnecessary stress being applied to the bolted connection. When a battery cell is installed or replaced, plant maintenance procedures require the connections to be torqued within prescribed limits as specified by the manufacturer. After being torqued, the connections remain tight and rarely need to be retorqued. This change is acceptable since, the use of connection resistance readings obtained by either digital low-resistance ohmmeters, or measurement of millivolt drop during capacity testing, to determine that connections are not loose is consistent with the guidelines in IEEE-450 Section 4.4.1, Corrective Actions. Therefore, if the connection satisfies the resistance requirements of proposed SR 3.8.4.5 (performed at the same Frequency), it can be assumed to be sufficiently "tight." As a result, it is not necessary to verify the connections are "tight." The "clean" requirement has been deleted since it is redundant to the "free of corrosion" requirement. In addition, the requirement to verify that connections are "clean" and "tight" is only applicable to nickel cadmium batteries. The DC electrical power subsystem batteries are lead calcium batteries. | (B)

L.3 Not used. | (C)

L.4 CTS 4.8.2.3.2.e allows a performance discharge test to substitute for the service test (required by CTS 4.8.2.3.2.d) once every 60 months. Note 1 to proposed SR 3.8.4.7 will only allow a modified performance discharge test to be substituted for the service test. In addition, the modified performance discharge test will be allowed to substitute for the service test at any time, instead of just one every 60 months. The modified performance discharge test consists of an 4 hour duty cycle with two rates: the 1 minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance discharge test. (The test can consist of a single rate if the test | (C)

L.4 (cont'd) rate employed for the performance discharge test exceeds the 1 minute rate.) The service test consists of a 4 hour duty cycle with two or three rates, depending upon the battery being tested: the 1 minute rate for the largest current load of the duty cycle, the rate based on the steady state loads of the duty cycle (1 minute through 239 minutes), and a final 1 minute rate (if applicable) based on the cycling loads of the duty cycle. For LaSalle 1 and 2, the second test rate to be employed for the modified performance discharge test is greater than both the steady state and the cycling loads (1 minute through 240 minutes) of the service test. Thus, the modified performance discharge test is a more severe test of the battery capacity. To ensure the modified performance discharge test will only be substituted as long as it remains a more severe test of the battery, the Note also states that the substitution is only allowed as long as the modified performance discharge test completely envelops the service test.

This proposed change will permit LaSalle 1 and 2 to perform the modified performance discharge test every refueling outage in lieu of the service test. Performing the modified performance discharge test every refueling outage instead of the current 60 month requirement will allow LaSalle 1 and 2 to better trend the battery capacity with more data points (over a 20 year battery service life, 10 trend points if the test is performed every 24 months (the proposed refueling outage interval) versus only four trend points if performed every 60 months). At the same time, the service use of the battery is continuing to be verified every cycle. This will also allow LaSalle 1 and 2 to more accurately identify when a battery is approaching degradation and allow for corrective action in a more timely manner. This will enhance the battery performance. The additional deep cycles that will result from performing the modified performance discharge test more frequently will not significantly affect the batteries. Each battery is designed for 30 deep cycles; performing a modified performance discharge test every 24 months will only increase the number of the deep cycles resulting from testing from 4 to 10. Thus, there are still 20 deep cycles remaining for any plant required DC challenges. However, if an excess number of challenges are used, the battery can always be replaced at an earlier date (i.e., before the nominal 20 year service life expires).

In addition, the basis for the current requirement to perform the service test is IEEE-450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations." This proposed change is supported by the latest version of IEEE-450 (1995). Section 5.4 of this standard states "The modified performance discharge test can be used in lieu of a service test at any time."

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.5 An allowance to perform a modified performance discharge test in lieu of a performance discharge test has been added to CTS 4.8.2.3.2.e and f (proposed SR 3.8.4.8). The modified performance discharge test is a simulated duty cycle normally consisting of just two rates: the 1 minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance discharge test. To ensure the modified performance discharge test completely envelopes the service test duty cycle, additional loads and durations of the duty cycle may be added to the modified performance discharge test prior to going to the constant current rate. Since the ampere-hours removed by a rated 1 minute discharge represent a very small portion of the battery capacity, the test rate can be changed to that for the performance discharge test without compromising the results of the performance discharge test.

