BASES

ACTIONS (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power. INSERT 1 1

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution subsystems are functioning properly, with all the ~~buses~~ boards energized. The verification of proper voltage availability on the ~~buses~~ boards ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these ~~buses~~ boards. 1

~~[The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~ 4

~~OR~~

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

~~-----REVIEWER'S NOTE-----~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~----------]~~

REFERENCES

1. UFSAR, Chapter ~~[~~6~~]~~.
2. UFSAR, Chapter ~~[~~15~~]~~. 1 2

1

INSERT 1

B.1

panels

If one or more required DG DC electrical power distribution ~~subsystems~~ are inoperable, the associated DGs may be incapable of performing their intended function and must be immediately declared inoperable. This declaration also requires entry into the applicable Conditions and Required Actions for inoperable DGs, LCO 3.8.2, "AC Sources – Shutdown."

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

BACKGROUND

A description of the AC, vital DC, diesel generator (DG) DC, and AC vital instrument ~~bus~~ electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating." 1

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident and transient analyses in the U FSAR, Chapter ~~[~~6~~]~~ (Ref. 1) and Chapter ~~[~~15~~]~~ (Ref. 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. 1 2 1 1

The OPERABILITY of the AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution system is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. 1

The OPERABILITY of the minimum AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution subsystems during MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 1 2

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

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

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

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

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components - all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~[involving handling recently irradiated fuel]~~). 2

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, provide assurance that: 2

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

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

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

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

vital DG DC, instrument

The AC, DC, and AC vital ~~bus~~ electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9. 1

ACTIONS

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

BASES

ACTIONS (continued)

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

Although redundant required features may require redundant trains of
electrical power distribution subsystems to be OPERABLE, one
OPERABLE distribution subsystem train may be capable of supporting
sufficient required features to allow continuation of ~~[recently]~~ irradiated 2
fuel movement. By allowing the option to declare required features
associated with an inoperable distribution subsystem inoperable,
appropriate restrictions are implemented in accordance with the affected
distribution subsystem LCO's Required Actions. In many instances, this
option may involve undesired administrative efforts. Therefore, the
allowance for sufficiently conservative actions is made (i.e., to suspend
movement of ~~[recently]~~ irradiated fuel assemblies, and operations 2
involving positive reactivity additions that could result in loss of required
SDM (MODE 5) or boron concentration (MODE 6). Suspending positive
reactivity additions that could result in failure to meet the minimum SDM
or boron concentration limit is required to assure continued safe
operation. Introduction of coolant inventory must be from sources that
have a boron concentration greater than that what would be required in
the RCS for minimum SDM or refueling boron concentration. This may
result in an overall reduction in RCS boron concentration, but provides
acceptable margin to maintaining subcritical operation. Introduction of
temperature changes including temperature increases when operating
with a positive MTC must also be evaluated to ensure they do not result
in a loss of required SDM.

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

Notwithstanding performance of the above conservative Required
Actions, a required residual heat removal (RHR) subsystem may be
inoperable. In this case, Required Actions A.2.1 through A.2.~~4~~3 do not 3
adequately address the concerns relating to coolant circulation and heat
removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be
entered. Therefore, Required Action A.2.~~5~~4 is provided to direct declaring 3
RHR inoperable and not in operation, which results in taking the appropriate RHR actions.

BASES

ACTIONS (continued)

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

INSERT 1

1

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

vital DG DC, boards instrument

This Surveillance verifies that the AC, DC, and AC vital ~~bus~~ electrical power distribution subsystems are functioning properly, with all the ~~buses~~ energized. The verification of proper voltage availability on the ~~buses~~ ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these ~~buses~~.

1

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

~~OR~~

4

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

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

5

REFERENCES

U

1. FSAR, Chapter ~~[~~6~~]~~.
2. FSAR, Chapter ~~[~~15~~]~~.

1 2

1

INSERT 1

B.1

If one or more required DG DC electrical power distribution panels ~~subsystems~~ are inoperable, the associated DGs may be incapable of performing their intended function and must be immediately declared inoperable. This declaration also requires entry into the applicable Conditions and Required Actions for inoperable DGs, LCO 3.8.2, "AC Sources – Shutdown."

Licensee Response/NRC Response/NRC Question Closure

Id	**407**
NRC Question Number	**VKG025**
Select Application	**NRC Response**
Attachment 1	
Attachment 2	
Response Statement	

NRC staff has a 2-part follow-up RAI to the licensee's response to RAI# VKG025.

Part 1

In the licensee's response a term was changed. ITS and bases for 3.8.9 and 3.8.10 now contain both "AC vital instrument power" and "AC vital instrument electrical power." The terms need to be consistent as to not imply reference to a different component. Please revise ITS and Bases so that one term is used. Keep in mind that any changes to the license should also be reflected in the UFSAR per 10 CFR 50.71(e). A comprehensive search of ITS, ITS bases, and UFSAR for varying usage is recommended.

Part 2

In response to RAI # VKG025, the licensee provided an updated markup of ITS 3.8.9 and the corresponding Bases. The revised Unit 1 ITS 3.8.9.D states:

CONDITION D: One or more AC electrical power distribution subsystems inoperable due to one or more Unit 2 AC shutdown boards inoperable.

REQUIRED ACTION D1: Declare associated required feature(s) inoperable.

COMPLETION TIME: Immediately

The staff has the following concerns with ITS 3.8.9.D:

(1) One or more power distribution subsystems of Unit 2 should be limited to one train. Therefore, either the Condition D statement or the Bases D.1 should be revised appropriately to add the

limiting phrase, "a loss of safety function has not yet occurred," similar to Bases of Required Actions A1, B1, and C1.

(2) Required Action D.1 does not require the shutdown board(s) to be recovered in any given time. Required Action D.1 would allow continued operation of Unit 1 for a period of 3 to 7 days depending on the required feature(s) declared inoperable – see discussion in the RAI # VKG026 (ITS 3.8.1, Condition D, one DG of Unit 2 inoperable) and RAI # VKG027 (ITS 3.8.1, Condition C, one offsite circuit to 6.9 kV shutdown board of Unit 2 inoperable). Current TS only allows 8 hours to restore one or more shutdown boards to operable status before requiring shutdown of both Units. Thus the incremental risk for safe continued operation of Unit 1 will increase by 9 to 21 times (based upon allowed outage time) the current risk assessed in CTS. The licensee has not provided enough technical justification in Discussion of Change L01 regarding the increase in risk.

In ITS 3.8.9.D, both onsite and offsite power sources to Unit 2 6.9 kV shutdown board will be inoperable compared to the ITS 3.8.1 Conditions C and D in which only either the offsite or the onsite power becomes inoperable. Therefore, the continued operation of Unit 1 should be more restrictive than allowed in ITS 3.8.1 Conditions C or D.

Please provide additional technical justification to extend the completion time from 8 hours to 3 to 7 days in ITS 3.8.9.D, or revise ITS 3.8.9.D appropriately. This applies to both Units' ITS.

Response Date/Time	**12/19/2014 6:00 PM**
Closure Statement	
Question Closure Date	
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele** **Roger Scott**
Added By	**Khadijah Hemphill**
Date Added	**12/19/2014 9:12 AM**
Date	

Modified

Modified By

Licensee Response/NRC Response/NRC Question Closure

Id	**446**
NRC Question Number	**VKG025**
Select Application	**Licensee Response**
Attachment 1	**RAI VKG025 Attachment 1 Final Response May 1.pdf** (6MB)
Attachment 2	
Response Statement	

In response to the NRC staff's 2-part follow-up dated December 19, 2014, SQN provides the following responses:

In response to Part 1
In RAI VKG025, dated August 13, 2014, SQN was asked to "redefine/clarify distribution subsystems" as used in both the ITS 3.8 Specifications and ITS 3.8 Bases. In response to RAI VKG025 dated November 24, 2014, SQN provided markups of the ITS and ITS Bases for 3.8.9 and 3.8.10 to show consistency in the defined terms as they relate to similar descriptions in the SQN design and Licensing Basis for distribution subsystems. SQN performed a comprehensive search of ITS, ITS Bases, and the UFSAR for variations on nomenclature associated with the distribution subsystems. SQN has determined that no change is required.

In response to Part 2 (1)
In response to RAI VKG025, dated November 24, 2014, SQN provided an updated markup of ITS 3.8.9 ACTION D. In the VKG025 follow-up dated December 19, 2014, the staff expressed a concern that ITS 3.8.9 Condition D should be limited to only one opposite unit train and recommended a change to the TS Bases similar to the ITS 3.8.9 Bases discussion of Required Actions A.1, B.1 and C.1, requiring a limiting phrase, "a loss of safety function has not yet occurred." SQN will modify the ITS Bases for ITS 3.8.9 Required Action D.1 and E.1 to include a statement similar to Required Actions A.1, B.1 and C.1. See Attachment 1 for changes to ITS 3.8.9 Bases Required Action D.1 and E.1, Insert 4 (Enclosure 2, Volume 13 - page 576 and 587).

In response to Part 2: (2)
The safety function of the Standby AC Power System is to supply power to support the functioning of components and systems required to assure that (1) fuel design limits and reactor coolant pressure boundary design conditions are not exceeded due to anticipated operational occurrences, and (2) the core is cooled and vital functions are maintained in the event of postulated accidents, subject to the loss of the Preferred Power System and subject to any single failure in the Standby Power System.

To accomplish its safety function, the onsite Class 1E AC distribution system supplies electrical power to two power trains

for each unit. Each power train includes two Class 1E 6.9 kV shutdown boards powered from one of two separate and independent offsite power circuits or a dedicated onsite diesel generator (DG). Two DGs in one train can provide the safety related functions to mitigate a loss-of-coolant accident (LOCA) in one unit and safely shut down the other unit. The core cooling systems and containment systems credited in the mitigation of an anticipated operational occurrence (AOO) or postulated Design Basis Accident (DBA) are powered from the associated unit's shutdown boards.

The major features that are shared by Unit 1 and Unit 2 and powered from Unit 1 AC shutdown boards include the emergency gas treatment system (EGTS), essential raw cooling water (ERCW) system, component cooling water system (CCS), control room emergency ventilation system (CREVS), control room air conditioning system (CRACS), and the 125 V vital DC system. The shared features powered from Unit 2 AC shutdown boards include the auxiliary building gas treatment system (ABGTS), essential raw cooling water (ERCW) system, component cooling water system (CCS), and the 125 V vital DC system. Additionally, the auxiliary control air system (ACAS) is a technical specification support feature and is powered from Unit 2. Therefore, the SQN Technical Specifications requires both the associated unit's boards and the opposite unit's boards supplying power to required shared safety-related features to be OPERABLE.

The loss of an associated unit's AC shutdown board(s), covered by ITS 3.8.9 Condition A, is significant in that, although safety function is being maintained, a single failure in the remaining associated unit's shutdown board(s) could result in the minimum required engineered safety feature(s) (ESF) not being maintained. It is important that the operator's attention be focused on minimizing the potential for a loss of power to the remaining train by (1) stabilizing the unit, and (2) restoring power to the affected train. The ITS 3.8.9 Bases for Required Action A.1 states, "the 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of (1) the potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit, and (2) The potential for an event in conjunction with a single failure of a redundant component in the train with AC Power." Therefore, the completion time of 8 hours to restore an associated unit's inoperable shutdown board(s) reflects SQN current licensing basis (CTS 3.8.2.1 ACTION a).

Based on multiple discussions with the NRC staff regarding their concerns with ITS 3.8.9 ACTION D, SQN has agreed to revise ITS 3.8.9 to include two actions (ACTION D and ACTION E) pertaining to the inoperability of the opposite unit's AC shutdown board(s). ACTION D will provide a Condition when planned maintenance is being performed on the opposite unit's AC shutdown board(s). ACTION E will provide a Condition when an opposite unit's AC shutdown board is inoperable for reasons other than planned

maintenance.

During planned maintenance with the opposite unit in either a defueled condition or in MODE 6 flooded up following being defueled, the de-energization of the opposite unit's shutdown boards is covered by ITS 3.8.9 ACTION D. The Required Action for Condition D requires that with one or more opposite unit's shutdown boards inoperable to declare the associated supported required features inoperable immediately. The associated supported required features are limited to the shared safety-related features previously discussed. The Technical Specification ACTIONS associated with these inoperable shared safety-related features have Completion Times that range from 72 hours to 7 days to restore OPERABILITY. Therefore, as compared to the ITS 3.8.9 ACTION A Completion Time of 8 hours established for loss of an associated unit's shutdown board(s), the ITS 3.8.9 ACTION D Completion Time established for the loss of an opposite unit's shutdown board(s), immediately addresses the multiple, concurrent Completion Times associated with the inoperability of shared safety-related features. The ACTION D Notes restrict the use of this Condition to during planned maintenance and when the opposite unit is defueled or in MODE 6 following defueled with refueling water cavity level ≥ 23 ft. above top of the reactor vessel flange. ITS 3.8.9 Condition D Note 1, addressing planned maintenance, limits the use of ACTION D to a time when the operators have sufficient time to evaluate system alignments and the associated impact prior to making the opposite unit's AC shutdown board(s) inoperable. ITS 3.8.9 Condition D Note 2 addresses the NRC staff's concern of the shared system risks for the opposite unit in refueling as it relates to availability of power in support of shutdown cooling. Management and assessment of risk during the performance of on-line and outage maintenance is ensured by SQN's compliance with 10 CFR 50.65 "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." In SQN's response to RAI GMW-006, TVA proposed license conditions be added to Facility Operating License DPR-77 and Facility Operating License DPR-79, for Sequoyah Nuclear Plants, Unit 1 and 2, respectively. With the addition of ITS 3.8.9 Condition D Note 2, TVA is proposing that the availability of power in support of shutdown cooling has been addressed and the license conditions proposed in RAI GMW-006 are not necessary.

ITS 3.8.9. ACTION D requires immediately declaring the associated supported required features inoperable. The restoration time of the opposite unit's shutdown board(s) is commensurate with the restoration time of the associated unit's shared required features. Specifically, the opposite unit's shutdown board must be returned to OPERABLE status prior to declaring the shared required features with the shortest Completion Time OPERABLE.

ITS 3.8.9 ACTION E requires that with one or more AC electrical power distribution subsystem(s) inoperable due to one or more opposite unit AC shutdown boards inoperable for reasons other than Condition D, to restore the opposite unit's AC electrical power distribution subsystem(s) to OPERABLE status in 24 hours. CTS

3.8.2.1 ACTION a has a completion time to restore any AC shutdown board to OPERABLE status in 8 hours. ITS 3.8.9 ACTION E is acceptable because the opposite unit's AC shutdown boards are not as critical to the operating unit (fewer operating unit loads) as the operating unit's AC shutdown boards. The ITS 3.8.9 ACTION E Completion Time of 24 hours is more conservative than any of the Completion Times allowed for the components that would be without power. Additional consideration for the 24 hour Completion Time is the potential for an event in conjunction with a single failure of a redundant component (e.g. ABGTS, EGTS, CCS, etc.)

While in ITS 3.8.9 ACTION D or E, if a subsequent failure results in a “loss of safety function,” the Technical Specification ACTIONS associated with the inoperable shared feature will direct the unit operator to place the plant in the appropriate “end state” associated with the current condition of the plant (i.e., LCO 3.0.3).

Attachment 1 contains the changes associated with this response to the second NRC RAI VKG025 and the response to the original NRC VKG025. Attachment 1 supersedes the previous response to VKG025.

Response Date/Time	**5/6/2015 11:10 AM**
Closure Statement	
Question Closure Date	
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele**
Added By	**Lynn Mynatt**
Date Added	**5/6/2015 10:08 AM**
Date Modified	
Modified By	

ITS A01 ITS 3.8.9

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.9 3.8.2.1 The following A.C. electrical boards shall be OPERABLE and energized ~~with tie breakers open between redundant boards~~: LA03

~~6900 Volt Shutdown Board 1A-A~~
~~6900 Volt Shutdown Board 1B-B~~
~~6900 Volt Shutdown Board 2A-A~~
~~6900 Volt Shutdown Board 2B-B~~
~~480 Volt Shutdown Board 1A1-A~~
~~480 Volt Shutdown Board 1A2-A~~
~~480 Volt Shutdown Board 1B1-B~~
~~480 Volt Shutdown Board 1B2-B~~
~~480 Volt Shutdown Board 2A1-A~~
~~480 Volt Shutdown Board 2A2-A~~
~~480 Volt Shutdown Board 2B1-B~~
~~480 Volt Shutdown Board 2B2-B~~ LA01
~~120 Volt A.C. Vital Instrument Power Board Channels 1-I and 2-I~~ energized from inverters 1-I and 2-I connected to D.C. Channel I*#@. See ITS 3.8.7
~~120 Volt A.C. Vital Instrument Power Board Channels 1-II and 2-II~~ energized from inverters 1-II and 2-II connected to D.C. Channel II*#@.
~~120 Volt A.C. Vital Instrument Power Board Channels 1-III and 2-III~~ energized from inverters 1-III and 2-III connected to D.C. Channel III*#@.
~~120 Volt A.C. Vital Instrument Power Board Channels 1-IV and 2-IV~~ energized from inverters 1-IV and 2-IV connected to D.C. Channel IV*#@.

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

Add proposed Required Action A Note A03

ACTIONS ACTION:

Add proposed ACTION E L03

Unit 1 L01

ACTION A
ACTION B
ACTION ~~F~~ G

a. With less than the above complement of A.C. boards OPERABLE and energized, restore the inoperable boards to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION D L01

b. With one inverter inoperable, energize the associated Vital Instrument Power Board within 8 hours; restore the inoperable inverter to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. See ITS 3.8.7

Add proposed ACTION ~~G~~ H M02

SURVEILLANCE REQUIREMENTS

See ITS 3.8.7

SR 3.8.9.1 4.8.2.1 The specified A.C. boards and inverters shall be determined OPERABLE and energized ~~with tie breakers open between redundant boards~~ ~~at least once per 7 days~~ by verifying correct breaker alignment and indicated voltage on the busses. LA03

In accordance with the Surveillance Frequency Control Program LA02

* Two inverters may be disconnected from their D.C. source for up to 24 hours for the purpose of performing an equalizing charge on their associated battery bank provided (1) the vital instrument power board is OPERABLE and energized, and (2) the vital instrument power boards associated with the other battery banks are OPERABLE and energized from their respective inverters connected to their respective D.C. source. See ITS 3.8.7

~~# D.C. Channel V may be substituted for any one channel of channels I-IV.~~ LA04

@ The spare inverter for a specified channel may be substituted for one of the two inverters of the same channel. See ITS 3.8.7

ITS

A01

ITS 3.8.9

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTI0N - OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.9

3.8.2.3 The following D.C. vital battery channels shall be energized and OPERABLE:

LA01

~~CHANNEL I~~ ~~Consisting of 125 - volt D.C. board No. I~~, 125 - volt D.C. battery bank No. I* and a full capacity charger.

~~CHANNEL II~~ ~~Consisting of 125 - volt D.C. board No. II~~, 125 - volt D.C. battery bank No. II*, and a full capacity charger.

~~CHANNEL III~~ ~~Consisting of 125 - volt D.C. board No. III~~, 125 - volt D.C. battery bank No. III*, and a full capacity charger.

~~CHANNEL IV~~ ~~Consisting of 125 - volt D.C. board No. IV~~, 125 - volt D.C. battery bank No. IV*, and a full capacity charger.

See ITS 3.8.4

Applicability

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTIONS

ACTION:

or more

L02

ACTION C

a. With one 125-volt D.C. board inoperable, restore the inoperable board to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION ~~F~~ G

b. With one 125-volt D.C. battery bank and/or its charger inoperable, restore the inoperable battery bank and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.4

*D.C. Battery Bank V may be substituted for any other Battery Bank as needed.

See ITS 3.8.4

ITS A01 ITS 3.8.9

ELECTRICAL POWER SYSTEMS
3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.9 3.8.2.1 The following A.C. electrical boards and inverters shall be OPERABLE and energized ~~with tie breakers open between redundant boards:~~ LA03

~~6900 Volt Shutdown Board 1A-A~~
~~6900 Volt Shutdown Board 1B-B~~
~~6900 Volt Shutdown Board 2A-A~~
~~6900 Volt Shutdown Board 2B-B~~
~~480 Volt Shutdown Board 1A1-A~~
~~480 Volt Shutdown Board 1A2-A~~
~~480 Volt Shutdown Board 1B1-B~~
~~480 Volt Shutdown Board 1B2-B~~
~~480 Volt Shutdown Board 2A1-A~~
~~480 Volt Shutdown Board 2A2-A~~
~~480 Volt Shutdown Board 2B1-B~~
~~480 Volt Shutdown Board 2B2-B~~
~~120 Volt A.C. Vital Instrument Power Board Channels 1-I and 2-I~~ LA01
energized from inverters 1-I and 2-I connected to D.C. Channel I*#@. See ITS 3.8.7
~~120 Volt A.C. Vital Instrument Power Board Channels 1-II and 2-II~~
energized from inverter 1-II and 2-II connected to D.C. Channel II*#@.
~~120 Volt A.C. Vital Instrument Power Board Channels I-III and 2-III~~
energized from inverter 1-III and 2-III connected to D.C. Channel III*#@.
~~120 Volt A.C. Vital Instrument Power Board Channels I-IV and 2-IV~~
energized from inverter 1-IV and 2-IV connected to D.C. Channel IV*#@.