L.6 CTS 4.8.2.3.2.f requires an annual battery performance discharge test when the battery has reached 85% of its service life. A battery can be at 85% or greater of expected life, and still be within the required capacity to meet OPERABILITY requirements. In this event, a Frequency less restrictive than the annual Frequency is justified. Proposed SR 3.8.4.8 will now be required to be performed every 24 months when a battery has reached 85% of expected life with battery capacity $\geq$ 100% of manufacturer's rating. This new Frequency is also consistent with the BWR/6 ISTS, NUREG-1434, Rev. 1.

L.7 CTS 4.8.2.3.2.c.4 requires performance of a battery charger capacity test to verify the charger will supply a load equal to the manufacturer's rating for a period of 8 hours. ITS SR 3.8.4.6 reduces the test duration to 4 hours. A four hour test duration is sufficient for the battery charger to reach its thermal equilibrium (heat up time is usually less than one hour) and demonstrate its required capability. This test duration is also consistent with the test duration previously approved for Dresden and Quad Cities Nuclear Power Stations.

RELOCATED SPECIFICATIONS

None

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

A.1

ITS 3.8.5

LIMITING CONDITION FOR OPERATION

<General Description> A.2

LCO 3.8.5

3.8.2.4 As a minimum, Division 1 or Division 2, and Division 3 when the HPCS system is required to be OPERABLE, and Unit 2 Division 2 when the standby gas treatment system and/or the control room and auxiliary electric equipment room emergency filtration system are required to be OPERABLE, of the D.C. distribution system shall be OPERABLE and energized with:

a. Division 1, consisting of;
   1. 125 volt battery 1A.
   2. 125 volt full capacity charger.
   3. 125 volt distribution panel 111Y.

b. Division 2, consisting of;
   1. 125 volt battery 1B.
   2. 125 volt full capacity charger.
   3. 125 volt distribution panel 112Y.

c. Division 3, consisting of;
   1. 125 volt battery 1C.
   2. 125 volt full capacity charger.
   3. 125 volt distribution panel 113.

d. Unit 2 Division 2, consisting of;
   1. 125 volt battery 2B.
   2. 125 volt full capacity charger.
   3. 125 volt distribution panel 212Y.

LA.1

See ITS 3.8.8

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and *.

ACTION:

add proposed Required Action B.1

L.3

a. With both Division 1 distribution panel 111Y and Division 2 distribution panel 112Y of the above required D.C. distribution system inoperable or not energized, suspend CORE ALTERATIONS, handling of irradiated fuel cask in the secondary containment and operations with a potential for draining the reactor vessel.

ACTION B

See ITS 3.8.8

b. With Division 3 distribution panel 113 of the above required D.C. distribution system inoperable or not energized, declare the HPCS system inoperable and take the ACTION required by Specifications 3.5.2 and 3.5.3.

ACTION B

A.3

add proposed Required Actions B.2.1 and B.2.2

M.3

add proposed Required Action B.2.4

M.2

*When handling irradiated fuel in the secondary containment.

Applicability

A.1

ITS 3.8.5

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

Verify within 1 hour — L.2

Add proposed Condition A Note — M.4

c. With one division battery and/or battery charger inoperable, operation may continue provided the Unit tie breakers for the affected division are OPERABLE and aligned to supply power to the affected distribution panel from the associated OPERABLE Unit 2 125 volt DC distribution panel; restore the inoperable battery and/or charger to OPERABLE status within 72 hours or declare the division distribution panel inoperable.

ACTION A — A.4 M.5 A

ACTION B

Add proposed Required Actions B.2.1, B.2.2, and B.2.3

See ITS 3.8.8.

d. With Unit 2 Division 2 of the above required D.C. distribution system inoperable or not energized, declare the standby gas treatment system subsystem B and the control room and auxiliary electric equipment room emergency filtration system train B inoperable and take the ACTION required by Specifications 3.6.5.3 and 3.7.2.

ACTION B — A.3

Note to Actions

e. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 At least the above required D.C. distribution system electrical division(s) shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and voltage on the panel(s) with an overall voltage of greater than or equal to 125 volts.