Applicability APPLICABILITY: MODES 1, 2, 3 and 4. Add proposed Required Action A Note A03

ACTIONS ACTION: Add proposed ACTION E L03 Unit 2 L01

ACTION A
ACTION B
ACTION ~~F~~ G

a. With less than the above complement of A.C. boards OPERABLE and energized, restore the inoperable boards to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION D L01

b. With one inverter inoperable, energize the associated Vital Instrument Power Board within 8 hours; restore the inoperable inverter to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. See ITS 3.8.7

Add proposed ACTION ~~G~~ H M02

SURVEILLANCE REQUIREMENTS

See ITS 3.8.7

SR 3.8.9.1 4.8.2.1 The specified A.C. boards and inverters shall be determined OPERABLE and energized ~~with tie breakers open between redundant boards~~ ~~at least once per 7 days~~ by verifying correct breaker alignment and indicated voltage on the busses. LA03

In accordance with the Surveillance Frequency Control Program LA02

* Two inverters may be disconnected from their D.C. source for up to 24 hours for the purpose of performing an equalizing charge on their associated battery bank provided (1) the vital instrument power board is OPERABLE and energized, and (2) the vital instrument power boards associated with the other battery banks are OPERABLE and energized from their respective inverters connected to their respective D.C. sources. See ITS 3.8.7

~~# D.C. Channel V may be substituted for any one channel of channels I - IV.~~ LA04

@ The spare inverter for a specified channel may be substituted for one of the two inverters of the same channel. See ITS 3.8.7

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ITS A01 ITS 3.8.9

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.9 3.8.2.3 The following D.C. vital battery channels shall be OPERABLE and energized: LA01

~~CHANNEL I~~ ~~Consisting of 125 -volt D.C. board No. I~~, 125 - volt D.C. battery bank No. I* and a full capacity charger.

~~CHANNEL II~~ ~~Consisting of 125 - volt D.C. board No. II~~, 125 - volt D.C. battery bank No. II*, and a full capacity charger.

~~CHANNEL III~~ ~~Consisting of 125 - volt D.C. board No. III~~, 125 - volt D.C. battery bank No. III*, and a full capacity charger.

~~CHANNEL IV~~ ~~Consisting of 125 - volt D.C. board No. IV~~, 125 - volt D. C. battery bank No. IV*, and a full capacity charger. See ITS 3.8.4

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

ACTIONS ACTION: or more L02

ACTION C a. With one 125-volt D.C. board inoperable or not energized, restore the inoperable board to OPERABLE and energized status within 2 hours or be in at least HOT STANDBY within the

ACTION ~~F~~ G next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one 125-volt D.C. battery bank and/or its charger inoperable or not energized, restore the inoperable battery bank and/or charger to OPERABLE and energized status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. See ITS 3.8.4

SURVEILLANCE REQUIREMENTS LA02

In accordance with the Surveillance Frequency Control Program

SR 3.8.9.1 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized ~~with tie breakers open between redundant busses~~ ~~at least once per 7 days~~ by verifying correct breaker alignment, indicated power availability from the charger and battery, and voltage on the bus ~~of greater than or equal to 125 volts.~~ LA03 See ITS 3.8.4 LA05

4.8.2.3.2** Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying that the parameters in Table 4.8-2 meet the Category A limits, and

See ITS 3.8.4 and 3.8.6

* D.C. Battery Bank V may be substituted for any other Battery Bank as needed.
** This surveillance includes Battery Bank V, but not Charger V.

See ITS 3.8.4

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

ADMINISTRATIVE CHANGES

A01 In the conversion of the Sequoyah Nuclear Plant (SQN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 4.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS does not contain specific ACTIONS for the condition where a diesel generator (DG) DC distribution subsystem is inoperable. However, the CTS definition of OPERABLE-OPERABILITY, CTS 1.19, states, in part, that a system, subsystem, train, or component or device shall be OPERABLE or have OPERABILITY when all necessary auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s). ITS 3.8.9, ACTION ~~E~~ F specifically states that when a DG DC ~~distribution subsystem~~ electrical power distribution panel is inoperable to declare the associated DG inoperable immediately. This changes the CTS by specifically stating the CTS 1.19 requirement in ITS LCO 3.8.9.

The purpose of ITS 3.8.9 is to ensure the necessary AC, vital DC, DG DC, and AC vital instrument electrical power distribution subsystems are available to provide emergency electrical power to ensure the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded and to mitigate postulated events. The change is acceptable since it is consistent with the requirements in CTS 1.19 that all attendant equipment must be capable of performing its related support function to support a required feature. Although not explicitly stated in CTS, this action is always applied due to the application of CTS 1.19. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 3.8.2.1 ACTION a states, in part, that with less than the above complement of AC boards OPERABLE and energized, to restore the inoperable boards to OPERABLE status within 8 hours. ITS 3.8.9 Required Action A.1 allows 8 hours to restore ~~the associated unit's~~ AC electrical power distribution subsystem(s) to OPERABLE status. In addition, Required Action A.1 includes a Note that requires entry into applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources – Operating," for vital DC ~~Sources~~ electrical power trains made inoperable by inoperable AC electrical power distribution subsystems. This changes the CTS by explicitly requiring the compensatory actions for DC ~~Sources~~ electrical power trains to be taken if made inoperable by inoperable AC electrical power distribution subsystems. The discussion for limiting the Required Actions to the associated unit's AC shutdown boards is contained in DOC L01.

This change is acceptable because no changes are made to CTS requirements. The change in format from the CTS to the ITS maintains the technical requirements. The addition of the Note only acts as a reminder to enter the appropriate actions if the emergency bus which supplies the Train A or Train B

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

battery charger becomes de-energized. In the event an emergency board is inoperable such that a Train A or Train B battery charger were inoperable, ITS LCO 3.0.6 would allow taking only the Distribution System - Operating ACTIONS; taking exception to complying with the DC Sources - Operating ACTIONS. Since the Distribution System - Operating ACTIONS may not be sufficiently conservative in this event (i.e., a battery charger may be without power), specific direction to take appropriate ACTIONS for the DC Sources - Operating is added (ITS 3.8.9, Note to ACTION A) when there is no power to support the associated required battery charger. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 4.8.1.1.3 requires, in part, that the 125 volt DC distribution panel for each DG be demonstrated OPERABLE. ITS SR 3.8.9.1 requires, in part, verifying correct breaker alignments and voltage to the 125 volt DC distribution subsystem ~~for each DG~~. This changes the CTS by requiring correct breaker alignment verification and correct voltage for the DG DC ~~bus~~ electrical power distribution subsystem.

The purpose of CTS 4.8.1.1.3 is to provide assurance that necessary power to required supported systems is available with sufficient capacity, capability, redundancy, and reliability to ensure the fuel, RCS, and containment design limits are not exceeded and postulated accidents are mitigated. This change is acceptable because it provides additional assurance that the panels associated with the DG DC bus electrical power distribution subsystem are OPERABLE. This change is designated as more restrictive because it adds a new Surveillance Requirement to the CTS for verification of correct breaker alignment and voltage.

M02 CTS 3.8.2.1 ACTION a states that with less than the above complement of AC boards OPERABLE and energized, to restore the inoperable boards to OPERABLE status within 8 hours. CTS 3.8.2.3 ACTION a states that with one 125 volt DC board inoperable, to restore the inoperable boards to OPERABLE status within 2 hours. However, there are no limitations to preclude a loss of function due to numerous concurrently inoperable AC and DC boards. ITS 3.8.9 ACTION ~~G~~ H has been added, requiring entry into ITS 3.0.3 if the loss of two or more required electrical power distribution subsystems result in a loss of safety function. This changes CTS by adding an explicit Action to enter LCO 3.0.3 for a loss of two or more electrical power distribution subsystems that result in a loss of safety function.

The purpose of the CTS ACTIONS is to limit the time the unit can operate under these conditions. CTS 3.8.2.3 ACTION a specifies the compensatory actions for one inoperable DC board. With two inoperable DC boards, CTS 3.8.2.3 does not provide any actions and entry into LCO 3.0.3 would be required. CTS 3.8.2.1 ACTION a is applicable to all inoperable AC boards even if there is a loss of safety function. Certain combinations of inoperable AC and DC electrical power distribution subsystems result in a loss of safety function (e.g., an inoperable Train A AC electrical power distribution subsystem in combination with an

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

inoperable Train B vital DC electrical power distribution subsystem). ITS 3.8.9 includes ACTION ~~G~~ H, which requires immediate entry into LCO 3.0.3 if the loss of one or more required electrical power distribution subsystems boards results in a loss of safety function. ITS 3.8.9 Required Action ~~G.1~~ H preserves the intent of ITS LCO 3.0.3 and reflects an additional restriction on plant operation. This change is designated as more restrictive because an explicit action has been added which requires entry into LCO 3.0.3 with any combination of required AC and/or DC boards inoperable that results in a loss of safety function.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.1.1.3.b.5 requires, in part, a separate 125 volt DC distribution panel to be OPERABLE for each DG. CTS 3.8.2.1 requires, in part, the AC electrical boards to be OPERABLE and lists the specific AC shutdown boards and AC vital instrument power board channels, including the applicable nominal voltage. CTS 3.8.2.3 requires, in part, vital DC boards to be OPERABLE and lists the specific boards and includes the nominal voltage. ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE. This changes the CTS by moving the specific names of the buses and the associated nominal bus voltages (i.e., 6900 V, 480 V, 125 V, and 120 V) from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS 3.8.9 retains the requirement for the required distribution subsystems to be OPERABLE. In addition, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. The Technical Specification Bases Control Program in Chapter 5 controls changes to the Bases, requiring an evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 5 – Removal of SR Frequency to the Surveillance Frequency Control Program)* CTS 4.8.1.1.3 requires, in part, verification that the 125 volt DC distribution panel for each diesel generator is demonstrated OPERABLE. CTS 4.8.2.1 requires, in part, the specified AC boards to be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses. CTS 4.8.2.3.1 requires, in part, each DC bus train to be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment, indicated power availability from the charger and battery, and voltage on the bus. DOC M01 discusses addition of a surveillance requirement to verify correct alignments and voltage for the DG

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

DC distribution subsystem with a frequency of 7 days. ITS SR 3.8.9.1 requires a similar Surveillance and specifies the periodic Frequency as, "In accordance with the Surveillance Frequency Control Program." This changes the CTS by moving the specified Frequencies for these SRs and associated Bases to the Surveillance Frequency Control Program.

The removal of these details related to Surveillance Requirement Frequencies from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The existing Surveillance Frequencies are removed from Technical Specifications and placed under licensee control pursuant to the methodology described in NEI 04-10. A new program (Surveillance Frequency Control Program) is being added to the Administrative Controls section of the Technical Specifications describing the control of Surveillance Frequencies. The surveillance test requirements remain in the Technical Specifications. The control of changes to the Surveillance Frequencies will be in accordance with the Surveillance Frequency Control Program. The Program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met. This change is designated as a less restrictive removal of detail change, because the Surveillance Frequencies are being removed from the Technical Specifications.

LA03 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.8.2.1 requires the AC electrical boards to be OPERABLE and energized "with tie breakers open between redundant boards." CTS 4.8.2.1 also requires the AC boards to be determined OPERABLE and energized from AC sources "with tie breakers open between redundant busses" by verifying correct breaker alignment and indicated voltage on the buses. CTS 4.8.2.3.1 requires, in part, the DC bus trains to be determined OPERABLE and energized "with tie breakers open between redundant buses". ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE and ITS SR 3.8.9.1 requires the verification of correct breaker alignments and voltage to required AC, vital DC, DG DC, and AC vital electrical power distribution subsystems. This changes the CTS by moving the procedural detail that the boards must have their tie breakers open between redundant boards from the CTS to the ITS Bases.

instrument

The removal of these details for meeting Technical Specification requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the electrical power distribution subsystems to be OPERABLE and requires the verification of correct breaker alignments and voltage to required AC, vital DC, DG DC, and AC vital electrical power distribution subsystems. In addition, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. The Technical Specification Bases Control Program in Chapter 5 controls changes to the Bases. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal

instrument

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA04 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.2.1 states, in part, that the specified A.C. boards shall be determined OPERABLE by verifying correct breaker alignment. CTS 3.8.2.1 includes Note # that allows D.C. Channel V to be substituted for any one channel of channels I-IV, thus verification of correct breaker alignment is required when Channel V is substituted. ITS SR 3.8.9.1 does not contain this design information. This changes the CTS by moving the details that DC ~~c~~Channel V can be substituted for any one of channels I-IV from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS 3.8.9 retains the requirement for the required distribution subsystems to be OPERABLE. In addition, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. The Technical Specification Bases Control Program in Chapter 5 controls changes to the Bases, requiring an evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA05 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.2.3.1 requires, in part, each DC bus to be determined OPERABLE by verifying voltage of greater than or equal to 125 volt DC on the bus. ITS SR 3.8.9.1 requires, in part, verification of correct breaker alignment and voltage to the DG DC electrical power distribution subsystems. This changes the CTS by removing the specified voltage limit from the surveillance and placing it in the Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify the correct voltage to each diesel generator 125 volt DC distribution panel and to each vital DC board. In addition, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. The Technical Specification Bases Control Program in Chapter 5 controls changes to the Bases. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 CTS 3.8.2.1 ACTION a requires that with less than the listed AC electrical boards OPERABLE and energized to restore the inoperable boards to OPERABLE status within 8 hours. ITS LCO 3.8.9 ACTION A requires that with one or more

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due to one or more of the associated unit's AC shutdown boards inoperable

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

electrical power distribution subsystems

due to one or more of the opposite unit's AC shutdown boards inoperable

~~associated unit's~~ AC electrical power distribution subsystems ~~boards(s)~~ inoperable to restore AC electrical power distribution subsystem(s) to OPERABLE status within 8 hours. ITS 3.8.9 ACTION D requires that when one or more ~~opposite unit's~~ AC ~~boards~~ are inoperable to declare the associated supported required feature(s) inoperable immediately. This changes the CTS by providing a separate ACTION to declare the required supported feature(s) inoperable and follow the applicable ACTIONS for the affected shared system LCOs when the opposite unit's required AC boards are inoperable.

ITS 3.8.9 Condition D is modified by two notes. Note 1 states, "Only applicable during planned maintenance." Note 2 states, "Only applicable when Unit 2 [Unit 1] is defueled or in MODE 6 following defueled with Unit 2 [Unit 1] refueling water level ≥ 23 ft. above top of reactor vessel flange."

The safety function of the Standby AC Power System is to supply power to support the functioning of components and systems required to assure that (1) fuel design limits and reactor coolant pressure boundary design conditions are not exceeded due to anticipated operational occurrences, and (2) the core is cooled and vital functions are maintained in the event of postulated accidents, subject to loss of the Preferred Power System and subject to any single failure in the Standby Power System. To accomplish its safety function, the onsite Class 1E AC distribution system supplies electrical power to two power trains for each unit. Each power train includes two Class 1E 6.9 kV shutdown boards powered from one of two separate and independent offsite power lines or a dedicated onsite DG. Two DGs in one train can provide the safety related functions to mitigate a loss-of-coolant accident (LOCA) in one unit and safely shut down the other unit. The core cooling and containment cooling system loads are unitized to the respective unit's 6.9 kV shutdown boards. Although the core cooling systems and containment systems credited in the mitigation of an anticipated operational occurrence (AOO) or postulated Design Basis Accident (DBA) are unitized (not shared with the opposite unit) and powered from the associated unit's shutdown boards, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVS), and Control Room ~~HVAC~~ (CRACS)) are shared between the units. ~~The AC sources for these loads are distributed across both unit's shutdown boards.~~ Therefore, in addition to requiring the associated unit's boards to be OPERABLE; the opposite unit's boards supplying power to a required shared system component is also required to be OPERABLE. The purpose of CTS 3.8.2.1 ACTION a is to limit the time AC boards can be inoperable. The proposed change maintains the CTS ACTIONS and allowed outage time for the associated unit's AC boards, and proposes a new ACTION that changes the allowed outage time for the opposite unit's AC boards. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions associated with the required features are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair the inoperable features. If the necessary repairs cannot be made within the established Completion Time, the applicable Conditions for the affected shared system LCOs establish the Required Actions to exit the MODE of Applicability for that inoperable required feature. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's AC boards

Air Conditioning

The AC sources for these loads are supplied from an A Train and B Train AC shutdown board from a single unit.

shutdown

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

shutdown

commensurate with the importance of maintaining these AC boards capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 (*Category 4 - Relaxation of Required Action*) CTS 3.8.2.3 ACTION a. states, "With one 125-volt D.C. board inoperable, restore the inoperable board to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." For more than one 125-volt DC board inoperable, CTS 3.8.2.3 does not contain a specific requirement; therefore, entry into LCO 3.0.3 is required. ITS 3.8.9 CONDITION C provides Required Actions for one or more vital DC electrical power distribution subsystems inoperable. ITS 3.8.9 Required Action C.1 requires restoration of vital DC electrical power distribution subsystem(s) to OPERABLE status within 2 hours. Additionally, ITS 3.8.9 ACTION H requires entry into LCO 3.0.3, immediately, if two or more inoperable electrical power distribution subsystems result in a loss of safety function. This changes the CTS by allowing more than one 125-volt DC board to be inoperable, provides an additional hour to restore inoperable 125-volt DC boards to OPERABLE status, and eliminates the requirement to enter LCO 3.0.3 if more than one 125-volt DC board is inoperable and a loss of safety function has not occurred.

The purpose of CTS 3.8.2.3 is to ensure that two trains (subsystems) of the vital DC electrical power distribution system (four 125-volt DC boards, two per train) are capable of supplying the associated loads during a design bases accident (DBA). This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering that only a small amount of time is provided to restore the required features, and the low probability of a DBA occurring during the repair period. Allowing an additional hour to restore one or more inoperable vital DC electrical power distribution subsystems (or more than one 125-volt DC board) is appropriate as it may avoid a shutdown, a unit transient, while the vital DC electrical power distribution subsystem is not in full working order. The ITS requires immediate entry into LCO 3.0.3 if the loss of more than one vital DC electrical power distribution system results in a loss of safety function, therefore, all safety analysis assumptions are being met. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Insert L03

L03

CTS 3.8.2.1 ACTION a requires that with less than the listed AC electrical boards OPERABLE and energized to restore the inoperable boards to OPERABLE status within 8 hours. ITS 3.8.9 ACTION A requires that with one or more AC electrical power distribution subsystems inoperable due to one or more of the associated unit's AC shutdown boards inoperable to restore AC electrical power distribution subsystem(s) to OPERABLE status within 8 hours. ITS 3.8.9 ACTION D requires that with one or more AC electrical power distribution subsystems inoperable due to one or more opposite unit AC shutdown boards inoperable to declare the associated required feature(s) inoperable immediately. ITS 3.8.9 Action D is only applicable during planned maintenance when the opposite unit is defueled or in MODE 6 following defueled with the opposite unit refueling water level ≥ 23 feet above top of the reactor vessel flange. ITS 3.8.9 ACTION E requires that with one or more AC electrical power distribution subsystems inoperable due to one or more opposite unit AC shutdown boards inoperable for reasons other than Condition D to restore AC electrical power distribution subsystem(s) to OPERABLE status in 24 hours. This changes the CTS by providing a new ACTION that extends the time allowed to restore to OPERABLE status the AC electrical power distribution subsystem(s) made inoperable due to the opposite unit's AC shutdown boards for other than planned maintenance from 8 hours to 24 hours.

The safety function of the Standby AC Power System is to supply power to support the functioning of components and systems required to assure that (1) fuel design limits and reactor coolant pressure boundary design conditions are not exceeded due to anticipated operational occurrences, and (2) the core is cooled and vital functions are maintained in the event of postulated accidents, subject to loss of the Preferred Power System and subject to any single failure in the Standby Power System. To accomplish its safety function, the onsite Class 1E AC distribution system supplies electrical power to two power trains for each unit. Each power train includes two Class 1E 6.9 kV shutdown boards powered from one of two separate and independent offsite power circuits or a dedicated onsite DG. Two DGs in one train can provide the safety related functions to mitigate a loss-of-coolant accident (LOCA) in one unit and safely shut down the other unit. The major core cooling and containment cooling system loads are unitized to the respective unit's 6.9 kV shutdown boards. Although the major core cooling systems and containment systems credited in the mitigation of an anticipated operational occurrence (AOO) or postulated Design Basis Accident (DBA) are unitized (not shared with the opposite unit) and powered from the associated unit's shutdown boards, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment (ABGTS), Control Room Emergency Ventilation (CREVS), and Control Room Air Conditioning (CRACS)) are shared between the units. The AC sources for these loads are supplied from an A train and B train AC shutdown board from a single unit. Therefore, in addition to requiring the associated unit's boards to be OPERABLE, the opposite unit's boards supplying power to both trains of required shared system components are also required to be OPERABLE. The purpose of CTS 3.8.2.1 ACTION a is to limit the time AC boards can be inoperable. The proposed change maintains the CTS ACTIONS and allowed outage time for the associated unit's AC shutdown boards, and proposes a new ITS ACTION E that changes the allowed outage time from 8 hours to 24 hours for the opposite unit's AC shutdown boards that are inoperable for reasons other than planned maintenance. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the 24 hour limit for the AC electrical power distribution

subsystems made inoperable due to the opposite unit's AC shutdown boards is more conservative than Completion Times allowed for the components that would be without power. This change is designated as less restrictive, because additional time is allowed to restore the OPERABILITY of the AC electrical power distribution subsystem(s) when the AC electrical power distribution subsystems are inoperable due to the opposite unit's AC shutdown boards under the ITS than under the CTS.

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

3.8.1.1
3.8.2.1
3.8.2.3

LCO 3.8.9 Two ~~Train A and Train B AC,~~ vital ~~DC,~~ , ~~and diesel generator (DG) DC~~ ~~and AC vital~~ ~~bus~~ electrical power distribution ~~subsystems~~ trains shall be OPERABLE. ~~1~~ 5

Applicability
3.8.1.1
3.8.2.1
3.8.2.3

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.2.1 ACTION a. DOC A03 — A. One or more ~~Unit 1~~ AC electrical power distribution subsystems inoperable due to one or more Unit 1 AC shutdown boards inoperable.	A.1 --------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for vital DC electrical power trains made inoperable by inoperable AC electrical power distribution subsystems. -------------------------------------	~~2~~ 2 1 1
3.8.2.1 ACTION a.	Restore Unit 1 AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours 2
3.8.2.1 ACTION a. — B. One or more AC vital ~~buses~~ instrument power distribution subsystems inoperable.	B.1 Restore AC vital ~~bus~~ instrument power distribution subsystem(s) to OPERABLE status.	~~2~~ 8 hours 1
3.8.2.3 ACTION a. DOC L02 — C. One ~~or more~~ vital DC electrical power distribution subsystem~~s~~ inoperable.	C.1 Restore vital DC electrical power distribution subsystem~~(s)~~ to OPERABLE status.	2 hours 1

STET

INSERT 1 2

2 **INSERT 1**

DOC L01	D. One or more ~~Unit 2~~ AC electrical power distribution subsystems inoperable due to one or more Unit 2 AC shutdown boards inoperable.	D.1 Declare associated required feature(s) inoperable.	Immediately	2
DOC A02	F ~~E~~. One or more ~~required~~ DG DC ~~subsystems~~ electrical power distribution panels inoperable.	F ~~E~~.1 Declare associated supported DG inoperable.	Immediately	2

NOTES

1. Only applicable during planned maintenance.

2. Only applicable when Unit 2 is defueled or in MODE 6 following defueled with Unit 2 refueling water cavity level ≥ 23 ft. above top of reactor vessel flange. 6

DOC L03	E. One or more AC electrical power distribution subsystems inoperable due to one or more Unit 2 AC shutdown boards inoperable for reasons other than Condition D.	E.1 Restore Unit 2 AC electrical power distribution subsystem(s) to OPERABLE status.	24 hours	6

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
3.8.2.1 ACTION a. 3.8.2.3 ACTION a.	F G ~~D~~. Required Action and associated Completion Time ~~for Condition A, B, or C~~ not met.	G ~~F~~ ~~D~~.1 AND G ~~F~~ ~~D~~.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours	2
DOC M02	H ~~G~~ ~~E~~. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	~~G~~ H ~~E~~.1	Enter LCO 3.0.3.	Immediately	2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.8.2.1 4.8.2.3.1 DOC M01	SR 3.8.9.1	Verify correct breaker alignments and voltage to ~~[required]~~ AC, vital DC, DG DC, and AC vital ~~bus~~ instrument electrical power distribution subsystems.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~	3 1 4

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

3.8.1.1
3.8.2.1
3.8.2.3

LCO 3.8.9 Two ~~Train A and Train B AC,~~ vital ~~DC,~~ ~~, and diesel generator (DG) DC~~ ~~and AC vital~~ ~~bus~~ electrical power distribution ~~subsystems~~ trains shall be OPERABLE. ~~1~~ 5

Applicability
3.8.1.1
3.8.2.1
3.8.2.3

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.8.2.1 ACTION a. DOC A03	A. One or more ~~Unit 2~~ AC electrical power distribution subsystems inoperable due to one or more Unit 2 AC shutdown boards inoperable.	A.1 --------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for vital DC electrical power trains made inoperable by inoperable AC electrical power distribution subsystems. -------------------------------------		~~2~~ 2 1 1
3.8.2.1 ACTION a.		Restore Unit 2 AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours	2
3.8.2.1 ACTION a.	B. One or more AC vital ~~buses~~ instrument power distribution subsystems inoperable.	B.1 Restore AC vital ~~bus~~ instrument power distribution subsystem(s) to OPERABLE status.	8 ~~2~~ hours	1
3.8.2.3 ACTION a. DOC L02	C. One ~~or more~~ vital DC electrical power distribution subsystem~~s~~ inoperable.	C.1 Restore vital DC electrical power distribution subsystem~~(s)~~ to OPERABLE status.	2 hours	1

STET

INSERT 1 2

2 **INSERT 1**

DOC L01

DOC A02

D. One or more ~~Unit 1~~ AC electrical power distribution subsystems inoperable. due to one or more Unit 1 AC shutdown boards inoperable	D.1 Declare associated required feature(s) inoperable.	Immediately
F ~~E.~~ One or more ~~required~~ DG DC ~~subsystems~~ electrical power distribution panels inoperable.	F ~~E.~~1 Declare associated supported DG inoperable.	Immediately

2

2

NOTES

---

1. Only applicable during planned maintenance.

2. Only applicable when Unit 1 is defueled or in MODE 6 following defueled with Unit 1 refueling water cavity level ≥ 23 ft. above top of reactor vessel flange.

6

E. One or more AC electrical power distribution subsystems inoperable due to one or more Unit 1 AC shutdown boards inoperable for reasons other than Condition D.	E.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	24 hours

DOC L03

6

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.2.1 ACTION a. 3.8.2.3 ACTION a. ~~D~~ ~~F~~ G. Required Action and associated Completion Time ~~for Condition A, B, or C~~ not met.	~~D~~ ~~F~~ G.1 Be in MODE 3. AND ~~D~~ ~~F~~ G.2 Be in MODE 5.	6 hours 36 hours (2)
DOC M02 ~~E~~ ~~G~~ H. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	~~E~~ ~~G~~ H.1 Enter LCO 3.0.3.	Immediately (2)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.2.1 4.8.2.3.1 DOC M01 SR 3.8.9.1	Verify correct breaker alignments and voltage to ~~[~~required~~]~~ AC, vital DC, DG DC, and AC vital ~~bus~~ instrument electrical power distribution subsystems.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ (3) (1) (4)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

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

2. Changes are made to the ISTS to reflect the interaction between an operating unit's electrical distribution subsystem and those credited features needing support from the opposite unit's associated electrical distribution subsystem.

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

4. ISTS SR 3.8.9.1 provides two options for controlling the Frequencies of Surveillance Requirements. SQN is proposing to control the Surveillance Frequencies under the Surveillance Frequency Control Program. Therefore, the Frequency for ITS SR 3.8.9.1 is "In accordance with the Surveillance Frequency Control Program."

5. ISTS LCO 3.8.9 is modified to: "Two electrical power distribution trains shall be OPERABLE." This change is made to simplify and clarify what is required to meet the LCO. As described in the ISTS Bases, each train consists of specific AC and DC electrical power distribution subsystems. Therefore, it is unnecessary to state in ISTS LCO 3.8.9 the specific electrical power distribution subsystems of Train A and B that are required to meet the LCO.

6. ISTS LCO 3.8.9 is modified to specify the Conditions that could be entered when an opposite unit's AC electrical power distribution subsystem is inoperable. During planned maintenance, the Condition entered will allow for an extended Completion Time versus the Condition if the subsystem is inoperable for reasons other than planned maintenance. The Condition that would be entered for planned maintenance also includes specific plant parameters that must be met in order to allow for an extended Completion Time.

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B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

DG DC, instrument INSERT 1 1

BASES

vital

BACKGROUND

The onsite Class 1E AC, DC, and AC vital ~~bus~~ electrical power distribution systems are divided ~~by train~~ into [two] redundant and independent ~~AC, DC, and AC vital bus electrical power distribution subsystems.~~ 1 2 1 1 1

trains ~~vital~~ Each INSERT 2

four two

~~The~~ AC electrical power subsystem ~~for each train~~ consists of ~~a primary Engineered Safety Feature (ESF) 4.16 kV bus~~ and ~~secondary~~ [480 ~~and 120~~] V ~~buses, distribution panels, motor control centers and load centers~~. Each ~~[4.16 kV ESF bus]~~ has ~~at least~~ [one separate and independent offsite source of power] as well as a dedicated onsite diesel generator (DG) source. Each ~~[4.16 kV ESF bus]~~ is normally connected to a preferred offsite source. ~~After a loss of the preferred offsite power source to a 4.16 kV ESF bus, a transfer to the alternate offsite source is accomplished by utilizing a time delayed bus undervoltage relay.~~ If ~~all~~ offsite source~~s are~~ unavailable, the onsite emergency DG suppl~~ies~~ power to the ~~4.16 kV ESF bus~~. Control power for the ~~4.16 kV~~ breakers is supplied from the Class 1E batteries. Additional description of this system may be found in the Bases for LCO 3.8.1, "AC Sources - Operating," and the Bases for LCO 3.8.4, "DC Sources - Operating." 1 1 2 1 2 1 2 2 1 1 1

6.9 kV Shutdown Boards
Shutdown Boards
train of 6.9 kV Shutdown Boards
6.9 kV Shutdown Board
for each 6.9 kV Shutdown Board
an
is
s
y
affected 6.9 kV Shutdown Boards
6.9 kV Shutdown Board

~~The secondary AC electrical power distribution subsystem for each train includes the safety related buses, load centers, motor control centers, and distribution panels shown in Table B 3.8.9-1.~~ 8 ~~4~~

~~boards~~

instrument power distribution subsystem~~s~~

consists of two Unit 1 120 V AC vital instrument power boards and two Unit 2 120 V AC vital instrument power boards

Each

~~The~~ 120 VAC vital ~~buses~~ ~~are arranged in two load groups per train~~ and are ~~normally~~ powered from the inverters. ~~The alternate power supply for the vital buses are Class 1E constant voltage source transformers powered from the same train as the associated inverter, and its use is governed by LCO 3.8.7, "Inverters - Operating." Each constant voltage source transformer is powered from a Class 1E AC bus.~~ 1

two vital Each 125 V boards

~~The~~ DC electrical power distribution subsystem consists of ~~[~~125~~]~~ V ~~bus(es) and distribution panel(s)~~. 1 2 1

The 125 V vital DC electrical power distribution subsystem has manual access to a fifth vital battery. The fifth vital battery is intended to serve as a replacement for any one of the four 125 V DC vital batteries with no loss of system reliabilty under any mode of operation.

INSERT 3 AC, vital

The list of ~~all required~~ DC and ~~vital~~ AC distribution ~~buses [and panels]~~ is presented in Table B 3.8.9-1. 1 1 2 4

DG DC, subsystems

vital instrument electrical power

electrical power boards and distribution panels required for the

INSERT 6 1

1

INSERT 1

The two units share several structures and systems including the preferred and emergency (standby) electric power systems (UFSAR Chapter 8.0). The vital DC Power System is shared to the extent that a few loads (e.g., the vital inverters) in one nuclear unit are energized by the DC power channels assigned primarily to power loads of the other unit. In no case does the sharing inhibit the safe shutdown of one unit while the other unit is experiencing an accident. The Standby Power System serving each unit is divided into two redundant load groups (power trains). These power trains (Train A and Train B for each unit) supply power to safety-related equipment. Generally, the Engineered Safety Feature (ESF) loads assigned to a unit are supplied by the unit designated trains. For example, Safety Injection (SI) pump 1A-A (associated with Unit 1) is supplied by Shutdown Board 1A-A (also associated with Unit 1) while SI pump 2A-A (associated with Unit 2) is supplied by Shutdown Board 2A-A (also associated with Unit 2).

Separate and similar systems and equipment are provided for each unit when required. In certain instances, both units share systems or some components of a system. Shared systems are the exception to the unit/power system association. Because both units share the power system, one unit's power system(s) supports certain components required by the other unit (e.g., emergency gas treatment system). ~~To show the unit, train, board, and panel association, Table B 3.8.9-1 lists these power system components by train and unit designation.~~

1

INSERT 2

Each electrical power distribution train consists of:
a. an AC electrical power distribution subsystem,
b. an AC vital instrument power distribution subsystem,
c. a vital DC electrical power distribution subsystem, and
d. a diesel generator (DG) DC electrical power distribution subsystem.

~~In addition, each diesel generator (DG) has an associated DC electrical power distribution panel.~~

1

INSERT 3

Each electrical power consists of two DC

s that supply power to the respective DG's auxiliary loads

~~The~~ DG ~~125 Volt~~ DC distribution subsystem ~~includes a~~ 125 V distribution panel ~~for each DG~~. During normal operation, power is supplied to the distribution panel by a 480 VAC board through a battery charger. During emergency operation of the DG (loss of offsite power source), the distribution panel is supplied power from a ~~58 cell~~ battery. This panel supplies power for DG control, protection, and the engine DC lube oil circulating pump.

dedicated

1 INSERT 6

Associated with each board listed in Table B 3.8.9-1 are a number of safety significant electrical loads. When one or more of the boards specified in Table B 3.8.9-1 becomes inoperable, entry into the appropriate ACTIONS of LCO 3.8.9 is required. Some boards, distribution panels, and motor control centers (MCCs), which help comprise the AC and DC electrical power distribution subsystems, are not listed in Table B 3.8.9-1. The loss of electrical loads associated with these boards, panels, or MCCs may not result in a complete loss of a safety function necessary to shut down the reactor and maintain it in a safe condition. Therefore, should one or more of these boards, panels, or MCCs become inoperable due to a failure not affecting the OPERABILITY of a board listed in Table B 3.8.9-1 (e.g., a breaker supplying a single distribution panel fails open), the individual loads associated with the board, panel, or MCC are declared inoperable, and the appropriate Conditions and Required Actions of the LCOs governing the individual loads are entered.

BASES

APPLICABLE SAFETY ANALYSES

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

U | vital | instrument | DG DC, | 1 | 2 | 2 | 1 | 4

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

vital | DG DC, | instrument | electrical | 1 | 4 | 1

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

; | 3

b. A worst case single failure.

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

electrical power | 1

LCO

The required power distribution subsystems listed in Table B 3.8.9-1 ensure the availability of AC, DC, and AC vital ~~bus~~ electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. ~~The AC, DC, and AC vital bus electrical power distribution subsystems are required to be OPERABLE.~~

electrical | vital | instrument | DG DC, | 1 | 1 | 4 | Insert 7 | ~~vital~~ | ~~DG DC,~~ | 1 | 4

Maintaining ~~the Train A and Train B AC, DC, and AC vital bus~~ electrical power distribution ~~subsystems~~ OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Therefore, a single failure within any system or within the electrical power distribution ~~subsystems~~ will not prevent safe shutdown of the reactor.

~~vital~~ | ~~DG DC,~~ | two | trains | trains | 1 | 4 | 4 | 1

OPERABLE AC electrical power distribution subsystems require the associated ~~buses, load centers, motor control centers, and distribution panels~~ to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated ~~buses and distribution panels~~ to be energized to their proper voltage from either the associated battery or charger. OPERABLE vital ~~bus electrical~~ power distribution subsystems require the associated ~~buses~~ to be energized to their proper voltage from the associated ~~[~~inverter via inverted DC voltage, inverter using internal AC source~~, or Class 1E constant voltage transformer]~~.

boards | vital | and DG DC | and distribution panels, as applicable, | instrument | boards | AC | boards | or | 120 volt regulated | 1 | 2

1 4 **INSERT 7**

Two electrical power distribution trains are required to be OPERABLE. Each train includes:

a. an AC electrical power distribution subsystem (i.e., one Unit 1 6.9 kV shutdown board, one Unit 2 6.9 kV shutdown board, and associated 480 V shutdown boards),
b. an AC vital instrument power distribution subsystem (i.e., two Unit 1 120 V AC instrument power boards and two Unit 2 120 V AC instrument power boards),
c. a vital DC electrical power distribution subsystem (i.e., two 125 V DC boards), and
d. a DG DC electrical power distribution subsystem (i.e., two 125 V DG distribution panels).

BASES

LCO (continued)

vital DG DC,

In addition, tie breakers between redundant safety related AC, DC, and AC vital ~~bus~~ power distribution subsystems, if they exist, must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, that could cause the failure of a redundant subsystem and a loss of essential safety function(s). If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E ~~4.16 kV buses~~ from being powered from the same offsite circuit. 1 4 1 1

instrument electrical

6.9 kV Shutdown Boards

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients, and 3

;

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

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown."

ACTIONS

A.1

~~Unit 1~~ ~~boards~~ portions of the

instrument

electrical power distribution subsystems

due to one or more inoperable Unit 1 AC shutdown boards,

With one or more ~~Train A and B~~ ~~required~~ AC ~~buses, load centers, motor control centers, or distribution panels~~ (except AC vital ~~buses~~), ~~in one train~~ inoperable and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the ~~required~~ AC ~~buses, load centers, motor control centers, and distribution panels~~ must be restored to OPERABLE status within 8 hours. 4 1 9 4 1 1 4 1 1

boards

portions of the

Unit 1

~~boards~~

electrical distribution subsystems

case

of Unit 1 boards

Condition A worst scenario is one train without AC power (i.e., no offsite power to the train and the associated DG inoperable). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining train by 4 4

Unit 1

SEQUOYAH UNIT 1 Revision XXX

BASES

ACTIONS (continued)

stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit and

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for DC trains made inoperable by inoperable power distribution subsystems. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Inoperability of ~~a~~ distribution ~~system~~ can result in loss of charging power to batteries and eventual loss of DC power. This Note ensures that the appropriate attention is given to restoring charging power to batteries, if necessary, after loss of distribution systems.

B.1

With one or more AC vital ~~buses~~ inoperable, and a loss of function has not yet occurred, the remaining OPERABLE AC vital ~~buses~~ are capable of supporting the minimum safety functions necessary to shut down the unit and maintain it in the safe shutdown condition. Overall reliability is reduced, however, since an additional single failure could result in the minimum ~~[~~required~~]~~ ESF functions not being supported. Therefore, the ~~required~~ AC vital ~~bus~~ must be restored to OPERABLE status within ~~2~~ hours by powering the ~~bus~~ from the associated ~~[~~inverter via inverted DC~~,~~ inverter using internal AC source~~, or Class 1E constant voltage transformer]~~.

Condition B represents one or more AC vital ~~buses~~ without power; potentially both the DC source and the associated AC source are nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all noninterruptible power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining vital ~~buses~~ and restoring power to the affected vital ~~bus~~.

BASES

ACTIONS (continued)

This ~~2~~ hour limit is more conservative than Completion Times allowed for the vast majority of components that are without adequate vital AC power. Taking exception to LCO 3.0.2 for components without adequate vital AC power, that would have the Required Action Completion Times shorter than ~~2~~ hours if declared inoperable, is acceptable because of:

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) and not allowing stable operations to continue~~,~~

b. The potential for decreased safety by requiring entry into numerous Applicable Conditions and Required Actions for components without adequate vital AC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train~~,~~ and

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

The ~~2~~ hour Completion Time takes into account the importance to safety of restoring the AC vital ~~bus~~ to OPERABLE status, the redundant capability afforded by the ~~other~~ OPERABLE vital ~~buses~~, and the low probability of a DBA occurring during this period.

C.1

With one ~~or more~~ DC ~~buses or distribution panels~~ inoperable, and a loss of function has not yet occurred, the remaining DC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining DC electrical power distribution subsystem could result in the minimum required ESF functions not being supported. Therefore, the ~~[required]~~ DC ~~buses and distribution panels~~ must be restored to OPERABLE status within 2 hours by powering the ~~bus~~ from the associated battery or charger.

Condition C represents one ~~or more~~ DC ~~buses or distribution panels~~ without adequate DC power; potentially both with the battery significantly degraded and the associated charger nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all DC power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining ~~trains~~ and restoring power to the affected ~~train~~.

BASES

ACTIONS (continued)

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

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) while not allowing stable operations to continue~~,~~ ; 5 3

b. The potential for decreased safety by requiring entry into numerous applicable Conditions and Required Actions for components without DC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train~~,~~ ; and 3

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

The 2 hour Completion Time for vital DC electrical power distribution ~~buses~~ subsystems is consistent with Regulatory Guide 1.93 (Ref. 3). 1

INSERT 4

~~D~~ ~~F~~ G.1 and ~~D~~ ~~F~~ G.2 4

If ~~the~~ an inoperable electrical power distribution subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. 1

~~E~~ ~~G~~ H.1 4

Condition ~~E~~ ~~G~~ H corresponds to a level of degradation in the electrical power distribution system that ~~causes~~ results in a loss of ~~required~~ safety function ~~to be lost~~. When more than one inoperable electrical power distribution subsystem results in the loss of a ~~required~~ safety 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. 4 1 1

3.8.9

1 4

INSERT 4

D.1

~~With one or more Unit 2 AC electrical power distribution subsystems (except AC vital) inoperable, the associated required feature(s) must be declared inoperable immediately and the appropriate Condition(s) entered. The Required Actions of these appropriate Conditions will determine the impact of the inoperable Unit 2 AC electrical power distribution subsystem.~~

F ~~E~~.1 electrical power distribution panels affected

With one or more ~~required~~ DG DC ~~subsystems~~ inoperable there is no longer assurance the supported DG(s) is able to start and perform its necessary safety function. The DG(s) must therefore be declared inoperable immediately and the ~~appropriate~~ corresponding Condition(s) entered.

With one or more AC electrical power distribution subsystems (except AC vital instrument boards) inoperable due to one or more inoperable Unit 2 AC shutdown boards and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the associated required feature(s) must be declared inoperable immediately and the corresponding Condition(s) entered. The Required Action(s) of these Condition(s) will determine the impact of the inoperable Unit 2 AC shutdown board(s).

Condition D is modified by two notes that limit the conditions and parameters that allow entry into Condition D. The first note states that Condition D is only applicable during planned maintenance. This will allow the plant configuration to be aligned to minimize features being inoperable when the opposite unit shutdown board is made inoperable. The second note limits the applicability of Condition D to the time period when the opposite unit is either defueled or in MODE 6 following defueled with refueling water cavity level ≥ 23 ft. above the top of the reactor vessel flange. This note limits the time period allowing Condition D to be entered, minimizing when the allowance can be utilized. The allowance for Condition D is acceptable based on the following:

a. The opposite unit's AC shutdown boards are not as critical to the operating unit (fewer operating unit loads) as the operating unit's AC shutdown boards.

b. Performing maintenance on these components will increase the reliability of the Class 1E AC Electrical Power Distribution System.

c. The Required Actions associated with the features declared inoperable provide compensatory measures during the performance of the planned maintenance.

d. The limited opportunities that allow the planned maintenance to occur.

During the planned maintenance of the Unit 2 AC shutdown boards, if a condition is discovered on these boards requiring corrective maintenance, this maintenance may be performed under Condition D.