See ITS 3.8.2

SR 3.8.5.1

add proposed Note — L.1

4.8.2.4.2 At least the above required battery and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ITS 3.8.5

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

A.1

LIMITING CONDITION FOR OPERATION <General Description> A.2

LCO 3.8.5

3.8.2.4 As a minimum, Division 1 or Division 2, and Division 3 when the HPCS system is required to be OPERABLE, and Unit 1 Division 2 when the standby gas treatment system and/or the control room and auxiliary electric equipment room emergency filtration system are required to be OPERABLE, of the D.C. distribution system shall be OPERABLE and energized with:

C

a. Division 1, consisting of;
   1. 125-volt battery 2A.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel 211Y.

b. Division 2, consisting of;
   1. 125-volt battery 2B.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel 212Y.

LA.1

c. Division 3, consisting of;
   1. 125-volt battery 2C.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel 213.

See ITS 3.8.8

d. Unit 1 Division 2, consisting of;
   1. 125-volt battery 1B.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel 112Y.

LA.1

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and *.

ACTION:

add proposed required Action B.1 — L.3

C

ACTION B

a. With both Division 1 distribution panel 211Y and Division 2 distribution panel 212Y of the above required D.C. distribution system inoperable or not energized, suspend CORE ALTERATIONS, handling of irradiated fuel cask in the secondary containment and operations with a potential for draining the reactor vessel.

See ITS 3.8.8

ACTION B

b. With Division 3 distribution panel 213 of the above required D.C. distribution system inoperable or not energized, declare the HPCS system inoperable and take the ACTION required by Specifications 3.5.2 and 3.5.3. — A.3

add proposed Required Actions B.2.1 and B.2.2 — M.3

add proposed Required Action B.2.4 — M.2

*When handling irradiated fuel in the secondary containment.

APPLICABILITY

A.1

ITS 3.8.5

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

Verify within 1 hour — L.2

Add proposed Condition A Note — M.4

e. With one division battery and/or battery charger inoperable, operation may continue provided the Unit tie breakers for the affected division are OPERABLE and aligned to supply power to the affected distribution panel from the associated OPERABLE Unit 1 125-volt D.C. distribution panel; restore the inoperable battery and/or charger to OPERABLE status within 72 hours or declare the division distribution panel inoperable.

ACTION A

ACTION B

A.4 M.5 C

Add proposed Required Actions B.2.1, B.2.2, and B.2.3

See ITS 3.8.8

d. With Unit 1 Division 2 of the above required D.C. distribution system inoperable or not energized, declare the standby gas treatment system subsystem A and the control room and auxiliary electric equipment room emergency filtration system train A inoperable and take the ACTION required by Specifications 3.6.5.3 and 3.7.2.

ACTION B

A.3

Note to Action B

e. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 At least the above required D.C. distribution system electrical division(s) shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and voltage on the panel(s) with an overall voltage of greater than or equal to 125 volts.

See ITS 3.8.8

L.1

Add Proposed Note

SR 3.8.5.1

4.8.2.4.2 At least the above required battery and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

DISCUSSION OF CHANGES
ITS: 3.8.5 - DC SOURCES—SHUTDOWN

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The battery hardware components (battery and charger) of CTS 3.8.2.4 remain in the DC Sources LCO (ITS 3.8.5). Therefore, a new LCO statement has been provided reflecting this. The ITS presents the DC distribution in a separate LCO (ITS 3.8.8) and presents the battery cell parameters are presented in a separate LCO (ITS 3.8.6).

A.3 CTS 3.8.2.4 Action b requires the HPCS System to be declared inoperable and to take the ACTION required by Specifications 3.5.2 and 3.5.3 when the Division 3 DC electrical power source is inoperable. CTS 3.8.2.4 Action d requires the standby gas treatment subsystem and the control room and auxiliary electric equipment room emergency filtration subsystem to be declared inoperable and take the Action required by Specifications 3.6.5.3 and 3.7.2 in the event the opposite unit's Division 2 DC electrical power subsystem is inoperable. The format of the ITS does not include providing "cross references." ITS 3.5.2, 3.6.4.3, 3.7.4, and 3.7.5 adequately prescribe the Required Actions for an inoperable HPCS System, SGT subsystem, control room area filtration subsystem, or control room area A/C subsystem, respectively, without such references. Therefore the existing references in CTS 3.8.2.4 Action b to "take the ACTION required by Specifications 3.5.2 and 3.5.3" and in CTS 3.8.2.4 Action d to "take the ACTION required by Specification 3.6.5.3 and 3.7.2" serve no functional purpose, and their removal is purely an administrative difference in presentation.

A.4 In lieu of declaring the standby gas treatment subsystem and control room and auxiliary electric equipment room emergency filtration subsystem inoperable and taking the Actions of the appropriate LCO as required by CTS 3.8.2.4 Action d, three new Required Actions have been provided for when the opposite unit's Division 2 DC source is inoperable. ITS 3.8.5 Required Actions B.2.1, B.2.2, and B.2.3 require suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and OPDRVs. These Required Actions are the same as the Actions found in the individual System Specifications (CTS 3.6.5.3 and 3.7.2) when both standby gas treatment subsystems or both

ADMINISTRATIVE

A.4 (cont'd) control room auxiliary electric equipment room emergency filtration subsystems are found to be inoperable, therefore, the addition of these changes are considered administrative. | A

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 Not used. | C

M.2 In the event the necessary Division 1 or 2 DC source is not OPERABLE, plant conditions are conservatively restricted in CTS 3.8.2.4 Action a (ITS 3.8.5 Required Actions B.2.1, B.2.2, and B.2.3) by suspending CORE ALTERATIONS, irradiated fuel handling, and OPDRVs. In the event the necessary Division 3 DC source is not OPERABLE, plant conditions are conservatively restricted by suspending OPDRVs as required by CTS 3.8.2.4 Action b and CTS 3.5.2 Action a. However, continued operation without the necessary DC sources should not be considered acceptable. Therefore, ITS 3.8.5 Required Action B.2.4 is added to commence and continue attempts to restore the necessary DC sources. (Note that if actions are taken in accordance with ITS 3.8.5 Required Action B.1, sufficiently conservative measures are assured by the ACTIONS for the individual components declared inoperable without requiring the efforts to restore the inoperable source.) ITS 3.8.5 Required Action B.2.4 results in an action which does not allow continued operation in the existing plant condition. This has the effect of not allowing MODE changes per LCO 3.0.4. Therefore, this existing implicit requirement is explicitly addressed in the ITS 3.8.5 ACTIONS. | C

M.3 In lieu of declaring the HPCS System inoperable and taking the ACTIONS of the appropriate LCO as required by CTS 3.8.2.4 Action b, new Required Actions have been provided for when the Division 3 DC source is inoperable, consistent with the current actions for inoperable Division 1 and 2 DC Sources (CTS 3.8.2.4 Action a). ITS 3.8.5 Required Actions B.2.1, B.2.2, and B.2.3 require suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and OPDRVS. These Required Actions are more restrictive than currently required, since CTS 3.5.2 Action a only requires OPDRVs to be suspended (and it allows 4 hours to start this action), and ensure proper actions are taken to compensate for an inoperable HPCS System.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.4 A Note has been added to CTS 3.8.2.4 Action c (ITS 3.8.5 Condition A) to not allow the actions to be taken when the opposite unit is in MODE 1,2, or 3. With one DC electrical power source division (battery and/or battery charger inoperable) inoperable, CTS 3.8.2.4 Action c allows operation to continue for 72 hours as long as the associated 125V DC electrical power distribution subsystem is energized by the OPERABLE opposite unit DC electrical power subsystem. This allowance can not be used with the opposite unit in MODES 1, 2, and 3 since the associated subsystems are required the support the Operability of opposite unit safety equipment. The Division 2 DC electrical power source subsystem for each unit supports redundant safety equipment for both units and the batteries have insufficient capacity to support the required loads of both units if either unit is in MODES 1, 2, or 3. Therefore, this allowance is only permitted to be used when both units are in shutdown conditions (MODE 4, 5, or defueled) when divisional separation is not required.

M.5 In lieu of declaring the standby gas treatment subsystem and control room and auxiliary electric equipment room emergency filtration subsystem inoperable and taking the Actions of the appropriate LCO as required by CTS 3.8.2.4 Action d, three new Required Actions have been provided for when the opposite unit's Division 2 DC source is inoperable. ITS 3.8.5 Required Action B.2.1, B.2.2 and B.2.3 require immediate suspension of CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and OPDRVs. When one standby gas treatment subsystem or one control room and auxiliary electric equipment room emergency filtration subsystem is inoperable, CTS 3.6.5.3 and 3.7.2, respectively, allow 7 days to restore the associated subsystems to OPERABLE status prior to suspending CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and OPDRVs. Therefore, the addition of these Required Actions are considered more restrictive. 