E.1

With one or more AC electrical power distribution subsystems (except AC vital instrument boards) inoperable due to one or more inoperable Unit 2 AC shutdown boards for reasons other than Condition D and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the inoperable Unit 2 AC electrical power distribution subsystem(s) must be returned to OPERABLE status within 24 hours. The 24 hour time limit before requiring a unit shutdown in this Condition is acceptable because the opposite unit's AC shutdown boards are not as critical to the operating unit (fewer operating unit loads) as the operating unit's AC shutdown boards.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

instrument

vital DG DC,

sub

This Surveillance verifies that the [required] AC, DC, and AC vital ~~bus~~ electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical ~~divisions~~ is maintained, and the appropriate voltage is available to each required ~~bus~~. The verification of proper voltage availability on the ~~buses~~ ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these ~~buses~~. ~~[The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~

power distribution trains

board

boards

2 1 4

1

6

~~OR~~

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

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

7

REFERENCES

1. U FSAR, Chapter [6].
2. U FSAR, Chapter [15].
3. Regulatory Guide 1.93, December 1974.

1 2

Safety Related Onsite

Table B 3.8.9-1 (page 1 of 1)
AC and DC Electrical Power Distribution Systems

INSERT 5

~~TYPE~~	~~VOLTAGE~~	~~TRAIN A*~~	~~TRAIN B*~~
~~AC safety buses~~	~~[4160 V]~~	~~[ESF Bus] [NB01]~~	~~[ESF Bus] [NB02]~~
	~~[480 V]~~	~~Load Centers [NG01, NG03]~~	~~Load Centers [NG02, NG04]~~
	~~[480 V]~~	~~Motor Control Centers [NG01A, NG01I, NG01B, NG03C, NG03I, NG03D]~~	~~Motor Control Centers [NG02A, NG02I, NG02B, NG04C, NG04I, NG04D]~~
	~~[120 V]~~	~~Distribution Panels [NP01, NP03]~~	~~Distribution Panels [NP02, NP04]~~
~~DC buses~~	~~[125 V]~~	~~Bus [NK01]~~	~~Bus [NK02]~~
		~~Bus [NK03]~~	~~Bus [NK04]~~
		~~Distribution Panels [NK41, NK43, NK51]~~	~~Distribution Panels [NK42, NK44, NK52]~~
~~AC vital buses~~	~~[120 V]~~	~~Bus [NN01]~~	~~Bus [NN02]~~
		~~Bus [NN03]~~	~~Bus [NN04]~~

1

~~* Each train of the AC and DC electrical power distribution systems is a subsystem.~~ 1

1 **INSERT 5**

TYPE	VOLTAGE (nominal)	SR 3.8.9.1 Voltage Range	TRAIN A~~*~~ SUBSYSTEMS		TRAIN B~~*~~ SUBSYSTEMS	
Vital DC ~~battery boards~~ electrical power	125 V	≥ 129 V and ≤ 140 V	Board I	Board III	Board II	Board IV
AC ~~safety boards~~ electrical power	6900 V 480 V	≥ 6560 V and ≤ 7260 V ≥ 440 V and ≤ 508 V	<u>Unit 1</u> SD BD 1A-A SD BD 1A1-A 1A2-A ~~Rx MOV Bd 1A1-A 1A2-A~~ ~~C & A Vent Bd 1A1-A~~ ~~Diesel Aux Bd 1A1-A 1A2-A~~ ~~ERCW MCC 1A-A~~	<u>Unit 2</u> SD BD 2A-A SD BD 2A1-A 2A2-A ~~Rx MOV Bd 2A1-A 2A2-A~~ ~~C & A Vent Bd 2A1-A~~ ~~Diesel Aux Bd 2A1-A 2A2-A~~ ~~ERCW MCC 2A-A~~	<u>Unit 1</u> SD BD 1B-B SD BD 1B1-B 1B2-B ~~Rx MOV Bd 1B1-B 1B2-B~~ ~~C & A Vent Bd 1B1-B~~ ~~Diesel Aux Bd 1B1-B 1B2-B~~ ~~ERCW MCC 1B-B~~	<u>Unit 2</u> SD BD 2B-B SD BD 2B1-B 2B2-B ~~Rx MOV Bd 2B1-B 2B2-B~~ ~~C & A Vent Bd 2B1-B~~ ~~Diesel Aux Bd 2B1-B 2B2-B~~ ~~ERCW MCC 2B-B~~
AC vital instrument power ~~boards~~ electrical	120 V	≥ 120.6 V and ≤ 126.6 V	<u>Unit 1</u> Board 1-I Board 1-III	<u>Unit 2</u> Board 2-I Board 2-III	<u>Unit 1</u> Board 1-II Board 1-IV	<u>Unit 2</u> Board 2-II Board 2-IV
DG DC ~~boards~~ electrical power	125 V	≥ 124 V and ≤ 135 V	DG 1A-A Dist. Pnl.	DG 2A-A Dist. Pnl.	DG 1B-B Dist. Pnl.	DG 2B-B Dist. Pnl.

This page is replaced by Revised Insert 5. Changes made to INSERT 5 are illustrated on this page. Insertions are indicated by a text box with an arrow. Deletions are indicated with lines drawn through deleted text and highlighting. The subsystems in ITS Table B 3.8.9-1 have been reordered to align with the order of their description in the Bases Background Section.

1 REVISED INSERT 5

TYPE	VOLTAGE (nominal)	SR 3.8.9.1 Voltage Range	TRAIN A SUBSYSTEMS		TRAIN B SUBSYSTEMS	
			Unit 1	Unit 2	Unit 1	Unit 2
AC electrical power	6900 V	≥ 6560 V and ≤ 7260 V	SD BD 1A-A	SD BD 2A-A	SD BD 1B-B	SD BD 2B-B
	480 V	≥ 440 V and ≤ 508 V	SD BD 1A1-A 1A2-A	SD BD 2A1-A 2A2-A	SD BD 1B1-B 1B2-B	SD BD 2B1-B 2B2-B
			Unit 1	Unit 2	Unit 1	Unit 2
AC vital instrument electrical power	120 V	≥ 120.6 V and ≤ 126.6 V	Board 1-I Board 1-III	Board 2-I Board 2-III	Board 1-II Board 1-IV	Board 2-II Board 2-IV
Vital DC electrical power	125 V	≥ 129 V and ≤ 140 V	Board I	Board III	Board II	Board IV
DG DC electrical power	125 V	≥ 124 V and ≤ 135 V	DG 1A-A Dist. Pnl.	DG 2A-A Dist. Pnl.	DG 1B-B Dist. Pnl.	DG 2B-B Dist. Pnl.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

DG DC, instrument INSERT 1 1

BASES

vital

BACKGROUND

The onsite Class 1E AC, DC, and AC vital ~~bus~~ electrical power distribution systems are divided ~~by train~~ into [two] redundant and independent ~~AC, DC, and AC vital bus electrical power distribution subsystems.~~ INSERT 2 ~~vital~~ 1 2 1 1 1

trains

Each

four two

~~The~~ AC electrical power subsystem ~~for each train~~ consists of ~~a primary Engineered Safety Feature (ESF) 4.16 kV bus~~ and ~~secondary~~ [480 ~~and 120~~] V ~~buses, distribution panels, motor control centers and load centers~~. Each ~~[4.16 kV ESF bus]~~ has ~~at least~~ [one separate and independent offsite source of power] as well as a dedicated onsite diesel generator (DG) source. Each ~~[4.16 kV ESF bus]~~ is normally connected to a preferred offsite source. ~~After a loss of the preferred offsite power source to a 4.16 kV ESF bus, a transfer to the alternate offsite source is accomplished by utilizing a time delayed bus undervoltage relay.~~ If ~~all~~ offsite source~~s~~ ~~are~~ unavailable, the onsite emergency DG suppl~~ies~~ power to the ~~4.16 kV ESF bus~~. Control power for the ~~4.16 kV~~ breakers is supplied from the Class 1E batteries. Additional description of this system may be found in the Bases for LCO 3.8.1, "AC Sources - Operating," and the Bases for LCO 3.8.4, "DC Sources - Operating." 1 2 1 2 1 2 2 1 1 1

6.9 kV Shutdown Boards

Shutdown Boards

train of 6.9 kV Shutdown Boards

6.9 kV Shutdown Board

for each 6.9 kV Shutdown Board

an is s y

affected 6.9 kV Shutdown Boards

6.9 kV Shutdown Board

~~The secondary AC electrical power distribution subsystem for each train includes the safety related buses, load centers, motor control centers, and distribution panels~~ shown in Table B 3.8.9-1. 8 ~~4~~

~~boards~~

consists of two Unit 1 120 V AC vital instrument power boards and two Unit 2 120 V AC vital instrument power boards

instrument power distribution subsystems

Each

~~The~~ 120 VAC vital ~~buses~~ ~~are arranged in two load groups per train~~ and are ~~normally~~ powered from the inverters. ~~The alternate power supply for the vital buses are Class 1E constant voltage source transformers powered from the same train as the associated inverter, and its use is governed by LCO 3.8.7, "Inverters - Operating." Each constant voltage source transformer is powered from a Class 1E AC bus.~~ 1

two

vital

Each 125 V

The 125 V vital DC electrical power distribution subsystem has manual access to a fifth vital battery. The fifth vital battery is intended to serve as a replacement for any one of the four 125 V DC vital batteries with no loss of system reliabilty under any mode of operation.

boards

~~The~~ DC electrical power distribution subsystem consists of [125] V ~~bus(es) and distribution panel(s)~~. 1 2 1 1

INSERT 3

AC, vital

The list of ~~all required~~ DC and ~~vital~~ AC distribution ~~buses [and panels]~~ is presented in Table B 3.8.9-1. 1 2 4

subsystems

DG DC,

vital instrument electrical power

electrical power boards and distribution panels required for the

INSERT 6 1

1

INSERT 1

The two units share several structures and systems including the preferred and emergency (standby) electric power systems (UFSAR Chapter 8.0). The vital DC Power System is shared to the extent that a few loads (e.g., the vital inverters) in one nuclear unit are energized by the DC power channels assigned primarily to power loads of the other unit. In no case does the sharing inhibit the safe shutdown of one unit while the other unit is experiencing an accident. The Standby Power System serving each unit is divided into two redundant load groups (power trains). These power trains (Train A and Train B for each unit) supply power to safety-related equipment. Generally, the Engineered Safety Feature (ESF) loads assigned to a unit are supplied by the unit designated trains. For example, Safety Injection (SI) pump 1A-A (associated with Unit 1) is supplied by Shutdown Board 1A-A (also associated with Unit 1) while SI pump 2A-A (associated with Unit 2) is supplied by Shutdown Board 2A-A (also associated with Unit 2).

Separate and similar systems and equipment are provided for each unit when required. In certain instances, both units share systems or some components of a system. Shared systems are the exception to the unit/power system association. Because both units share the power system, one unit's power system(s) supports certain components required by the other unit (e.g., emergency gas treatment system). ~~To show the unit, train, board, and panel association, Table B 3.8.9-1 lists these power system components by train and unit designation.~~

Each electrical power distribution train consists of:
a. an AC electrical power distribution subsystem,
b. an AC vital instrument power distribution subsystem,
c. a vital DC electrical power distribution subsystem, and
d. a diesel generator (DG) DC electrical power distribution subsystem.

1

INSERT 2

~~In addition, each diesel generator (DG) has an associated DC electrical power distribution panel.~~

1

INSERT 3

Each

electrical power

consists of two

DC

s that supply power to the respective DG's auxiliary loads

~~The~~ DG ~~125 Volt~~ DC distribution subsystem ~~includes a~~ 125 V distribution panel ~~for each DG~~. During normal operation, power is supplied to the distribution panel by a 480 VAC board through a battery charger. During emergency operation of the DG (loss of offsite power source), the distribution panel is supplied power from a ~~58 cell~~ battery. This panel supplies power for DG control, protection, and the engine DC lube oil circulating pump.

dedicated

1 INSERT 6

Associated with each board listed in Table B 3.8.9-1 are a number of safety significant electrical loads. When one or more of the boards specified in Table B 3.8.9-1 becomes inoperable, entry into the appropriate ACTIONS of LCO 3.8.9 is required. Some boards, distribution panels, and motor control centers (MCCs), which help comprise the AC and DC electrical power distribution subsystems, are not listed in Table B 3.8.9-1. The loss of electrical loads associated with these boards, panels, or MCCs may not result in a complete loss of a safety function necessary to shut down the reactor and maintain it in a safe condition. Therefore, should one or more of these boards, panels, or MCCs become inoperable due to a failure not affecting the OPERABILITY of a board listed in Table B 3.8.9-1 (e.g., a breaker supplying a single distribution panel fails open), the individual loads associated with the board, panel, or MCC are declared inoperable, and the appropriate Conditions and Required Actions of the LCOs governing the individual loads are entered.

BASES

APPLICABLE SAFETY ANALYSES

U vital instrument DG DC, 1 2 2 1 4

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

vital DG DC, instrument electrical 1 4 1

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

a. An assumed loss of all offsite power or all onsite AC electrical power, and 3

;

b. A worst case single failure.

electrical power

The distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). 1

LCO

electrical DG DC, vital instrument 1 1 4

The required power distribution subsystems listed in Table B 3.8.9-1 ensure the availability of AC, DC, and AC vital ~~bus~~ electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. ~~The AC, DC, and AC vital bus electrical power distribution subsystems are required to be OPERABLE.~~

~~vital~~ ~~DG DC,~~ Insert 7 1 4

~~vital~~ ~~DG DC,~~ two trains 1 4 4

Maintaining ~~the Train A and Train B AC, DC, and AC vital~~ ~~bus~~ electrical power distribution ~~subsystems~~ OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Therefore, a single failure within any system or within the electrical power distribution ~~subsystems~~ will not prevent safe shutdown of the reactor.

trains 1

boards vital and DG DC and distribution panels, as applicable, instrument boards AC boards or 120 volt regulated 1 2

OPERABLE AC electrical power distribution subsystems require the associated ~~buses, load centers, motor control centers, and distribution panels~~ to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated ~~buses and distribution panels~~ to be energized to their proper voltage from either the associated battery or charger. OPERABLE vital ~~bus electrical~~ power distribution subsystems require the associated ~~buses~~ to be energized to their proper voltage from the associated ~~[~~inverter via inverted DC voltage, inverter using internal AC source~~, or Class 1E constant voltage transformer]~~.

1 4 **INSERT 7**

Two electrical power distribution trains are required to be OPERABLE. Each train includes:

a. an AC electrical power distribution subsystem (i.e., one Unit 1 6.9 kV shutdown board, one Unit 2 6.9 kV shutdown board, and associated 480 V shutdown boards),
b. an AC vital instrument power distribution subsystem (i.e., two Unit 1 120 V AC instrument power boards and two Unit 2 120 V AC instrument power boards),
c. a vital DC electrical power distribution subsystem (i.e., two 125 V DC boards), and
d. a DG DC electrical power distribution subsystem (i.e., two 125 V DG distribution panels).

BASES

LCO (continued)

vital DG DC, 1 4

instrument electrical

In addition, tie breakers between redundant safety related AC, DC, and AC vital ~~bus~~ power distribution subsystems, if they exist, must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, that could cause the failure of a redundant subsystem and a loss of essential safety function(s). If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E ~~4.16 kV buses~~ 6.9 kV Shutdown Boards from being powered from the same offsite circuit. 1 1

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients ; and 3

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

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown."

ACTIONS

A.1

~~Unit 2~~ ~~boards~~ portions of the

instrument

electrical power distribution subsystems

due to one or more inoperable Unit 2 AC shutdown boards,

With one or more ~~Train A and B~~ ~~required~~ AC ~~buses, load centers, motor control centers, or distribution panels~~ (except AC vital ~~buses~~ boards), ~~in one train~~ inoperable and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the ~~required~~ Unit 2 AC ~~buses, load centers, motor control centers, and distribution panels~~ must be restored to OPERABLE status within 8 hours. 4 1 9 4 1 1 4 1 1

portions of the

~~boards~~

electrical distribution subsystems

case

of Unit 2 boards

Condition A worst scenario is one train without AC power (i.e., no offsite power to the train and the associated DG inoperable). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining Unit 2 train by 4 4

BASES

ACTIONS (continued)

stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit ; and 3

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for vital DC electrical power trains made inoperable by inoperable AC electrical power distribution subsystems. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Inoperability of ~~a~~ one or more AC electrical power distribution subsystems ~~system~~ can result in loss of charging power to batteries and eventual loss of DC power. This Note ensures that the appropriate attention is given to restoring charging power to batteries, if necessary, after loss of distribution subsystems. 1 1 4 1 1 1

B.1

With one or more AC vital instrument power distribution ~~buses~~ subsystems inoperable, and a loss of function has not yet occurred, the remaining OPERABLE portions of the AC vital instrument power distribution ~~buses~~ subsystems are capable of supporting the minimum safety functions necessary to shut down the unit and maintain it in the safe shutdown condition. Overall reliability is reduced, however, since an additional single failure could result in the minimum ~~[~~required~~]~~ ESF functions not being supported. Therefore, the ~~required~~ affected AC vital instrument power distribution ~~bus~~ subsystem(s) must be restored to OPERABLE status within ~~2~~ 8 hours by powering the ~~bus~~ subsystems from the associated ~~[~~inverter via inverted DC~~,~~ or inverter using internal 120 volt regulated AC source~~, or Class 1E constant voltage transformer]~~. 1 2 1 1 2

Condition B represents one or more AC vital instrument power distribution ~~buses~~ subsystems without power; potentially both the DC source and the associated AC source are nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all noninterruptible power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining vital instrument power boards ~~subsystems~~ ~~buses~~ and restoring power to the affected vital instrument power boards ~~subsystem~~ ~~bus~~. 1 1 1

BASES

ACTIONS (continued)

This ~~2~~ 8 hour limit is more conservative than Completion Times allowed for the vast majority of components that are without adequate vital AC power. Taking exception to LCO 3.0.2 for components without adequate vital AC power, that would have the Required Action Completion Times shorter than ~~2~~ 8 hours if declared inoperable, is acceptable because of: 1 1

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) and not allowing stable operations to continue~~,~~; 3

b. The potential for decreased safety by requiring entry into numerous Applicable Conditions and Required Actions for components without adequate vital AC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train~~,~~; and 3

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

The ~~2~~ 8 hour Completion Time takes into account the importance to safety of restoring the AC vital ~~bus~~ instrument power distribution subsystems to OPERABLE status, the redundant capability afforded by the ~~other~~ remaining OPERABLE AC vital ~~buses~~ instrument power boards ~~subsystems~~, and the low probability of a DBA occurring during this period. 1

C.1

STET

With one ~~or more~~ vital DC ~~buses or distribution panels~~ electrical power distribution subsystems inoperable, and a loss of function has not yet occurred, the remaining portions of the vital 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 portions of the vital DC electrical power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the ~~[required]~~ vital DC ~~buses and distribution panels~~ subsystems must be restored to OPERABLE status within 2 hours by powering the ~~bus~~ subsystem from the associated battery or charger. 4 1 2

STET

Condition C represents one ~~or more~~ vital DC ~~buses or distribution panels~~ electrical power distribution subsystems without adequate DC power; potentially both with the battery significantly degraded and the associated charger nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all DC power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining ~~trains~~ panels and restoring power to the affected ~~train~~ panels. 1 1

BASES

ACTIONS (continued)

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

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) while not allowing stable operations to continue~~,~~ ; 5 3

b. The potential for decreased safety by requiring entry into numerous applicable Conditions and Required Actions for components without DC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train~~,~~ ; and 3

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

The 2 hour Completion Time for vital DC ~~buses~~ electrical power distribution subsystems is consistent with Regulatory Guide 1.93 (Ref. 3). 1

INSERT 4

~~D~~ ~~F~~ G.1 and ~~D~~ ~~F~~ G.2 4

If ~~the~~ an inoperable electrical power distribution subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. 1

~~E~~ ~~G~~ H.1 4

Condition ~~E~~ ~~G~~ H corresponds to a level of degradation in the electrical power distribution system that ~~causes~~ results in a loss of ~~required~~ safety function ~~to be lost~~. When more than one inoperable electrical power distribution subsystem results in the loss of a ~~required~~ safety 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. 4 1 1

1 4

INSERT 4

D.1

~~With one or more Unit 1 AC electrical power distribution subsystems (except AC vital) inoperable, the associated required feature(s) must be declared inoperable immediately and the appropriate Condition(s) entered. The Required Actions of these appropriate Conditions will determine the impact of the inoperable Unit 1 AC electrical power distribution subsystem.~~

electrical power distribution panels

F ~~E~~.1

affected

With one or more ~~required~~ DG DC ~~subsystems~~ inoperable there is no longer assurance the supported DG(s) is able to start and perform its necessary safety function. The affected DG(s) must therefore be declared inoperable immediately and the ~~appropriate~~ corresponding Condition(s) entered.

With one or more AC electrical power distribution subsystems (except AC vital instrument boards) inoperable due to one or more inoperable Unit 1 AC shutdown boards and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the associated required feature(s) must be declared inoperable immediately and the corresponding Condition(s) entered. The Required Action(s) of these Condition(s) will determine the impact of the inoperable Unit 1 AC shutdown board(s).

Condition D is modified by two notes that limit the conditions and parameters that allow entry into Condition D. The first note states that Condition D is only applicable during planned maintenance. This will allow the plant configuration to be aligned to minimize features being inoperable when the opposite unit shutdown board is made inoperable. The second note limits the applicability of Condition D to the time period when the opposite unit is either defueled or in MODE 6 following defueled with refueling water cavity level ≥ 23 ft. above the top of the reactor vessel flange. This note limits the time period allowing Condition D to be entered, minimizing when the allowance can be utilized. The allowance for Condition D is acceptable based on the following:

a. The opposite unit's AC shutdown boards are not as critical to the operating unit (fewer operating unit loads) as the operating unit's AC shutdown boards.

b. Performing maintenance on these components will increase the reliability of the Class 1E AC Electrical Power Distribution System.

c. The Required Actions associated with the features declared inoperable provide compensatory measures during the performance of the planned maintenance.

d. The limited opportunities that allow the planned maintenance to occur.

During the planned maintenance of the Unit 1 AC shutdown boards, if a condition is discovered on these boards requiring corrective maintenance, this maintenance may be performed under Condition D.