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The requirements for OPERABLE DC electrical power distribution subsystems are contained in ITS 3.8.8, "Distribution Systems—Shutdown." Thus, ITS LCO 3.8.5 has been written to require the Division 1 or 2, Division 3 (when Division 3 electrical power distribution subsystem is required by LCO 3.8.8) and the opposite unit Division 2 (when opposite unit Division 2 electrical power 

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) distribution subsystem is required by LCO 3.8.8) DC electrical power distribution subsystems to be OPERABLE, and the details relating to system OPERABILITY in CTS 3.8.2.4 (what constitutes a required DC electrical power source) are proposed to be relocated to the Bases. The actual battery identification numbers are proposed to be relocated to the UFSAR. The Bases will include an adequate description of the batteries to properly identify them. The details for system OPERABILITY are not necessary in the LCO. The definition of OPERABILITY suffices. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS. Changes to the UFSAR are controlled by the provisions of 10 CFR 50.59.

"Specific"

L.1 Three of the DC sources Surveillances required to be performed by CTS 4.8.2.4 (CTS 4.8.2.3.2.d, 4.8.2.3.2.e, and 4.8.2.3.2.f) involve tests that would cause the only required OPERABLE unit 125V battery 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 LaSalle 1 and 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, proposed SR 3.8.5.1 has a Note that excludes performance requirements of Surveillances that would require the required OPERABLE unit 125V battery(s) to be rendered inoperable. This allowance does not take exception to the requirement for the battery to be capable of performing the particular function - just to the requirement to demonstrate that capability while that source of power is being relied on to support meeting the LCO.

L.2 With one DC electrical power division (battery and/or battery charger inoperable) inoperable, CTS 3.8.2.4 Action c allows operation to continue for 72 hours as long as the associated 125V DC electrical power distribution subsystem is energized by the OPERABLE opposite unit DC electrical power subsystem. Since the CTS allowance does not specify an explicit time period for alignment, the time is considered as immediate. Therefore the DC electrical power distribution division would have to be declared inoperable immediately upon discovery. This time has been extended from immediately to 1 hour (ITS 3.8.4 Required Action A.1 Completion Time). The hour time period provides sufficient time to safely perform the alignment and restore power to the required

TECHNICAL CHANGES - LESS RESTRICTIVE

L.2 (cont'd) equipment, while minimizing the risk associated with an event occurring during this time period which would require the affected equipment to be Operable. The change is acceptable since the time allowed is short and allows operations to concentrate on restoring power to the required equipment instead of suspending activities which would be resumed once power is restored.

L.3 An alternative is proposed in the LaSalle 1 and 2 ITS to suspending operations if a DC Source is inoperable, and movement of irradiated fuel assemblies, CORE ALTERATIONS, or OPDRVs are being conducted. The alternative, ITS 3.8.5 Required Action B.1, is to declare the affected feature(s) inoperable, and continue to conduct operations (e.g., OPDRVs), if the affected feature(s) ACTIONS allow. Conservative actions can be assured if the affected feature(s) without the necessary DC power is declared inoperable and the associated ACTIONS of the individual feature(s) taken. These conservative actions are currently approved (or will be approved by the ITS amendment) by the NRC. Therefore, this change is considered acceptable. 

RELOCATED SPECIFICATIONS

None

ELECTRICAL POWER SYSTEMS

A.1

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. distribution system electrical divisions shall be OPERABLE and energized. LA.1

a. Division 1, consisting of: LA.1
1. 125-volt battery 1A.
2. 125-volt full capacity charger.
3. 125-volt distribution panel 111Y.