E.1

With one or more AC electrical power distribution subsystems (except AC vital instrument boards) inoperable due to one or more inoperable Unit 1 AC shutdown boards for reasons other than Condition D and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the inoperable Unit 1 AC electrical power distribution subsystem(s) must be returned to OPERABLE status within 24 hours. The 24 hour time limit before requiring a unit shutdown in this Condition is acceptable because the opposite unit's AC shutdown boards are not as critical to the operating unit (fewer operating unit loads) as the operating unit's AC shutdown boards.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

vital sub DG DC, instrument

This Surveillance verifies that the [required] AC, DC, and AC vital ~~bus~~ electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical ~~divisions~~ power distribution trains is maintained, and the appropriate voltage is available to each required ~~bus~~ board. The verification of proper voltage availability on the ~~buses~~ boards ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these ~~buses~~. ~~[The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~

~~OR~~

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

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

2 1 4
1
6
7

REFERENCES

1. U FSAR, Chapter [6].
2. U FSAR, Chapter [15].
3. Regulatory Guide 1.93, December 1974.

1 2

Safety Related Onsite

Table B 3.8.9-1 (page 1 of 1)
~~Safety Related Onsite~~ AC and DC Electrical Power Distribution Systems

INSERT 5

~~TYPE~~	~~VOLTAGE~~	~~TRAIN A*~~	~~TRAIN B*~~
~~AC safety buses~~	~~[4160 V]~~	~~[ESF Bus] [NB01]~~	~~[ESF Bus] [NB02]~~
	~~[480 V]~~	~~Load Centers [NG01, NG03]~~	~~Load Centers [NG02, NG04]~~
	~~[480 V]~~	~~Motor Control Centers [NG01A, NG01I, NG01B, NG03C, NG03I, NG03D]~~	~~Motor Control Centers [NG02A, NG02I, NG02B, NG04C, NG04I, NG04D]~~
	~~[120 V]~~	~~Distribution Panels [NP01, NP03]~~	~~Distribution Panels [NP02, NP04]~~
~~DC buses~~	~~[125 V]~~	~~Bus [NK01]~~	~~Bus [NK02]~~
		~~Bus [NK03]~~	~~Bus [NK04]~~
		~~Distribution Panels [NK41, NK43, NK51]~~	~~Distribution Panels [NK42, NK44, NK52]~~
~~AC vital buses~~	~~[120 V]~~	~~Bus [NN01]~~	~~Bus [NN02]~~
		~~Bus [NN03]~~	~~Bus [NN04]~~

1

~~* Each train of the AC and DC electrical power distribution systems is a subsystem.~~ 1

1 **INSERT 5**

TYPE	VOLTAGE (nominal)	SR 3.8.9.1 Voltage Range	TRAIN A~~*~~ SUBSYSTEMS		TRAIN B~~*~~ SUBSYSTEMS	
Vital DC ~~battery boards~~ electrical power	125 V	≥ 129 V and ≤ 140 V	Board I	Board III	Board II	Board IV
AC ~~safety boards~~ electrical power			Unit 1	Unit 2	Unit 1	Unit 2
	6900 V	≥ 6560 V and ≤ 7260 V	SD BD 1A-A	SD BD 2A-A	SD BD 1B-B	SD BD 2B-B
	480 V	≥ 440 V and ≤ 508 V	SD BD 1A1-A 1A2-A	SD BD 2A1-A 2A2-A	SD BD 1B1-B 1B2-B	SD BD 2B1-B 2B2-B
			~~Rx MOV Bd 1A1-A 1A2-A~~	~~Rx MOV Bd 2A1-A 2A2-A~~	~~Rx MOV Bd 1B1-B 1B2-B~~	~~Rx MOV Bd 2B1-B 2B2-B~~
			~~C & A Vent Bd 1A1-A~~	~~C & A Vent Bd 2A1-A~~	~~C & A Vent Bd 1B1-B~~	~~C & A Vent Bd 2B1-B~~
			~~Diesel Aux Bd 1A1-A 1A2-A~~	~~Diesel Aux Bd 2A1-A 2A2-A~~	~~Diesel Aux Bd 1B1-B 1B2-B~~	~~Diesel Aux Bd 2B1-B 2B2-B~~
			~~ERCW MCC 1A-A~~	~~ERCW MCC 2A-A~~	~~ERCW MCC 1B-B~~	~~ERCW MCC 2B-B~~
AC vital instrument electrical power ~~boards~~	120 V	≥ 120.6 V and ≤ 126.6 V	Unit 1 Board 1-I Board 1-III	Unit 2 Board 2-I Board 2-III	Unit 1 Board 1-II Board 1-IV	Unit 2 Board 2-II Board 2-IV
DG DC ~~boards~~ electrical power	125 V	≥ 124 V and ≤ 135 V	DG 1A-A Dist. Pnl.	DG 2A-A Dist. Pnl.	DG 1B-B Dist. Pnl.	DG 2B-B Dist. Pnl.

This page is replaced by Revised Insert 5. Changes made to INSERT 5 are illustrated on this page. Insertions are indicated by a text box with an arrow. Deletions are indicated with lines drawn through deleted text and highlighting. The subsystems in ITS Table B 3.8.9-1 have been reordered to align with the order of their description in the Bases Background Section.

Insert Page B 3.8.9-8

1 REVISED INSERT 5

TYPE	VOLTAGE (nominal)	SR 3.8.9.1 Voltage Range	TRAIN A SUBSYSTEMS		TRAIN B SUBSYSTEMS	
AC electrical power			Unit 1	Unit 2	Unit 1	Unit 2
	6900 V	≥ 6560 V and ≤ 7260 V	SD BD 1A-A	SD BD 2A-A	SD BD 1B-B	SD BD 2B-B
	480 V	≥ 440 V and ≤ 508 V	SD BD 1A1-A 1A2-A	SD BD 2A1-A 2A2-A	SD BD 1B1-B 1B2-B	SD BD 2B1-B 2B2-B
AC vital instrument electrical power	120 V	≥ 120.6 V and ≤ 126.6 V	Unit 1 Board 1-I Board 1-III	Unit 2 Board 2-I Board 2-III	Unit 1 Board 1-II Board 1-IV	Unit 2 Board 2-II Board 2-IV
Vital DC electrical power	125 V	≥ 129 V and ≤ 140 V	Board I	Board III	Board II	Board IV
DG DC electrical power	125 V	≥ 124 V and ≤ 135 V	DG 1A-A Dist. Pnl.	DG 2A-A Dist. Pnl.	DG 1B-B Dist. Pnl.	DG 2B-B Dist. Pnl.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9 BASES, DISTRIBUTION SYSTEMS - OPERATING

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

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

3. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

4. Changes are made to be consistent with changes made to the Specification.

5. Editorial changes made for enhanced clarity.

6. ISTS SR 3.8.9.1 provides two options for controlling the Frequencies of Surveillance Requirements. SQN is proposing to control the Surveillance Frequencies under the Surveillance Frequency Control Program. Therefore, the Frequency for ITS SR 3.8.9.1 is "In accordance with the Surveillance Frequency Control Program."

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

8. This redundant information has been deleted. Following the description of the electrical power distribution subsystems is a statement that a list of all boards and distribution panels is found in Table B 3.8.9-1.

9. Changes are made to ISTS 3.8.9 Bases Action A.1 to resolve a conflict within the first sentence. The first sentence states that, "With <u>one or more</u> Train A <u>and</u> B required AC buses, load centers, motor control centers, or distribution panels (except AC vital buses), <u>in one train</u> inoperable and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure." ISTS 3.8.9 Condition A states, "One or more AC electrical power distribution subsystems inoperable." ISTS 3.8.9 Condition E states, "Two or more electrical power distribution subsystems inoperable that result in a loss of safety function." Both Condition A and Condition E address a situation with more than one electrical power distribution subsystem inoperable. According to ITS Chapter 1.0, Use and Application, all applicable Conditions are required to be entered for an LCO. If it is discovered that the inoperability of more than one electrical power distribution subsystem results in a loss of safety function, then entry into ISTS 3.8.9 Conditions A and E would be required. If it is discovered that the inoperability does not result in a loss of safety function, then entry into ISTS 3.8.9 Condition A is all that is required regardless of the number of inoperable trains. ISTS 3.8.9 Condition A provides Required Actions if one or more AC electrical power distribution subsystems are inoperable and a loss of safety function has not occurred. It is not the intent of ISTS 3.8.9 Condition A to be applicable to only one inoperable train of AC electrical power distribution subsystems. Therefore, the phrase, "in one train," has been deleted.

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

operation of the facility in accordance with this proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's onsite electrical distribution system. The margin of safety is not affected by this change because the minimum requirements for onsite electrical distribution systems will be maintained to ensure the availability of the required power to shutdown the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Therefore, the proposed changes do not involve a significant reduction in a margin of safety

Add INSERT 1

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INSERT 1

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L03

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

CTS 3.8.2.1 ACTION a requires that with less than the listed AC electrical boards OPERABLE and energized to restore the inoperable boards to OPERABLE status within 8 hours. ITS LCO 3.8.9 ACTION A requires that with one or more AC electrical power distribution subsystems inoperable due to one or more of the associated unit's AC shutdown boards inoperable to restore the associated unit's AC electrical power distribution subsystem(s) to OPERABLE status within 8 hours. ITS 3.8.9 ACTION D requires that with one or more AC electrical power distribution subsystem(s) inoperable due to one or more opposite unit AC shutdown boards inoperable to declare the associated required feature(s) inoperable immediately. ITS 3.8.9 Action D is only applicable during planned maintenance when the opposite unit is defueled or in MODE 6 following defueled with the opposite unit refueling water level ≥23 feet above top of the reactor vessel flange. ITS 3.8.9 ACTION E requires that with one or more AC electrical power distribution subsystems inoperable due to one or more opposite unit AC shutdown boards inoperable for reasons other than Condition D to restore the opposite unit's AC electrical power distribution subsystem(s) to OPERABLE status in 24 hours. This changes the CTS by providing a new ACTION that extends the time allowed to restore to OPERABLE status the AC electrical power distribution subsystem(s) made inoperable due to the opposite unit's AC shutdown boards for other than planned maintenance from 8 hours to 24 hours.

The safety function of the Standby AC Power System is to supply power to support the functioning of components and systems required to assure that (1) fuel design limits and reactor coolant pressure boundary design conditions are not exceeded due to anticipated operational occurrences, and (2) the core is cooled and vital functions are maintained in the event of postulated accidents, subject to loss of the Preferred Power System and subject to any single failure in the Standby Power System. To accomplish its safety function, the onsite Class 1E AC distribution system supplies electrical power to two power trains for each unit. Each power train includes two Class 1E 6.9 kV shutdown boards powered from one of two separate and independent offsite power circuits or a dedicated onsite DG. Two DGs in one train can provide the safety related functions to mitigate a loss-of-coolant accident (LOCA) in one unit and safely shut down the other unit. The major core cooling and containment cooling system loads are unitized to the respective unit's 6.9 kV shutdown boards. Although the major core cooling systems and containment systems credited in the mitigation of an anticipated operational occurrence (AOO) or postulated Design Basis Accident (DBA) are unitized (not shared with the opposite unit) and powered from the associated unit's shutdown boards, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment (ABGTS), Control Room Emergency Ventilation (CREVS), and Control Room Air Conditioning (CRACS)) are shared between the units. The AC sources for these loads are supplied from an A train and B train AC shutdown boards from a single unit.

Therefore, in addition to requiring the associated unit's boards to be OPERABLE, the opposite unit's boards supplying power to both trains of required shared system components are also required to be OPERABLE. The purpose of CTS 3.8.2.1 ACTION a is to limit the time AC boards can be inoperable. The proposed change maintains the CTS ACTIONs and allowed outage time for the associated unit's AC shutdown boards, and proposes a new ITS ACTION E that changes the allowed outage time from 8 hours to 24 hours for the opposite unit's AC shutdown boards that are inoperable for reasons other than planned maintenance. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the 24 hour limit for the AC electrical power distribution subsystems made inoperable due to the opposite unit’s AC shutdown boards is more conservative than Completion Times allowed for the components that would be without power. This change is designated as less restrictive, because additional time is allowed to restore the OPERABILITY of the AC electrical power distribution subsystem(s) when the AC electrical power distribution subsystems are inoperable due to the opposite unit’s AC shutdown boards under the ITS than under the CTS.

Tennessee Valley Authority (TVA) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The proposed change relaxes the ACTIONs for the opposite unit's distribution system. This change will not affect the probability of an accident, since the distribution system is not an initiator of any accident sequence analyzed in the Updated Final Safety Analysis Report (UFSAR). Rather, the opposite unit's distribution system supports equipment used to mitigate accidents. The consequences of an analyzed accident will not be increased since the minimum requirements for distribution systems will be maintained to ensure the availability of the required power to mitigate accidents assumed in the UFSAR. Operation in accordance with the proposed TS will ensure that sufficient onsite electrical distribution systems are OPERABLE as required to support the unit's required features. Therefore, the mitigating functions supported by the onsite electrical distribution systems will continue to provide the protection assumed by the accident analysis. The integrity of fission product barriers, plant configuration, and operating procedures as described in the UFSAR will not be affected by the proposed changes. Thus, the consequences of previously analyzed accidents will not increase by implementing these changes. Therefore, the proposed changes do not involve an increase in the probability or consequences of an accident previously evaluated.

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

Response: No

The proposed change relaxes the ACTIONs for the opposite unit's onsite electrical distribution systems. This change will not physically alter the plant (no new or different type of equipment will be installed). The proposed change will maintain the minimum requirements for onsite electrical distribution systems to ensure the availability of the equipment required to mitigate accidents assumed in the UFSAR. Therefore, operation of the facility in accordance with this proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change relaxes the ACTIONs for the opposite unit's onsite electrical distribution system. The margin of safety is not affected by this change because the minimum requirements for onsite electrical distribution systems will be maintained to ensure the availability of the required power to shutdown the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Therefore, the proposed changes do not involve a significant reduction in a margin of safety

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

ADMINISTRATIVE CHANGES

A01 In the conversion of the Sequoyah Nuclear Plant (SQN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 4.0, "Standard Technical Specifications - Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.8.1.2.b.5 requires, in part, a separate and independent 125 volt DC distribution panel for diesel generator (DG) OPERABILITY. ITS 3.8.10 ACTION B requires for one or more inoperable DG DC electrical power distribution panels ~~subsystems~~ to immediately declare the associated DG inoperable. This changes the CTS by specifying an Action to declare a DG inoperable if its associated DC electrical power distribution panel ~~subsystem~~ is inoperable.

The purpose of CTS 3.8.1.2.b.5 is to specify the requirements for DG OPERABILITY. ITS 3.8.10 ACTION B preserves the intent of CTS 3.8.1.2.b.5 by declaring the DG inoperable if the associated DG DC distribution ~~subsystem~~ is inoperable. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.1.2.b.5 requires, in part, a separate ~~sparate~~ 125 volt DC distribution panel for each DG set to be OPERABLE. CTS 3.8.2.2 states, in part, that as a minimum the following AC electrical boards shall be OPERABLE and energized, and then lists the applicable boards. CTS 3.8.2.4 requires, in part, that as a minimum the following 125 volt DC boards shall be energized and OPERABLE as listed. ITS 3.8.10 states that the necessary portion of AC, vital DC, DG DC, and AC vital instrument electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. In addition, an optional Required Action (ITS 3.8.10 Required Action A.1) has been added which allows the associated supported required feature(s) to be declared inoperable. This changes the CTS by requiring those necessary portions of electrical power distribution subsystems to be OPERABLE to support equipment required to be OPERABLE, which could require more distribution boards or panels to be OPERABLE than is currently required. In addition, an action has been added to allow an option to the existing actions.

The purpose of CTS 3.8.1.2.b.5, CTS 3.8.2.2 and CTS 3.8.2.4 is to ensure that at least one train of AC, vital DC, DG DC, and 120 volt AC vital instrument electrical power distribution systems are OPERABLE. This change adds a requirement that the applicable portions of AC, vital DC, DG DC, and 120 volt AC vital instrument electrical power distribution subsystems must be OPERABLE when required to support equipment required to be OPERABLE by the Technical Specifications. This

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

added restriction conservatively assures the needed electrical power distribution boards and panels are OPERABLE, even if this results in both trains of one or more of the electrical power distribution systems being required. Because the ITS 3.8.10 electrical power distribution subsystem OPERABILITY requirements require the necessary portions of the distribution subsystems to be OPERABLE to support equipment required to be OPERABLE, if a portion of the electrical power distribution subsystem cannot supply any required equipment, that electrical power distribution subsystem is inoperable. In this event, it may not be necessary to suspend, irradiated fuel handling, and positive reactivity additions. Conservative actions can be assured if all required equipment without the necessary power is declared inoperable, and the associated ACTIONS of the individual equipment is taken (ITS 3.8.10 Required Action A.1). Therefore, along with the conservative additional requirements placed on the electrical power distribution subsystems, Required Action A.1, which requires the associated supported equipment to be declared inoperable, is also added. These changes are acceptable since the additions represent restrictions consistent with implicit assumptions for operation in shutdown conditions (required equipment receiving the necessary required power), and these restrictions are not currently imposed by the Technical Specifications. This change is designated as more restrictive because it adds a new requirement to the CTS and more boards may be required to be OPERABLE in ITS than in the CTS.

M02 CTS 3.8.1.2, CTS 3.8.2.2 and CTS 3.8.2.4 are applicable in MODES 5 and 6. ITS 3.8.10 is applicable in MODES 5 and 6 and during movement of irradiated fuel assemblies and contains an ACTIONS Note stating that LCO 3.0.3 is not applicable. This changes the CTS by adding the Applicability of "During movement of irradiated fuel assemblies," and adds a Note to the ACTIONS stating that LCO 3.0.3 is not applicable.

This change is acceptable because the proposed requirements are necessary to ensure the electrical power subsystems are OPERABLE to support equipment required to be OPERABLE during movement of irradiated fuel assemblies. Movement of fuel normally occurs during MODES 5 and 6; however, it can also occur outside of containment in other plant MODES (MODES 1, 2, 3, and 4) or other conditions (i.e., reactor defueled). This addition to the applicability is needed to ensure the appropriate electrical distribution system requirements are specified during fuel handling and to ensure the appropriate actions are taken (i.e., stop fuel movement) when the minimum electrical supply is not available. In addition, this change adds a clarification Note stating that LCO 3.0.3 is not applicable because LCO 3.0.3 has no Required Actions that restore safety. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable because LCO 3.0.3 applicability is limited to MODES 1, 2, 3, and 4 only with a designated endpoint of MODE 5. In addition, if moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with ITS 3.8.10 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary since defaulting to LCO 3.0.3 would require the reactor to be shutdown, but would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as more restrictive because the ITS requires equipment to be OPERABLE during movement of irradiated fuel

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DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

assemblies both inside and outside of the containment, not only when in MODES 5 and 6.

M03 CTS 4.8.1.2 requires, in part, the performance of CTS 4.8.1.1.3, which includes a requirement that the 125 volt DC distribution panel for each DG be demonstrated OPERABLE. ITS SR 3.8.10.1 requires, in part, verification of the correct breaker alignments and voltage to the 125 volt DC distribution panel for each DG. This changes the CTS by adding a specific surveillance requiring verification of correct breaker alignment and correct voltage to the DG DC distribution subsystem.

The purpose of CTS 4.8.1.2 is to provide assurance that necessary power to required supported systems is available with sufficient capacity, capability, redundancy, and reliability to ensure the fuel, Reactor Coolant System, and containment design limits are not exceeded and postulated accidents are mitigated. This change is acceptable because it provides additional assurance that the distribution panels associated with the DG DC electrical power distribution subsystem are OPERABLE. This change is designated as more restrictive because it add a Surveillance Requirement to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.1.2 requires AC electrical power sources to be OPERABLE, listing the sources and subsystems. CTS LCO 3.8.2.2 requires AC electrical boards to be OPERABLE, listing the boards. CTS LCO 3.8.2.4 requires DC electrical equipment and boards to be energized and OPERABLE and CTS 4.8.2.4.1 requires the overall battery voltage to be greater than or equal to 125 volts. ITS LCO 3.8.10 requires necessary portions of the AC, vital DC, DG DC, and AC vital instrument electrical power distribution subsystems to be OPERABLE to support equipment required to be OPERABLE. ITS SR 3.8.10.1 requires the verification of correct breaker alignment and voltage to each required AC, vital DC, and ~~vital~~ AC vital instrument electrical power distribution subsystem. The details of the boards are contained in the ITS Bases. This changes the CTS by moving description of the boards and panels (including the nominal voltages and any specified limits) from the CTS to the ITS Bases.

The removal of these details relating to system design from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the electrical power distribution subsystems to be OPERABLE and requires the verification of correct breaker alignment and voltage to required AC and DC electrical power distribution subsystems. This change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 5 – Removal of SR Frequency to the Surveillance Frequency Control Program)* CTS 4.8.2.2 requires, in part, that the specified AC boards be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated voltage on the buses. CTS 4.8.2.4.1 requires, in part, that each required DC battery board be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability with an overall battery voltage of greater than or equal to 125 volts. ITS SR 3.8.10.1 requires a similar Surveillance and specifies the periodic Frequency as, "In accordance with the Surveillance Frequency Control Program." This changes the CTS by moving the specified Frequencies for this SR and associated Bases to the Surveillance Frequency Control Program.

The removal of these details related to Surveillance Requirement Frequencies from the Technical Specifications is acceptable, because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The existing Surveillance Frequencies are removed from Technical Specifications and placed under licensee control pursuant to the methodology described in NEI 04-10. A new program (Surveillance Frequency Control Program) is being added to the Administrative Controls section of the Technical Specifications describing the control of Surveillance Frequencies. The surveillance test requirements remain in the Technical Specifications. The control of changes to the Surveillance Frequencies will be in accordance with the Surveillance Frequency Control Program. The Program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met. This change is designated as a less restrictive removal of detail change, because the Surveillance Frequencies are being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 *(Category 4 – Relaxation of Required Action)* With less than the minimum complement of AC boards OPERABLE and energized, CTS 3.8.2.2 requires the establishment of containment integrity within 8 hours. With less than the minimum complement of DC boards OPERABLE and energized, CTS 3.8.2.4 also requires the establishment of containment integrity within 8 hours. ITS 3.8.10 ACTION A requires, in part, suspending movement of irradiated fuel assemblies, suspension of operations involving positive reactivity additions that could result in the loss of required SDM or boron concentration, the initiation of instrument actions to restore required AC, vital DC, and AC vital board electrical power distribution subsystems to OPERABLE status, and the declaration of the associated required residual heat removal subsystems(s) inoperable and not in

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

operation. This changes the CTS by replacing the existing Required Action to restore containment integrity.