b. Division 2, consisting of: LA.1
1. 125-volt battery 1B.
2. 125-volt full capacity charger.
3. 125-volt distribution panel 112Y. LA.1

c. Division 3, consisting of: LA.1
1. 125-volt battery 1C.
2. 125-volt full capacity charger.
3. 125-volt distribution panel 113. LA.1

d. Unit 2 Division 2, consisting of: LA.1
1. 125-volt battery 2B.
2. 125-volt full capacity charger.
3. 125-volt distribution panel 212Y. LA.1

see ITS 3.8.4

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

ACTION B / ACTION D
a. With either Division 1 or Division 2 inoperable or not energized, restore the inoperable division to OPERABLE and energized status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. LA.1 L.1

add proposed second Completion Time M.1

ACTION E
b. With Division 3 inoperable or not energized, declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1. LA.1 A.3

ACTION C / ACTION D
c. With Unit 2 Division 2 inoperable or not energized, restore the inoperable division to OPERABLE and energized status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. LA.1 A.6

add proposed Required Action C.1 Note

add proposed description of equipment required to be supported by opposite unit bus A.5

add proposed ACTION G M.2 L.1

A.1

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. distribution system electrical divisions shall be OPERABLE ~~and energized~~

LA.1

a. Division 1, ~~consisting of~~:
   1. 125-volt battery 2A.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel Z11Y.

LA.1

b. Division 2, ~~consisting of~~:
   1. 125-volt battery 2B.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel Z12Y.

LA.1

c. Division 3, ~~consisting of~~:
   1. 125-volt battery 2C.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel Z13.

LA.1

d. Unit 1 Division 2, ~~consisting of~~:
   1. 125-volt battery 1B.
   2. 125-volt full capacity charger.
   3. 125-volt distribution panel 112Y.

LA.1

See ITS 3.8.4

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

ACTION B / ACTION D

a. With either Division 1 or Division 2 inoperable ~~or not energized~~ restore the inoperable division to OPERABLE ~~and energized~~ status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

L.1

M.1

add proposed second Completion time

LA.1

ACTION E

b. With Division 3 inoperable ~~or not energized~~, declare the HPCS system inoperable ~~and take the ACTION required by Specification 3.5.1.~~

A.3

ACTION C / ACTION D

c. With Unit 1 Division 2 inoperable ~~or not energized~~, restore the inoperable division to OPERABLE ~~and energized~~ status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

LA.1

A.6

add proposed Required Action C.1 Note

add proposed description of equipment required to be supported by opposite unit bus

A.5

add proposed ACTION G

M.2

L.1

ADMINISTRATIVE (continued)

A.5 A clarification has been added to the requirements in CTS 3.8.2.1 for opposite unit Division 2 AC electrical power distribution buses and CTS 3.8.2.3 for opposite unit Division 2 DC electrical power distribution buses. This clarification adds a description of the equipment required to be supported by the opposite unit Division 2 AC and DC electrical power distribution buses, i.e., equipment required to be OPERABLE by LCO 3.6.3.1, "Primary Containment Hydrogen Recombiners," LCO 3.6.4.3, "Standby Gas Treatment (SGT) System, LCO 3.7.4, "Control Room Area Filtration (CRAF) System," LCO 3.7.5, "Control Room Area Ventilation Air Conditioning (AC) System, and LCO 3.8.1, "AC Sources - Operating." The equipment required by these Specifications is common for both units and is supplied by Division 2 AC and DC electrical power distribution buses of both units. This change is considered administrative since the modification simply clarifies the intent of the existing CTS requirements.

A.6 A Note has been added to CTS 3.8.2.3 Action c (ITS 3.8.7 Required Action C.1) to enter the applicable Conditions and Required Actions of LCO 3.8.1 when Condition C results in the inoperability of a required offsite circuit. The opposite unit Division 2 distribution subsystem can be part of the circuit path for the alternate offsite circuit. Due to the addition of ITS LCO 3.0.6, the Note is needed to ensure the ACTIONS of LCO 3.8.1 are entered when an offsite circuit is also rendered inoperable. As such, this change is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The Completion Times of ITS 3.8.7 ACTIONS A and B have a limitation in addition to the 8 hour or 2 hour limit of CTS 3.8.2.1 Action a and 3.8.2.3 Action a. This additional limit establishes a maximum time allowed for any combination of distribution subsystems listed in ITS LCO 3.8.7.a to be inoperable during any single contiguous occurrence of failing to meet the LCO. If a Division 1 AC distribution subsystem is inoperable while, for instance, a Division 1 125 V DC bus is inoperable and subsequently returned OPERABLE, 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 Division 1 125 V DC distribution system. Then, a Division 1 AC subsystem could again become inoperable, and the DC distribution restored OPERABLE. 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 3.8.7.a" is proposed.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.2 CTS 3.8.2.1 Action a allows 8 hours to restore one inoperable AC subsystem and CTS 3.8.2.3 Action a allows 2 hours to restore one inoperable DC subsystem. Certain combinations of inoperable AC and DC subsystems will result in a loss of safety function (e.g., an inoperable Division 1 AC subsystem in combination with an inoperable Division 2 DC subsystem). ITS 3.8.7 adds ACTION G, which requires entry into ITS 3.0.3 if the loss of two or more electrical power distribution subsystems, in combination, results in a loss of safety function. ITS 3.8.7 Required Action G.1 preserves the intent of ITS 3.0.3 and reflects an additional restriction on plant operation. | A