The purpose of the CTS 3.8.2.2 Action and CTS 3.8.2.4 Action is to isolate the containment to minimize any release from the plant if an event were to occur during shutdown conditions. This change is acceptable because the Required Actions establish remedial measures taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features including the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The proposed Required Actions require the suspension of movement of irradiated fuel assemblies, the suspension of operations involving positive reactivity additions that could result in the loss of required SDM or boron concentration, the initiation

instrument

of actions to restore required AC, vital DC, and AC vital electrical power distribution subsystems to OPERABLE status, and the declaration of the associated required residual heat removal subsystems(s) inoperable and not in operation. Suspending the movement of irradiated fuel assemblies will prevent a fuel handling accident from occurring. Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. The actions to restore required AC, vital DC, and AC vital electrical power distribution subsystems to OPERABLE status will place the plant in compliance with the LCO. Declaration of the associated required decay heat removal subsystems(s) inoperable and not in operation will require the plant to enter the applicable LCOs to apply additional Required Actions. The proposed actions will immediately minimize the potential for any accident releases outside of containment and are considered acceptable instead of the current action to restore containment integrity within 8 hours. The actions may be considered somewhat more restrictive since immediate action is required, however, is classified as less restrictive since the current actions to restore containment integrity have been deleted. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

3.8.1.2, 3.8.2.2, 3.8.2.4

LCO 3.8.10 The necessary portion of AC, vital DC, ~~and~~ AC vital instrument ~~bus~~ , and diesel generator (DG) DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. 1

Applicability 3.8.1.2, 3.8.2.2, 3.8.2.4 DOC M02

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

ACTIONS

DOC M02

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

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION 3.8.2.2 3.8.2.4 DOC M01	A. One or more required AC, vital DC, or AC vital instrument ~~bus~~ electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately	1
		OR		
DOC L01		A.2.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately	2
		AND		
DOC L01		A.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately	
		AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	DOC L01 A.2.3 Initiate actions to restore required AC, vital DC, and AC vital ~~bus~~ instrument electrical power distribution subsystems to OPERABLE status. 1 1	Immediately
	AND	
INSERT 1	DOC L01 A.2.4 Declare associated required residual heat removal subsystem(s) inoperable and not in operation. 1	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
4.8.1.2, 4.8.2.2, 4.8.2.4.1 SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, vital DC, ~~and~~ , and DG DC AC vital ~~bus~~ instrument electrical power distribution subsystems.	~~[7 days~~ ~~OR~~ 1 In accordance with the Surveillance Frequency Control Program ~~]~~ 3

1

INSERT 1

DOC A02

B. One or more required DG DC electrical power distribution ~~subsystems~~ panels inoperable.	B.1 Declare associated DG(s) inoperable.	Immediately

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

3.8.1.2, 3.8.2.2, 3.8.2.4

LCO 3.8.10 — The necessary portion of AC, vital DC, ~~and~~ AC vital ~~bus~~ instrument, and diesel generator (DG) DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. 1

Applicability 3.8.1.2, 3.8.2.2, 3.8.2.4 DOC M02

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

ACTIONS

-----NOTE-----

DOC M02 LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION 3.8.2.2 3.8.2.4 DOC M01 A. One or more required AC, vital DC, or AC vital ~~bus~~ instrument electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable. 1	Immediately
	OR	
DOC L01	A.2.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies. 2	Immediately
	AND	
DOC L01	A.2.2 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L01	A.2.3 Initiate actions to restore required AC, vital DC, and AC vital ~~bus~~ instrument electrical power distribution subsystems to OPERABLE status. (1) (1) <u>AND</u>	Immediately
DOC L01 INSERT 1	A.2.4 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately (1)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
4.8.1.2, 4.8.2.2, 4.8.2.4.1 SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, vital DC, ~~and~~ AC vital ~~bus~~ instrument, and DG DC electrical power distribution subsystems.	~~[7 days~~ ~~OR~~ (1) In accordance with the Surveillance Frequency Control Program ~~]~~ (3)

1

INSERT 1

DOC A02	B. One or more required DG DC electrical power distribution ~~subsystems~~ panels inoperable.	B.1 Declare associated DG(s) inoperable.	Immediately

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B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

BACKGROUND

A description of the AC, vital DC, diesel generator (DG) DC, and AC vital instrument ~~bus~~ electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating." 1

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 Engineered Safety Feature (ESF) systems are OPERABLE. The AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. 1 2 1 1

The OPERABILITY of the AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution system is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. 1

The OPERABILITY of the minimum AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution subsystems during MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 1 2

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

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

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

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

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components - all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~[involving handling recently irradiated fuel]~~). 2

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, provide assurance that: 2

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

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

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

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

The AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9. 1

ACTIONS

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

BASES

ACTIONS (continued)

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

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of ~~[recently]~~ irradiated fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend movement of ~~[recently]~~ irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM. 2 2

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

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through A.2.~~4~~ 3 do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.~~5~~ 4 is provided to direct declaring RHR inoperable and not in operation, which results in taking the appropriate RHR actions. 3 3

BASES

ACTIONS (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power. INSERT 1 1

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the AC, vital DC, DG DC, and AC vital ~~bus~~ instrument electrical power distribution subsystems are functioning properly, with all the ~~buses~~ boards energized. The verification of proper voltage availability on the ~~buses~~ boards ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these ~~buses~~ boards. 1

~~[The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~ 4

~~OR~~

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

~~-----------------------------REVIEWER'S NOTE-----------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~---]~~

REFERENCES

1. U FSAR, Chapter ~~[~~6~~]~~. 1 2

2. U FSAR, Chapter ~~[~~15~~]~~.

1

INSERT 1

B.1

panels

If one or more required DG DC electrical power distribution ~~subsystems~~ are inoperable, the associated DGs may be incapable of performing their intended function and must be immediately declared inoperable. This declaration also requires entry into the applicable Conditions and Required Actions for inoperable DGs, LCO 3.8.2, "AC Sources – Shutdown."

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

vital ,diesel generator (DG) DC,

BACKGROUND

instrument A description of the AC, DC, and AC vital ~~bus~~ electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating." 1

DG DC,

APPLICABLE SAFETY ANALYSES

U The initial conditions of Design Basis Accident and transient analyses in the FSAR, Chapter ~~[~~6~~]~~ (Ref. 1) and Chapter ~~[~~15~~]~~ (Ref. 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The AC, vital DC, and AC vital ~~bus~~ instrument electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. 1 2 1 1

vital DG DC,

instrument The OPERABILITY of the AC, DC, and AC vital ~~bus~~ electrical power distribution system is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. 1

vital DG DC,

instrument The OPERABILITY of the minimum AC, DC, and AC vital ~~bus~~ electrical power distribution subsystems during MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 1 2

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

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

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

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

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components - all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~[involving handling recently irradiated fuel]~~). 2

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, provide assurance that: 2

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

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

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

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

The AC, vital DC, DG DC, and AC vital instrument ~~bus~~ electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9. 1

ACTIONS

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

BASES

ACTIONS (continued)

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

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of ~~[recently]~~ irradiated 2
fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend movement of ~~[recently]~~ irradiated fuel assemblies, and operations 2
involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

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

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through A.2.~~4~~3 do not 3
adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.~~5~~4 is provided to direct declaring 3
RHR inoperable and not in operation, which results in taking the appropriate RHR actions.

BASES

ACTIONS (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power. INSERT 1 1

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the AC, vital DC, DG DC, and AC vital ~~bus~~ instrument electrical power distribution subsystems are functioning properly, with all the ~~buses~~ boards energized. The verification of proper voltage availability on the ~~buses~~ boards ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these ~~buses~~ boards. 1

~~[The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.~~ 4

~~OR~~

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

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~
~~Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.~~ 5
~~---]~~

REFERENCES

1. U FSAR, Chapter ~~[~~6~~]~~.
2. U FSAR, Chapter ~~[~~15~~]~~. 1 2

1

INSERT 1

B.1

If one or more required DG DC electrical power distribution ~~subsystems~~ panels are inoperable, the associated DGs may be incapable of performing their intended function and must be immediately declared inoperable. This declaration also requires entry into the applicable Conditions and Required Actions for inoperable DGs, LCO 3.8.2, "AC Sources – Shutdown."

Licensee Response/NRC Response/NRC Question Closure

Id	**452**
NRC Question Number	**VKG025**
Select Application	**NRC Question Closure**
Attachment 1	
Attachment 2	
Response Statement	
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Question Closure Date	**5/14/2015**
Notification	**Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele** **Roger Scott**
Added By	**Khadijah Hemphill**
Date Added	**5/14/2015 3:10 PM**
Date Modified	
Modified By	

ITS NRC Questions

Id	**196**
NRC Question Number	**VKG026**
Category	**Technical**
ITS Section	**3.8**
ITS Number	**3.8.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**

NRC Question

ITS 3.8.1 (for Unit 1), Condition D, "DG 2A-A or 2B-B inoperable," Action D.4 requires "Declare associated required feature(s) inoperable," within 7 days. However, this Action does not specify the DG to be restored to the operable status within any given time. While Unit 2 will be required to shutdown if the DG is not restored to operable within 7 days, Unit 1 can remain in operational mode unless some other LCO Action statement requires Unit 1 to shutdown or restore the DG to operable status.

In response to RAI # VKG007, the licensee provided details of major shared loads fed from 6.9 kV shutdown boards and associated 480 V boards, and the various LCOs which would be entered when the one of the DGs belonging to the opposite (shutdown) Unit becomes inoperable. A review of various LCOs indicates the Unit can remain in operational mode (without requiring the DG to be recovered) for up to 10 days (7 days + 72 hours); and 14 days (7 days + 7 days) if UHS related license amendment (TS-SQN-13-01 and TS-SQN-13-02, ML132280A267) and proposed plant modification to install one or more additional auxiliary control air compressors is approved and implemented by the licensee.

CTS requires both Units to shutdown after 7 days if a DG is not restored to operable. However, the ITS would allow one of the Units to remain in operational mode for 10 to 14 days before requiring shutdown. The staff is concerned that the remaining Unit in operation would not be able to safely shutdown in case of "Loss of Offsite power (only Onsite power available from remaining DGs), LOCA, <u>and worst case single failure</u> in one of the safety-related systems (GDC 17, GDC 34, and GDC 35 requirements)," during the extended period of DG inoperability. CTS accepts this risk for 7 days, but ITS is extending this risk for an additional 3 or 7 days. Although, the Commission allows single failure not to be considered during an LCO Action statement, the staff is concerned regarding the extended DG inoperability. Typically, according to standard TS and Regulatory Guide 1.93, the inoperability of a DG is limited to 72 hours.

The above staff concerns are also applicable to Condition H, in which a DG belonging to the opposite Unit becomes inoperable. ITS 3.8.1.H does not require the DG to be restored; only the associated required features are to be declared inoperable.

Please provide the technical basis for the relaxation of Completion Times described above or revise ITS 3.8.1 Conditions D and H appropriately for both Units (i.e., to be consistent with the current licensing basis).

Attach File 1	
Attach File 2	
Issue Date	**11/18/2014**
Added By	**Khadijah Hemphill**
Date Modified	
Modified By	
Date Added	**11/18/2014 5:35 PM**
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele** **Roger Scott**

Licensee Response/NRC Response/NRC Question Closure

Id	**432**
NRC Question Number	**VKG026**
Select Application	**Licensee Response**
Attachment 1	**Attachment 1 for RAI VKG026.pdf** (21MB)
Attachment 2	
Response Statement	

In response to RAI VKG-026, the CTS 3.8.1.1 ACTION b markups will be revised to maintain the current licensing basis that specifies, in part, with one or more Train A DGs, or one or more Train B DGs inoperable, the DGs shall be restored to OPERABLE status within 7 days. Discusion of Change (DOC) L01 will also be revised to remove the discussion of providing a separate ITS LCO 3.8.1 Condition for an inoperable opposite unit DG.

The restoration of the current licensing basis for inoperable DGs will be reflected in ITS 3.8.1 Condition B. Based on the inclusion of inoperable opposite unit DGs in ITS 3.8.1 Condition B, previously proposed ITS 3.8.1 Conditions D, G, H and I are no longer necessary and will be deleted. The remaining Conditions will be resequenced, and as a result, conforming changes will be made to the CTS markups where reference is made to resequenced ITS 3.8.1 Conditions.

Conforming ITS 3.8.1 changes will be made to the following:
1. **DOCs L02 and L20 will be revised to reflect the changes to Condition B and deletion of the previously proposed ITS 3.8.1 Conditions D, G, H and I;**
2. **DOCs A03, A04, M01, L05, and L20 will be revsied to reflect the resequenced ITS 3.8.1 Conditions;**
3. **JFD 5; and**
4. **ISTS 3.8.1 Bases markups.**

See Attachment 1 for the draft revised CTS 3.8.1.1, ISTS 3.8.1, and ISTS 3.8.1 Bases markups, DOCs, and JFD discussed above. (Note: Attachment 1 contains draft changes made in response to RAI VKG-027):

1. **CTS 3.8.1.1 ACTION b markups will be revised to reflect maintaining the requirement for the DGs to be restored to OPERABLE status within 7 days (Pages 5 and 13 of Enclosure 2, Volume 13).**
2. **Conforming changes will be made to DOCs L02 and L20 to reflect the changes to Condition B and deletion of ITS 3.8.1 Conditions D, G, H and I (Pages 34, 35, and 44 of Enclosure 2, Volume 13).**
3. **Conforming changes will be made to DOCs A03, A04, M01, L05, and L20 to reflect the resequenced ITS 3.8.1 Conditions (Pages 22, 24, 33, 36, and 44 of Enclosure 2, Volume 13)**
4. **DOCs L01 and L02 will be revised (Pages 32-35 of Enclosure 2, Volume 13).**
5. **ITS 3.8.1 Condition B will be revised to reflect the restoration of the current licensing basis for inoperable DGs (Pages 48, 49, 72, and 73 of Enclosure 2, Volume 13). Conforming changes will be made to the ITS Bases (Pages 110 and 160 of Enclosure 2, Volume 13).**

6. **ITS 3.8.1 Condition D, G, H, and I will be deleted. The remaining Conditions will be resequenced, where necessary. (Pages 50-55 and 74-79 of Enclosure 2, Volume 13). Conforming changes will be made to the ITS Bases (Pages 107, 110, 111, 113, 115-121, 157, 160, 161, 163, and 165-171 of Enclosure 2, Volume 13). CTS markups will be revised where reference is made to resequenced ITS 3.8.1 Conditions (Pages 5, 6, 11-14, 20, and 21 of Enclosure 2, Volume 13).**
7. **JFD 5 will be revised to reflect conforming changes (Page 95 and Insert JFD 5 of Enclosure 2, Volume 13).**
8. **Determination of No Significant Hazards will be revised to reflect the restoration of the current licensing basis for inoperable DGs (Pages 200-203 of Enclosure 2, Volume 13).**

Response Date/Time	**4/9/2015 2:30 PM**
Closure Statement	
Question Closure Date	
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele**
Added By	**Scott Bowman**
Date Added	**4/9/2015 1:23 PM**
Date Modified	
Modified By	

ITS A01 ITS 3.8.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

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

LCO 3.8.1.a a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system~~@~~, and LA01 A02

LCO 3.8.1.b b. Four ~~separate and independent~~ diesel generator sets each with: LA01

1. ~~Two diesels driving a common generator~~

SR 3.8.1.4 2. Two engine-mounted fuel tanks containing a minimum volume of 250 gallons of fuel, per tank

3. A separate fuel storage system containing a minimum volume of 62,000 gallons of fuel, See ITS 3.8.3

SR 3.8.1.6 4. A separate fuel transfer pump, and

5. A separate 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger. See ITS 3.8.4 and 3.8.9

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

ACTION:

Add proposed Condition A L01

ACTION A a. ~~With one offsite A.C. circuit of the above required A.C. electrical power source inoperable,~~ demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. Restore ~~at least two~~ offsite circuit~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L01 L02

G ACTION ~~K~~

~~Add proposed Condition B~~ ~~L01~~

STET

ACTION B b.~~#~~ ~~With diesel generator set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B 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 one hour and at least once per 8 hours thereafter, and determining OPERABLE diesel generator sets are not inoperable due to common cause failure or performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore ~~at least four~~ diesel generator set~~s~~ to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~

G ACTION ~~K~~ STET

Add proposed ACTION~~S~~ C ~~and D~~ L01

~~# Required actions, to verify OPERABLE diesel generator sets are not inoperable due to common cause failure or perform SR 4.8.1.1.2.a.4, shall be completed if this action is entered.~~ L02

SR 3.8.1.3 Note 3 * No more than one diesel generator may be made simultaneously inoperable on a pre-planned basis for ~~maintenance, modifications, or~~ surveillance testing. L03

~~@ Offsite circuits utilizing USST 2A and USST 2B as the normal power sources require CSST A and CSST C to be available as the alternate power sources via automatic transfer at the associated 6.9 kV Unit Boards. (CSST B can be substituted for CSST A or CSST C.) This Note remains in effect until November 30, 2013, or until the USST modifications are implemented on Units 1 and 2, whichever occurs first.~~ A02

ITS | ITS 3.8.1

A01

ELECTRICAL POWER SYSTEMS

E

Add proposed ACTION ~~F~~ Note | A03

ACTION (Continued)

E

Add proposed Condition ~~F~~ | L01

ACTION ~~F~~ E | c. ~~With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable~~, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION A, ACTION B, ACTION ~~F~~ E, ACTION ~~K~~ G

L04

ACTION ~~E~~ D | d. With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating~~; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and MODE 5 within 36 hours

ACTION ~~K~~ G

L05, M01

ACTION ~~J~~ F | e. With either diesel generator sets 1A-A and/or 2A-A inoperable simultaneous with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION B, ACTION ~~J~~ F, ACTION ~~K~~ G

~~L01~~

~~Add proposed ACTIONS G, H, and I~~ | ~~L01~~

ACTIONS Note | f. LCO 3.0.4.b is not applicable to diesel generators.

H

Add proposed ACTIONS ~~L~~ and ~~M~~ | A04

I

SURVEILLANCE REQUIREMENTS

SR 3.8.1.1 | 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: | LA01

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

In accordance with the Surveillance Frequency Control Program | LA02

SR 3.8.1.8 | b. Demonstrated OPERABLE ~~at least once per 18 months~~# by manually and automatically transferring the power supply to each 6.9 kV Unit Board## from the normal supply to the alternate supply.

SR 3.8.1.8 Note 1 | # For the 1A, 1B, 1C and 1D 6.9 kV Unit Boards, this Surveillance shall not be performed in MODES 1 and 2.

Add proposed SR 3.8.1.8 Note 1, second and third sentences. | L06

SR 3.8.1.8 Note 2 | ## Transfer capability is only required to be met for 6.9 kV Unit Boards that require normal and alternate power supplies.

ITS

A01

ITS 3.8.1

3/4 LIMITING CONDITIONS FOR OPEATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met and as provided in LCO 3.0.7.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

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

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

See ITS 3.0

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

3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Required Actions A.2, B.2, ~~E.1~~, and associated Completion Times

C.2, D.1

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both

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ITS A01 ITS 3.8.1

APPLICABILITY

LIMITING CONDITION FOR OPERATION (Continued)

24 hours for Required Action A.2, C.2
4 hours for Required Action B.2
12 hours for Required Action ~~E~~.1 D

3.0.5 (Continued)

conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in~~: L20

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

~~This Specification is not applicable in MODES 5 or 6.~~ A08

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

3.0.7 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

SURVEILLANCE REQUIREMENTS

See ITS 3.0

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

ITS A01 ITS 3.8.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE: LA01

LCO 3.8.1.a a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system~~@~~, and A02

LCO 3.8.1.b b. Four ~~separate and independent~~ diesel generator sets each with: LA01

1. ~~Two diesels driving a common generator~~

SR 3.8.1.4 2. Two engine-mounted fuel tanks containing a minimum volume of 250 gallons of fuel, per tank

3. A separate fuel storage system containing a minimum volume of 62,000 gallons of fuel, See ITS 3.8.3

SR 3.8.1.6 4. A separate fuel transfer pump, and

5. A separate 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger. See ITS 3.8.4 and 3.8.9

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

ACTION:

Add proposed Condition A L01

ACTION A a. ~~With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable,~~ demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. Restore ~~at least two~~ offsite circuit~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L01 L02

ACTION ~~K~~ G

~~Add proposed Condition B~~ ~~L01~~

STET

ACTION B b.~~#~~ ~~With diesel generator set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B 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 one hour and at least once per 8 hours thereafter, and determining OPERABLE diesel generator sets are not inoperable due to common cause failure or performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore ~~at least four~~ diesel generator set~~s~~ to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~ STET

ACTION ~~K~~ G

Add proposed ACTIONS C ~~and D~~ L01

~~# Required actions, to verify OPERABLE diesel generator sets are not inoperable due to common cause failure or perform SR 4.8.1.1.2.a.4, shall be completed if this action is entered.~~ L02

SR 3.8.1.3 Note 3 * No more than one diesel generator may be made simultaneously inoperable on a pre-planned basis for ~~maintenance, modifications, or~~ surveillance testing. L03

~~@ Offsite circuits utilizing USST 2A and USST 2B as the normal power sources require CSST A and CSST C to be available as the alternate power sources via automatic transfer at the associated 6.9 kV Unit Boards. (CSST B can be substituted for CSST A or CSST C.) This Note remains in effect until November 30, 2013, or until the USST modifications are implemented on Units 1 and 2, whichever occurs first.~~ A02

ITS A01 ITS 3.8.1

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

Add proposed ACTION ~~F~~ E Note A03

Add proposed Condition ~~F~~ E L01

ACTION ~~F~~ E c. ~~With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable,~~ demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L04

ACTION A, ACTION B, ACTION ~~F~~ E, ACTION ~~K~~ G

ACTION ~~E~~ D d. With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating~~; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and MODE 5 within 36 hours L05 M01

ACTION ~~K~~ G

ACTION ~~J~~ F, ACTION B, ACTION ~~J~~ F, ACTION ~~K~~ G e. With either diesel generator sets 1A-A and/or 2 A-A inoperable simultaneous with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~

~~Add proposed ACTIONS G, H, and I~~ ~~L01~~

ACTIONS Note f. LCO 3.0.4.b is not applicable to diesel generators.

Add proposed ACTIONS ~~L~~ H and ~~M~~ I A04

SURVEILLANCE REQUIREMENTS

SR 3.8.1.1 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: LA01

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

In accordance with the Surveillance Frequency Control Program LA02

SR 3.8.1.8 b. Demonstrated OPERABLE ~~at least once per 18 months~~# by manually and automatically transferring the power supply to each 6.9 kV Unit Board ## from the normal supply to the alternate supply.

SR 3.8.1.8 Note 1 # For the 2A, 2B, 2C and 2D 6.9 kV Unit Boards this Surveillance shall not be performed in MODES 1 and 2. Add proposed SR 3.8.1.8 Note 1, second and third sentences. L06

SR 3.8.1.8 Note 2 ## Transfer capability is only required to be met for 6.9 kV Unit Boards that require normal and alternate power supplies.

ITS A01 ITS 3.8.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met and as provided in LCO 3.0.7.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

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

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

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

See ITS 3.0

3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Required Actions A.2, B.2, ~~E.1,~~ C.2, D.1 and associated Completion Times

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both

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APPLICABILITY

LIMITING CONDITION FOR OPERATION

, C.2

24 hours for Required Action A.2
4 hours for Required Action B.2
12 hours for Required Action ~~E~~.1

D

3.0.5 (Continued)

conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

L20

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

Declare required features inoperable.

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

A08

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

3.0.7 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

See ITS 3.0

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery,

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A01 In the conversion of the Sequoyah Nuclear Plant (SQN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 4.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.8.1.1.a Note @ has an expiration date of November 30, 2013. As it is anticipated that the SQN ITS Conversion License Amendment Request will not be approved by the NRC before this date, Note @ has been deleted. As such, these changes are administrative.

A03 CTS 3.8.1.1 ACTION c applies when one offsite circuit and one diesel generator (DG) are inoperable. In this condition, one or more required electrical boards may be de-energized. CTS 3.8.2.1 provides an ACTION for a de-energized required electrical board. ITS 3.8.1 ACTION ~~F~~ E Note in the Required Actions column states, "Enter applicable Conditions and Required Action of LCO 3.8.9, "Distribution System - Operating," when Condition ~~F~~ E is entered with no AC power source to 6.9 kV Shutdown Board 1A-A [2A-A for Unit 2] or 1B-B [2B-B for Unit 2] ~~any train~~." This changes the CTS by specifically requiring the compensatory actions for Distribution System - Operating to be taken, if a distribution train is made inoperable by inoperable AC Sources.

This change is acceptable because no changes are made to CTS requirements. CTS 3.0.1 requires the associated ACTION requirements to be met when an LCO is not met. With the addition of ITS LCO 3.0.6, an exception to ITS LCO 3.0.2 (CTS 3.0.1) was created, whereby ACTION requirements associated with an unmet LCO are not required to be met. Therefore, in the event AC Sources are inoperable such that a distribution subsystem is de-energized, ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in the event of an entire train without power, specific direction to take appropriate ACTIONS for the Distribution System is added (ITS 3.8.1, Note to ACTION ~~F~~ E) for the condition of no power for 6.9 kV Shutdown Board 1A-A [2A-A for Unit 2] or 1B-B [2B-B for Unit 2] ~~a train~~. This format and construction implements the existing treatment of this condition within the framework of the ITS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A04 CTS 3.8.1.1 does not contain an ACTION for multiple offsite circuits and DGs inoperable. Having multiple offsite circuits and DGs inoperable requires entering CTS LCO 3.0.3. ITS 3.8.1 ACTION ~~L~~ H requires entering LCO 3.0.3 immediately, if two offsite circuits are inoperable concurrent with one or more inoperable Train A or Train B DG(s). ITS 3.8.1 ACTION ~~M~~ I requires entering LCO 3.0.3 immediately, if one offsite circuit is inoperable concurrent with one or more inoperable Train A and Train B DGs. This changes the CTS by adding specific ACTIONS requiring entry into LCO 3.0.3.

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DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

specific CTS DG loading requirement with a statement that DG loadings may include gradual loading as recommended by the manufacturer. This change is consistent with the recommendations of Generic Letter (GL) 93-05, "Line- Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." GL 93-05, Section 10.1, states that DGs "should be loaded in accordance with vendor recommendations for all test purposes other than the refueling outage LOOP tests." The change is acceptable, because it will ensure the DGs will continue to be operated consistent with manufacturer recommendations. This change is designated as administrative, because it does not result in a technical change to the CTS.

A07 CTS 4.8.1.1.2.d.5 requires verification that on an ESF actuation test signal (without loss of offsite power), each DG starts and operates for at least 5 minutes. ITS SR 3.8.1.12 requires a similar test, but does not specify that the DG auto-start on an ESF actuation test signal is "without loss of offsite power." This changes the CTS by not specifying the DG auto-start on an ESF actuation test signal is without a loss of offsite power signal.

The purpose of CTS 4.8.1.1.2.d.5 is to demonstrate that each DG automatically starts on an ESF actuation test signal. The requirements of this Surveillance are retained in the ITS as SR 3.8.1.12. The purpose of CTS 4.8.1.1.2.d.6.b) is to verify that each DG starts on a loss of offsite power concurrent with an ESF actuation test signal. The requirements of this Surveillance are retained in the ITS as SR 3.8.1.18. This change is acceptable, because it is understood that the CTS 4.8.1.1.2.d.5 required DG start on an ESF actuation test signal is without a loss of offsite power signal. Therefore, it is unnecessary to provide this information in ITS SR 3.8.1.12. This change is designated as administrative, because it does not result in a technical change to the CTS.

A08 CTS 3.0.5 states that it is not applicable in MODE 5 or 6. CTS 3.0.5 has been incorporated into the ACTIONS of ITS 3.8.1. This changes the CTS by incorporating the allowances of CTS 3.0.5 in ITS 3.8.1.

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

<u>MORE RESTRICTIVE CHANGES</u>

M01 CTS 3.8.1.1 ACTION d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of the offsite sources within 24 hours, and if it is not restored within the allowed time, the unit is required to be in at least HOT STANDBY within the next 6 hours. ITS 3.8.1 D ACTION ~~E~~ requires restoration of at least one offsite circuit to OPERABLE status G within 24 hours, otherwise ITS 3.8.1 ACTION ~~K~~ requires the unit to be in MODE 3 within 6 hours and MODE 5 within 36 hours. This changes the CTS by adding the requirement to be in MODE 5 within 36 hours.

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

LA06 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.g.1 requires verification of each DG's capability to reject a load of greater than or equal to 600 kW while maintaining voltage and frequency within specified ranges. ITS SR 3.8.1.9 requires a similar verification, but does not specify the value of the single largest post-accident load to reject. This changes the CTS by moving the detail of the single largest load to the ITS Bases.

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

LESS RESTRICTIVE CHANGES

L01 CTS 3.8.1.1 ACTION a provides actions for one inoperable offsite circuit and allows 72 hours to restore the inoperable offsite circuit to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable and allows 7 days to restore the inoperable DG(s) to OPERABLE status before requiring the unit to be shut down and cooled down.~~ CTS 3.8.1.1 ACTION c provides actions for one inoperable offsite circuit and one inoperable DG and allows 12 hours to restore at least one of the inoperable AC sources to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION d provides actions for two inoperable offsite circuits and allows 24 hours to restore at least one of the inoperable offsite circuits to OPERABLE status before requiring the unit to be shut down. CTS 3.8.1.1 ACTION e provides actions for one or two inoperable DGs in both trains and allows 2 hours to restore the inoperable DG(s) in one train to OPERABLE status before requiring the unit to be shut down and cooled down. CTS 3.8.1.1 ACTION f states LCO 3.0.4.b is not applicable to DGs. The ITS ACTIONS are modified by a Note stating LCO 3.0.4.b is not applicable to DGs.~~ ITS 3.8.1 ACTION A provides actions for one inoperable offsite circuit for reasons other than Condition C, and allows 72 hours to restore the inoperable offsite power source to OPERABLE status. ~~ITS 3.8.1 ACTION B provides actions for one inoperable associated unit's DG or both DGs in one train inoperable, and allows 7 days to restore the inoperable DG(s) to OPERABLE status.~~ ITS 3.8.1 ACTION C provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board, and ~~requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite circuit cannot be~~

requires: 1) performance of ITS SR 3.8.1.1 for the OPERABLE offsite circuit in 1 hour and once per 8 hours thereafter, 2) declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and 3) restoration of the offsite circuit to OPERABLE status in 7 days.

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

~~restored to an OPERABLE status. ITS 3.8.1 ACTION D requires declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION E requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 12 hours. Otherwise, one offsite circuit is required to be restored to an OPERABLE status in 24 hours.~~ ITS 3.8.1 ACTION ~~F~~ E provides actions for one associated unit's offsite circuit inoperable concurrent with one associated unit's DG inoperable, and allows 12 hours to restore one of the inoperable AC sources to OPERABLE status. For the condition of one offsite circuit inoperable solely due to an inoperable power source to an opposite unit's 6.9 kV Shutdown Board concurrent with an inoperable DG (similar to CTS 3.8.1.1 Action c), ITS 3.8.1 Conditions B and C would be entered concurrently. ITS 3.8.1 ACTIONS B and C require, in part, restoration of the inoperable AC sources (circuit and DG) to an OPERABLE status in 7 days. This changes the CTS by providing a new ITS 3.8.1 ACTION C to allow 7 days to restore an inoperable offsite circuit to an OPERABLE status, if the offsite circuit is inoperable solely due to an inoperable power source to an opposite unit's Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable). ~~ITS ACTION G requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no offsite power available inoperable in 7 days. ITS~~

~~more Train B DGs inoperable and allows 2 hours to restore one Train of DGs to OPERABLE status. ITS 3.8.1 ACTION K requires the unit to be shut down and cooled down if a Required Action and associated Completion Time of Condition A, B, E, F, I, or J is not met. These changes to the CTS provide separate ACTIONS to declare the required features powered from the opposite unit's Class 1E AC Electrical Power Distribution System inoperable as the remedial measures for the inoperable AC sources.~~

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and DGs. The onsite Class 1E AC Electrical Distribution System supplies electrical power to two power trains shared between the two units. The core cooling and containment cooling system loads (e.g., Safety Injection (SI) pumps, Auxiliary Feedwater (AFW) pumps, Residual Heat Removal (RHR) pumps, Centrifugal Charging pumps, Containment Spray pumps, and Air Return System (ARS) fans) are unitized to the respective unit's 6.9 kV Shutdown Boards. However, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVs), and Control Room HVAC (CRACS)) are shared between the units. The AC sources for the shared loads are distributed across both unit's shutdown boards. Therefore, two qualified offsite circuits and four DGs capable of supplying the onsite Class 1E AC Electrical Distribution System are required to be OPERABLE. However, the impacts of an inoperable offsite power source or DG on an opposite unit's 6.9 kV Shutdown Board differ from the impacts of an inoperable offsite power source or DG on an associated unit's 6.9 kV Shutdown Board, due to the loads powered from the respective board.

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ITS 3.8.1, AC SOURCES - OPERATING

For example, with SQN Unit 1 in MODES 1, 2, 3, and 4, 6.9 kV Shutdown Boards 1A-A and 1B-B, and the associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to the ESF systems powered from those boards. Additionally, 6.9 kV Shutdown Boards 2A-A and 2B-B and associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to any required shared components required for Unit 1. If it is necessary to de-energize 6.9 kV Shutdown Board 2A-A or 2B-B, the redundant shared systems can be aligned prior to de-energizing the shutdown board to ensure no loss of safety function will occur. Upon removing the shutdown board from service, the applicable Conditions and Required Actions for the affected shared system LCOs will be entered and tracked and either the offsite power source or the DG is required to be restored to an OPERABLE status in 7 days.

In the event of an unplanned loss of an offsite power source to an opposite unit's 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and restoration of the offsite circuit to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite power source cannot be restored to an OPERABLE status.~~ ~~Similarly, in~~ In the event of an unplanned loss of a DG ~~to an opposite unit 6.9 kV Shutdown Board~~, the proposed actions require declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours, and restoration of the DG to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status.~~ In both cases, the ACTIONS require performance of SR 3.8.1.1 for the required OPERABLE offsite circuit(s) within 1 hour and once per 8 hours thereafter.

The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair inoperable features. If the necessary repairs cannot be made within the established Completion Time, ITS 3.8.1 ACTION G is entered and the unit is required to be shut down to MODE 3 in 6 hours and MODE 5 in 36 hours. ~~the associated required features are declared inoperable and the applicable Conditions and Required Actions for the affected shared system LCOs are entered and tracked~~. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's offsite circuit ~~AC sources~~ commensurate with the importance of maintaining the~~se~~ offsite circuit ~~AC sources~~ capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION b requires with DG set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B inoperable, determination that OPERABLE DGs are not inoperable due to common cause failure or through performance of CTS 4.8.1.1.2.a.4. This ACTION is modified by Note #, requiring completion of the required action once the ACTION is entered. ITS 3.8.1

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ACTION B requires that with ~~an associated unit's DG inoperable (or with both~~ any DGs in a train inoperable~~)~~, determination that OPERABLE DGs are not inoperable due to common cause failure or through performance of SR 3.8.1.2. However, ITS does not specify completion of the ACTIONS if the Condition is exited. This changes the CTS by removing a requirement to complete the ACTIONS once the ACTION is entered.

The purpose of CTS 3.8.1.1 ACTION b is to provide compensatory measures to be taken in response to inoperable DG set(s), including demonstration that the OPERABLE DGs are not inoperable. The Note requiring completion of the actions to verify the remaining DGs are OPERABLE once the ACTION is entered was added to the CTS with License Amendments 205 (Unit 1) and 195 (Unit 2), dated June 29, 1995 (ADAMS Accession No. ML013320017). TVA license amendment request TS 94-19, submitted on April 6, 1995, stated that the addition of this Note was being made to align with the requirements contained in NUREG-1431, LCO 3.8.1. On April 7, 1995, NUREG-1431, Rev. 1 was issued. The Note modifying LCO 3.8.1 ACTION B that required completion of Required Actions B.3.1 and B.3.2 (demonstration of DG OPERABILITY) was removed from NUREG-1431 in Revision 1. The requirement to complete the actions to demonstrate the OPERABLE DGs are not inoperable is an exception to ITS LCO 3.0.2 (CTS LCO 3.0.2). Completing the ACTIONS to verify the OPERABILITY of the remaining OPERABLE DGs is not required to restore compliance with the LCO. This change is acceptable because completion of the ACTIONS to evaluate the possibility of a DG common cause failure will be tracked as an item in the corrective action program. This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable. ACTION b is modified by Note * stating that no more than one DG may be made simultaneously inoperable on a pre-planned basis for maintenance, modifications, or surveillance testing. ITS SR 3.8.1.3 verifies each DG can be started, synchronized, loaded, and operated for at least 60 minutes. SR 3.8.1.3 is modified by Note 3 stating the Surveillance shall be conducted on only one DG at a time. This changes the CTS by deleting the restriction for not making more than one DG simultaneously inoperable on a pre-planned basis, with the exception of the performance of SR 3.8.1.3.

The purpose of CTS 3.8.1.1 ACTION b is to provide required actions for one or both DGs in a train inoperable. The purpose of Note * is to ensure pre-planned activities that may result in an inoperable DG (i.e., maintenance, modifications, or surveillance testing) are not performed on both DGs in a train at the same time. The proposed required actions do not include the restriction for limiting pre-planned activities to one DG at a time. The control of pre-planned maintenance, modifications, or surveillance testing is an issue for procedures and scheduling. This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.1.1 ACTION b requires, in part, with one or both DG(s) in a train inoperable to demonstrate the

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ITS 3.8.1, AC SOURCES - OPERATING

OPERABILITY of the remaining DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours. CTS 3.8.1.1 ACTION c requires, in part, with one offsite circuit and one DG inoperable to demonstrate the OPERABILITY of the remaining DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours. ITS 3.8.1 ACTION B requires with one or both DG(s) in a train inoperable to perform SR 3.8.1.2 for OPERABLE DGs within 24 hours. This changes the CTS by extending the time allowed to demonstrate the OPERABILITY of the OPERABLE DGs with one offsite circuit and one DG inoperable from 8 hours to 24 hours.

The purpose of the CTS 3.8.1.1 ACTIONS b and c is to ensure that the OPERABLE DGs are not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). CTS 3.0.1 states that upon failure to meet an LCO, the associated ACTION requirements shall be met. In the instance of one offsite circuit and one DG inoperable, the condition of one inoperable DG also exists. Therefore, in addition to meeting the requirements of CTS 3.8.1.1 ACTION c, the requirements of CTS 3.8.1.1 ACTION b are required to be met. However, this results in conflicting time requirements for performing CTS 4.8.1.1.2.a.4 on the OPERABLE DGs. A 24 hour Completion Time for performing DG common mode failure checks is consistent with the guidance provided in Generic Letter 84-15. This change is acceptable, since the vast majority of DG start tests demonstrate that the DG is OPERABLE. This change is designated as less restrictive, because additional time is allowed to demonstrate the OPERABILITY of the OPERABLE DGs for the condition of one offsite circuit and one DG inoperable under the ITS than under the CTS.

L05 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION d states, in part, with two offsite circuits inoperable demonstrate the OPERABILITY of the DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the DGs are already operating. CTS 4.8.1.1.2.a.4 requires verification that each DG starts and achieves voltage and frequency within established ranges within 10 seconds. ITS 3.8.1 ACTION D ~~E~~ does not contain this requirement. This changes the CTS by deleting the requirement to test each DG when two offsite circuits are inoperable.

The purpose of the CTS 4.8.1.1.2.a.4 requirement in CTS 3.8.1.1 ACTION c is to ensure that the DGs are OPERABLE in the case of a loss of offsite power. Since the DGs are tested on monthly basis, there is no reason to suspect that they would not perform their intended safety function. Furthermore, the inoperability of two offsite circuits does not affect the OPERABILITY of the DGs, since the DGs are independent of the offsite circuits. Therefore, there is no need to subject the DGs to additional testing. This change is designated as less restrictive because the CTS requirement to perform testing on the DGs when both offsite circuits are inoperable is not being retained in the ITS.

L06 *(Category 8 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.1.b requires the demonstration of a manual and automatic transfer of the power supply to each 6.9 kV Unit Board from the normal to alternate once per 18 months. Note # specifies that the Surveillance shall not be performed on the associated unit's 6.9 kV Unit Boards in MODES 1 and 2. This test has been incorporated in ITS SR 3.8.1.8. ITS SR 3.8.1.8 includes a

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L19 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.g.4 requires demonstration of a DG hot restart and verification following energization that steady state voltage and frequency are maintained ≥ 6800 volts and ≤ 7260 volts and ≥ 58.8 Hz and ≤ 61.2 Hz during this test. ITS SR 3.8.1.15 requires demonstration of a DG hot restart and requires verification that within 10 seconds, voltage ≥ 6800 V and frequency ≥ 58.8 Hz, and steady state voltage ≥ 6800 V and ≤ 7260 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range.

The purpose of CTS 4.8.1.1.2.g.4 is to test the ability of each DG to restart on an accident signal under hot conditions and achieve the appropriate voltage and frequency. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range. This effectively allows the upper voltage and frequency limits to be exceeded during DG acceleration and stabilization. As stated above, the proposed Surveillance will require the establishment of the minimum frequency (58.8 Hz) and voltage (6800 V) within the given time frame. The accident analyses require that the DGs be capable of being loaded within 10 seconds. This can be accomplished at 58.8 Hz and 6800 V. While the upper level requirement regarding the frequency and voltage acceptance criterion is being eliminated, the requirement to establish a steady state voltage and frequency has been retained. 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. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L20 *(Category 3 – Relaxation of Completion Time)* CTS 3.0.5 allows a system, subsystem, train, component, or device to be considered OPERABLE with an inoperable emergency or normal power source provided its corresponding normal or emergency power source is OPERABLE and its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE. CTS 3.0.5 requires a unit shut down to start within two hours with these requirements not met. CTS 3.0.5 also provides an explicit time period to be in HOT STANDBY (MODE 3), HOT SHUTDOWN (MODE 4), and COLD SHUTDOWN (MODE 5). ITS 3.8.1 ACTION A (one associated unit offsite source inoperable) and ACTION C (one opposite unit offsite source inoperable) require ~~requires~~ the declaration of required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by Required Actions A.2 and C.2 ~~the Required Action A.2~~ is 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION B (one ~~associated unit DG~~ or both DGs in a train inoperable) requires the declaration of required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable. The Completion Time allowed by the Required Action B.2 is 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION D ~~E~~ (two offsite circuits inoperable) requires the declaration of required feature(s) inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action D ~~E~~.1 is 12 hours from discovery of Condition D ~~E~~ concurrent with inoperability of redundant required features. This changes the CTS by allowing more time to restore inoperable equipment and

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

replaces the explicit times to be in MODE 3, MODE 4, and MODE 5 with a requirement to declare the affected features inoperable (and thus to take the ACTIONS required by the individual system LCO, including possible shut down of the unit).

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. This change allows more time to restore inoperable equipment when required AC Sources are inoperable concurrent with inoperabilities of redundant required features and deletes the explicit times to be in MODE 3, MODE 4, and MODE 5. By declaring the affected supported equipment inoperable, and as a result, taking the Technical Specifications ACTIONS of the affected supported equipment, unit operation is maintained within the bounds of the Technical Specifications and approved ACTIONS. Since the AC Sources support the OPERABILITY of the affected equipment, it is appropriate that the proper action, in this condition, would be to declare that affected supported equipment inoperable. CTS 3.0.5 is overly restrictive, in that if the associated supported equipment were inoperable for other reasons and the redundant equipment was also inoperable, a restoration time is sometimes provided, in other CTS sections. The 24 hour Completion Time when one associated unit offsite circuit is inoperable is acceptable because: a) the redundant counterpart to the inoperable required feature is still OPERABLE although single failure protection may have been lost; b) the capacity and capability of the remaining AC Sources is still available; c) a reasonable time for repairs is provided for restoration before the unit is subjected to transients associated with shut down; and d) the low probability of a DBA occurring during this period. The 12 hour Completion Time when two offsite circuits are inoperable is acceptable because Regulatory Guide 1.93 allows a Completion Time of 24 hours for two 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 ~~associated unit~~ 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 shut down. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC Sources, reasonable time for repairs, and low probability of a DBA occurring during this period. This change is designated as less restrictive because additional time is allowed to restore equipment to OPERABLE status and the change deletes the explicit times to reach MODE 3, MODE 4, and MODE 5.