M.3 CTS 4.7.3.d provides the Surveillance Requirements for the Division 1 250 V DC motor control center that supplies power to the RCIC System. The ITS presents the Division 1 250 VDC motor control center in the same Specifications as the AC and DC distribution subsystems. Therefore, a new LCO statement has been provided reflecting this. This portion of the change is administrative and is covered by Discussion of Change A.4. However, the Applicability of CTS 3.7.3 is MODES 1, 2, and 3 with reactor steam dome pressure greater than 150 psig. The ITS 3.8.7 Applicability covers all MODES 1, 2 and 3, not just when the reactor steam dome pressure is greater than 150 psig. This change is necessary since the Division 1 250 V DC motor control center also provides power to the RCIC primary containment isolation valve (PCIV). The RCIC PCIV is required by CTS 3.6.3 to be OPERABLE in MODES 1, 2, and 3. Therefore, to ensure the RCIC PCIV has the necessary electrical power to operate and perform its safety function (to close on the appropriate signals), this more restrictive change to the Applicability is required.

M.4 CTS 3.8.2.1 Action b requires that the HPCS System be declared inoperable when Division 3 of the A.C. distribution system is inoperable. However, the HPCS System is not the only affected engineered safety feature supported by Division 3 of the A.C. distribution system. Therefore, the associated ITS 3.8.7 Required Action will require that the "associated supported features" be declared inoperable. This will include both the HPCS System and the associated primary containment isolation valves. This is an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The details of CTS 3.8.2.1 (including Actions a, b, and c), 3.8.2.3 (including Actions a, b, and c), 4.8.2.1, 4.8.2.3.1, and 4.7.3.d relating to system design and OPERABILITY are proposed to be relocated to the Bases. The details for system OPERABILITY are not necessary in the LCO. The definition of OPERABILITY suffices. The design details are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the Distribution Systems since OPERABILITY requirements are adequately addressed in ITS 3.8.7, "Distribution Systems — Operating." Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.2 CTS 4.8.2.3.1 and 4.7.3.d.1.a details (the voltage limit and that the charger and battery provide the power) for verifying the required Distribution Systems are OPERABLE are proposed to be relocated to the UFSAR. These details are not necessary to ensure the OPERABILITY of the Distribution Systems. The requirements of ITS 3.8.7 and proposed SR 3.8.7.1 are adequate to ensure the required Distribution Systems are maintained OPERABLE. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the UFSAR are controlled by 10 CFR 50.59. In addition, any changes to the loads placed on the DG will be controlled by 10 CFR 50.59 (a design change is required to change the actual loads).

"Specific"

L.1 CTS 3.8.2.1 Action a allows 8 hours to restore one inoperable AC subsystem and CTS 3.8.2.3 Action a allows 2 hours to restore one inoperable DC subsystem. No time is provided if buses are inoperable in Division 1 and 2 AC subsystems concurrently or in Division 1 and 2 DC subsystems concurrently. Thus a CTS 3.0.3 entry is required. ITS 3.8.7 ACTIONS A and B allow one "or more" AC and DC electrical power distribution subsystems to be concurrently inoperable, without requiring an ITS 3.0.3 entry; either 8 hours or 2 hours (8 hours for AC and 2 hours for DC) will be allowed to restore the inoperabilities. However, ITS 3.8.7 ACTION G is also added to require that if two or more electrical power distribution subsystems are inoperable that, in combination, | (c)