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CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
ACTION a		A.3	Restore ~~[required]~~ offsite circuit to OPERABLE status.	72 hours	4
ACTIONS b, c, and e	B. ~~One [required] DG inoperable.~~ 1A-A INSERT 1	B.1	Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit~~(s)~~.	1 hour AND Once per 8 hours thereafter	4 ~~5~~
		AND			
DOC L20		B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND			
ACTION b		B.3.1	Determine OPERABLE DG~~(s)~~ ~~is~~ are not inoperable due to common cause failure.	~~[~~24~~]~~ hours	4 1
		OR			
ACTION b ACTION c		B.3.2	Perform SR 3.8.1.2 for OPERABLE DG~~(s)~~.	~~[~~24~~]~~ hours	4 1
		AND			
ACTION b		B.4	Restore ~~[required]~~ DG(s) to OPERABLE status.	~~72 hours~~ 7 days	4 1

INSERT 2 5

~~5~~ 4

INSERT 1

~~DOC L01~~

~~OR~~

~~DG 1B-B inoperable.~~

~~OR~~

~~DGs 1A-A and 2A-A inoperable.~~

One or more Train A DG(s) inoperable.

OR

One or more Train B DG(s) inoperable.

~~OR~~

~~DGs 1B-B and 2B-B inoperable.~~

5

INSERT 2

DOC L01 DOC L20	C. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable.	C.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit. AND C.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. AND C.3 ~~Declare associated required feature(s) inoperable.~~ Restore offsite circuit to OPERABLE status.	1 hour AND Once per 8 hours thereafter 24 hours from discovery of no offsite power to 6.9 kV Shutdown Board 2A-A or 2B-B concurrent with inoperability of redundant required feature(s) 7 days

Insert Page 3.8.1-2a

5

INSERT 2 (Continued)

D. DG 2A-A or 2B-B inoperable.	D.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	D.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND		
	D.3.1	Determine OPERABLE DGs are not inoperable due to common cause failure.	24 hours
	OR		
	D.3.2	Perform SR 3.8.1.2 for OPERABLE DGs.	24 hours
	AND		
	D.4	Declare associated required feature(s) inoperable.	7 days

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CTS

AC Sources - Operating
3.8.1

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION d DOC L20	~~C~~ ~~E~~ D. Two ~~[required]~~ offsite circuits inoperable.	~~C~~ ~~E~~ D.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ ~~E~~ D concurrent with inoperability of redundant required features	5
		AND		
ACTION d		~~C~~ ~~E~~ D.2 Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours	5 4
ACTION c DOC A03	~~D~~ ~~F~~ E. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C.	--------------------NOTE-------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition ~~D~~ ~~F~~ E is entered with no AC power source to ~~any train~~ 6.9 kV Shutdown Board 1A-A or 1B-B. --		5
	AND			
ACTION c	~~One [required]~~ DG 1A-A or 1B-B inoperable.			4
ACTION c		~~D~~ ~~F~~ E.1 Restore ~~[required]~~ offsite circuit to OPERABLE status.	12 hours	
		OR		
	~~INSERT 3~~	~~D~~ ~~F~~ E.2 Restore ~~[required]~~ DG to OPERABLE status.	12 hours	5 4
ACTION e	~~E~~ ~~J~~ F. ~~Two [required]~~ One or more Train A DG(s) inoperable.	~~E~~ ~~J~~ F.1 Restore one ~~[required]~~ train of DGs to OPERABLE status.	2 hours	5
	INSERT 4			5

SEQUOYAH UNIT 1

~~Westinghouse STS~~

Amendment XXX

~~Rev. 4.0~~ 1

5 ~~**INSERT 3**~~

~~DOC L01~~	G. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable. AND DG 1A-A or 1B-B inoperable.	G.1	Declare required feature(s) on associated Unit 2 6.9 kV Shutdown Board inoperable.	7 days
~~DOC L01~~	H. One offsite circuit inoperable for reasons other than Condition C. AND DG 2A-A or 2B-B inoperable.	H.1	Declare required feature(s) on associated Unit 2 6.9 kV Shutdown Board inoperable.	7 days

Insert Page 3.8.1-3a

5 ~~**INSERT 3 (continued)**~~

~~DOC L01~~ I. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable. AND DG 2A-A or 2B-B inoperable.	--------------------NOTE-------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition I is entered with no AC power source to 6.9 kV Shutdown Board 2A-A or 2B-B. -- I.1 Restore offsite circuit to OPERABLE status. OR I.2 Restore DG to OPERABLE status.	 7 days 7 days

5 **INSERT 4**

ACTION e

AND

One or more Train B DG(s) inoperable.

Insert Page 3.8.1-3b

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~-----REVIEWER'S NOTE----- This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event.~~ ~~------------------------------------~~ ~~F. [One [required] [automatic load sequencer] inoperable.~~	~~F.1 Restore [required] [automatic load sequencer] to OPERABLE status.~~	~~[12] hours]~~ 3
G ACTIONS a, b, c, d, e ~~K~~ ~~G~~. Required Action and associated Completion Time of Condition A, B, C, D, E, or F ~~A, B, C, D~~, E, or ~~[F]~~ ~~F, I,~~ ~~J~~ not met. DOC M01	~~G~~ ~~K~~ G .1 Be in MODE 3. AND ~~G~~ ~~K~~ G .2 Be in MODE 5.	6 hours 36 hours 3 5
INSERT 5 ~~H. Three or more [required] AC sources inoperable.~~	~~H.1 Enter LCO 3.0.3.~~	~~Immediately~~ 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.1.1 4.8.1.1.1.a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 4 6

6

5 **INSERT 5**

DOC A04 H ~~L~~. Two offsite circuits inoperable. AND One or more Train A DG(s) inoperable. OR One or more Train B DG(s) inoperable.	~~L~~ H.1 Enter LCO 3.0.3.	Immediately
DOC A04 I ~~M~~. One offsite circuit inoperable. AND One or more Train A DG(s) inoperable. AND One or more Train B DG(s) inoperable.	~~M~~ I.1 Enter LCO 3.0.3.	Immediately

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ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
ACTION a		A.3	Restore ~~[required]~~ offsite circuit to OPERABLE status.	72 hours	4
ACTIONS b, c, and e	B. ~~One [required] DG inoperable.~~ ~~2A-A~~ INSERT 1	B.1	Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit~~(s)~~.	1 hour AND Once per 8 hours thereafter	4 ~~5~~
		AND			
DOC L20		B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND			
ACTION b		B.3.1	Determine OPERABLE DG~~(s)~~ ~~is~~ are not inoperable due to common cause failure.	~~[~~24~~]~~ hours	4 1
		OR			
ACTION b ACTION c		B.3.2	Perform SR 3.8.1.2 for OPERABLE DG~~(s)~~.	~~[~~24~~]~~ hours	4 1
		AND			
ACTION b		B.4	Restore ~~[required]~~ DG(s) to OPERABLE status.	~~72 hours~~ 7 days	4 1

INSERT 2 5

~~5~~ 4

INSERT 1

~~DOC L01~~

~~OR~~

~~DG 2B-B inoperable.~~

~~OR~~

~~DGs 1A-A and 2A-A inoperable.~~

One or more Train A DG(s) inoperable.

OR

One or more Train B DG(s) inoperable.

~~OR~~

~~DGs 1B-B and 2B-B inoperable.~~

5

INSERT 2

DOC L01

DOC L20

C. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable.	C.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	C.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to 6.9 kV Shutdown Board 1A-A or 1B-B concurrent with inoperability of redundant required feature(s)
	AND		
	C.3	~~Declare associated required feature(s) inoperable.~~ Restore offsite circuit to OPERABLE status.	7 days

Insert Page 3.8.1-2a

5

INSERT 2 (Continued)

D. DG 1A-A or 1B-B inoperable.	D.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	D.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND		
	D.3.1	Determine OPERABLE DGs are not inoperable due to common cause failure.	24 hours
	OR		
	D.3.2	Perform SR 3.8.1.2 for OPERABLE DGs.	24 hours
	AND		
	D.4	Declare associated required feature(s) inoperable.	7 days

Insert Page 3.8.1-2b

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION d DOC L20	~~C~~ ~~E~~ D. Two ~~[required]~~ offsite circuits inoperable.	~~C~~ ~~E~~ D.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ ~~E~~ D concurrent with inoperability of redundant required features	5
		AND		
ACTION d		~~C~~ ~~E~~ D.2 Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours	5 4
ACTION c DOC A03	~~D~~ ~~F~~ E. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C. AND ~~One [required]~~ DG 2A-A or 2B-B inoperable.	--------------------NOTE-------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition ~~D~~ ~~F~~ E is entered with no AC power source to ~~any train~~ 6.9 kV Shutdown Board 2A-A or 2B-B. --		5 4
ACTION c		~~D~~ ~~F~~ E.1 Restore ~~[required]~~ offsite circuit to OPERABLE status.	12 hours	
		OR		
ACTION c	~~INSERT 3~~	~~D~~ ~~F~~ E.2 Restore ~~[required]~~ DG to OPERABLE status.	12 hours	5 4
ACTION e	~~E~~ ~~J~~ F. One or more Train A ~~Two [required]~~ DG~~s~~(s) inoperable. INSERT 4	~~E~~ ~~J~~ F.1 Restore one train of ~~[required]~~ DGs to OPERABLE status.	2 hours	5
				5

~~5~~ **~~INSERT 3~~**

~~DOC L01~~	G.	One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable. <u>AND</u> DG 2A-A or 2B-B inoperable.	G.1	Declare required feature(s) on associated Unit 1 6.9 kV Shutdown Board inoperable.	7 days
~~DOC L01~~	H.	One offsite circuit inoperable for reasons other than Condition C. <u>AND</u> DG 1A-A or 1B-B inoperable.	H.1	Declare required feature(s) on associated Unit 1 6.9 kV Shutdown Board inoperable.	7 days

Insert Page 3.8.1-3a

5 ~~**INSERT 3 (continued)**~~

~~DOC L01~~ I. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable. AND DG 1A-A or 1B-B inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition I is entered with no AC power source to 6.9 kV Shutdown Board 1A-A or 1B-B. --- I.1 Restore offsite circuit to OPERABLE status. OR I.2 Restore DG to OPERABLE status.	 7 days 7 days

5 **INSERT 4**

ACTION e

AND

One or more Train B DG(s) inoperable.

~~Insert Page 3.8.1-3b~~

CTS

AC Sources - Operating
3.8.1

ACTIONS (continued)

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

ACTIONS a, b, c, d, e

A, B, C, D, E, or F

DOC M01

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.1.1 4.8.1.1.1.a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ 4 6 In accordance with the Surveillance Frequency Control Program ~~]~~ 6

SEQUOYAH UNIT 2 Amendment XXX

5 **INSERT 5**

DOC A04 H	~~L~~. Two offsite circuits inoperable. <u>AND</u> One or more Train A DG(s) inoperable. <u>OR</u> One or more Train B DG(s) inoperable.	~~L~~.1 H Enter LCO 3.0.3.	Immediately
DOC A04 I	~~M~~. One offsite circuit inoperable. <u>AND</u> One or more Train A DG(s) inoperable. <u>AND</u> One or more Train B DG(s) inoperable.	~~M~~.1 I Enter LCO 3.0.3.	Immediately

Insert Page 3.8.1-4

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

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

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

3. ISTS LCO 3.8.1.c and ISTS 3.8.1 ACTION F have been deleted since SQN Units 1 and 2 do not use load sequencers. Each load or load block is sequenced with the use of its associated time delay relay. Each major ESF component has individual time delay relays that operate individual components, not all ESF components. Thus, if a single time delay relay fails, only the individual component and the DG could be affected. Subsequent Conditions and Required Actions have been renumbered, as applicable. ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), and ISTS SR 3.8.1.19 (ITS SR 3.8.1.18) have been revised to reflect the use of time delay relays.

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

5. ~~Changes were made to ISTS LCO 3.8.1 to ensure the appropriate AC power sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4 to satisfy the design requirements. This modification was necessary due to shared systems between Units 1 and 2. This is an exception that is intended to allow taking the ACTIONS associated with inoperable shared equipment in lieu of requiring the opposite unit AC sources to be restored to OPERABLE status within a specified Completion Time. This exception is acceptable since, with the opposite unit equipment inoperable and the associated ACTIONS entered, the opposite unit AC Sources provide no additional assurance of meeting the safety criteria of the given unit's AC power sources.~~ INSERT JFD 5

   SR Notes associated with ISTS SR 3.8.1.8 (ITS SR 3.8.1.8), ISTS SR 3.8.1.9 (ITS SR 3.8.1.9), ISTS SR 3.8.1.10 (ITS SR 3.8.1.10), ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.13 (ITS SR 3.8.1.13), ISTS SR 3.8.1.14 (ITS SR 3.8.1.14), ISTS SR 3.8.1.16 (ITS SR 3.8.1.16), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), and ISTS SR 3.8.1.19 (ITS SR 3.8.1.18) have been revised to allow performance of the affected SR on opposite unit shutdown board or DGs when the given unit is in a restricted MODE.

6. ISTS SR 3.8.1.1 (ITS SR 3.8.1.1), ISTS SR 3.8.1.2 (ITS SR 3.8.1.2), ISTS SR 3.8.1.3 (ITS SR 3.8.1.3), ISTS SR 3.8.1.4 (ITS SR 3.8.1.4), ISTS SR 3.8.1.5 (ITS SR 3.8.1.5), ISTS SR 3.8.1.6 (ITS SR 3.8.1.6), ISTS SR 3.8.1.7 (ITS SR 3.8.1.7), ISTS SR 3.8.1.8 (ITS SR 3.8.1.8), ISTS SR 3.8.1.9 (ITS SR 3.8.1.9), ISTS SR 3.8.1.10 (ITS SR 3.8.1.10), ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.13 (ITS SR 3.8.1.13), ISTS SR 3.8.1.14 (ITS SR 3.8.1.14), ISTS SR 3.8.1.15 (ITS SR 3.8.1.15), ISTS SR 3.8.1.16 (ITS SR 3.8.1.16), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), ISTS SR 3.8.1.19 (ITS SR 3.8.1.18), and ISTS SR 3.8.1.20 (ITS SR 3.8.1.19) provide two options for controlling the Frequencies of Surveillance Requirements. SQN is proposing to control the

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INSERT JFD 5

Changes were made to the ISTS to reflect the interaction between an operating unit's AC power sources and those credited features needing AC power from the opposite unit's associated AC power sources. ITS 3.8.1 ACTION C has been added to address the condition when the offsite circuit is inoperable solely due to an inoperable power source to the opposite unit's 6.9 kV Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable), and requires, in part, restoration of the inoperable offsite circuit within 7 days. ISTS 3.8.1 ACTIONS A and D have been revised to address conditions when the offsite circuit is inoperable for reasons other than ITS 3.8.1 Condition C. ITS 3.8.1 ACTION A requires restoration of the inoperable offsite circuit in 72 hours. ITS 3.8.1 ACTION E requires restoration of an inoperable AC source in 12 hours. This change reflects a restoration Completion Time commensurate with the importance of maintaining the AC power source capable of supporting the affected shared systems. With the addition of ITS 3.8.1 ACTION C, subsequent ISTS ACTIONS have been renumbered.

BASES

APPLICABILITY

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

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

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

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

ACTIONS

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

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable ~~;~~ for reasons other than Condition C, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~ ~~E~~ D, for two offsite circuits inoperable, is entered. 5 5

~~-----REVIEWER'S NOTE-----~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~

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. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. 1

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

B.1

To ensure a highly reliable power source remains with ~~an~~ INSERT 9 inoperable ~~DG~~, it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. 5

~~-----REVIEWER'S NOTE-----~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~-----~~

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG(s) is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG(s). 5 5

5 **INSERT 9**

~~DG 1A-A, DG 1B-B, DGs 1A-A and 2A-A, or DGs 1B-B and 2B-B~~

one or more Train A DGs, or one or more Train B DGs

BASES

ACTIONS (continued)

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

a. An inoperable DG exists and

b. A required feature on the other train ~~(Train A or Train B)~~ is inoperable. 5

If at any time during the existence of this Condition (one or more DGs in a train ~~DG~~ inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked. 5

Discovering one or more DGs in a train ~~required DG~~ inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is Acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 5 4

In this Condition, the remaining OPERABLE DGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1 5

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(s)~~, the other DG~~(s)~~ would be declared inoperable upon discovery and Condition ~~J~~ F ~~E~~ of LCO 3.8.1 would be entered. INSERT 10 Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(s)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG. 5

5 **INSERT 10**

if one or more DG(s) in Train A and Train B are inoperable

BASES

ACTIONS (continued)

(s)

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

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

B.4

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

(s) AC Electrical Power

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The ~~72 hour~~ 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

INSERT 11 5

~~C~~ ~~E~~ D.1 and ~~C~~ ~~E~~ D.2 5

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

5 **INSERT 11**

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

Condition C is entered for an offsite circuit inoperable solely due to an inoperable power source to 6.9 kV Shutdown Board 2A-A or 2B-B. Required Action C.1 verifies the OPERABILITY of the remaining offsite circuit within an hour of the inoperability and every 8 hours thereafter. Since the Required Action only specifies "perform," a failure of the SR 3.8.1.1 acceptance criteria does not result in a Required Action not met.

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

a. 6.9 kV Shutdown Board 2A-A or 2B-B has no offsite power; and
b. A required feature on the other train is inoperable.

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

A Completion Time of 24 hours is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE offsite circuit and DGs are adequate to support these functions. The Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

Operation may continue in Condition C for a period of 7 days. With one offsite circuit inoperable, the reliability of the functions is degraded. The potential for the loss of offsite power to the redundant feature(s) is increased, with the attendant potential for a challenge to their safety functions.

The required offsite circuit must be returned to OPERABLE status within 7 days~~, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered~~. The 7 days Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

5

INSERT 11 (Continued)

D.1, D.2, D.3 and D.4

To ensure a highly reliable power source remains with an inoperable DG to a Unit 2 6.9 kV Shutdown Board, it is necessary to verify the availability of the 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 a Required Action being not met. Required Action D.1 verifies the OPERABILITY of the required offsite sources within an hour of the inoperability and every 8 hours thereafter. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must be entered.

Required Action D.2 is intended to provide assurance that a loss of offsite power, during the period that an LCO 3.8.1.d DG is inoperable, does not result in a complete loss of the safety functions.

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

a. An inoperable DG to 6.9 kV Shutdown Board 2A-A or 2B-B exists; and
b. A redundant feature in the same system is inoperable.

If at any time during the existence of Condition D (one DG to 6.9 kV Shutdown Board 2A-A or 2B-B) a redundant feature in the same system subsequently becomes inoperable, this Completion Time begins to be tracked. The four hour Completion Time is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and DGs are adequate to support the functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

D.3.1 and D.3.2

Required Action D.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on another DG, the other DG would be declared inoperable, and upon discovery, Condition J of LCO 3.8.1 would be entered, if one or more DG(s) in Train A and Train B are inoperable. Otherwise, if the inoperability exists on the other DG in the same train, the other DG would be declared inoperable upon discovery, Condition B would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action D.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DGs, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

5

INSERT 11 (Continued)

Operation may continue in Condition D for a period of 7 days. With one Unit 2 DG inoperable, the reliability of the respective function is degraded. The potential for the loss of a DG to the redundant feature(s) is increased, with the attendant potential for a challenge to respective safety function.

The required DG must be returned to OPERABLE status within 7 days, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

BASES

ACTIONS (continued)

The Completion Time for Required Action ~~C~~ E 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: 5

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition ~~C~~ E D (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~ E D for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 5

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

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

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

With both ~~of the required~~ offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

BASES

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A. or Condition C, as applicable 5

E F F E

~~D~~.1 and ~~D~~.2 5

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition ~~D~~ F are modified by a Note to indicate that when Condition ~~D~~ F is entered with no AC source to ~~any train~~ 6.9 kV Shutdown Board 1A-A or 1B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition ~~D~~ F to provide requirements for the loss of one offsite circuit and one DG to 6.9 kV Shutdown Board 1A-A or 1B-B, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train. E 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~D~~ F for a period that should not exceed 12 hours. E 5

E F

In Condition ~~D~~ F, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition ~~C~~ E (loss of both ~~required~~ offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. D 5

~~INSERT 12~~

F J

~~E~~.1

With ~~Train A and Train B DGs~~ one or more Train A DG(s) and one or more Train B DG(s) inoperable, there are ~~no remaining~~ insufficient standby AC sources available to power an entire load group. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that 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 5

5 ~~**INSERT 12**~~

G.1 and H.1

In Conditions G and H, individual redundancy is lost in the offsite electrical power system for one unit and the onsite AC electrical power system for the other unit. Since Conditions B and C are entered concurrent with entry into Condition G, and Conditions A and D are entered concurrent with entry into Condition H, the Required Actions of Conditions B and C (or Conditions A and D) provide the appropriate compensatory measures to ensure the onsite and offsite power sources are either restored to an OPERABLE status, or the associated required features are declared inoperable, thereby requiring entry into the appropriate Conditions associated with the associated feature's LCO. The Completion Times of Required Actions G.1 and H.1 are consistent with the Completion Times of Required Actions C.3 and D.4. If, while in Condition G or H, a redundant required feature is determined to be inoperable, the required feature(s) would be declared inoperable at the Completion Times specified in Conditions A, B, C, or D, as applicable.

I.1 and I.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 I are modified by a Note to indicate that when Condition I is entered with no AC source to 6.9 kV Shutdown Board 2A-A or 2B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition I to provide requirements for the loss of one offsite power source and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized 6.9 kV Shutdown Board.

In Condition I, individual redundancy is lost in the offsite electrical power system and the onsite AC electrical power system. Concurrent with entry into Condition I, entry into Condition C (inoperable offsite power source) and Condition D (inoperable DG) are required. The Required Actions of Conditions C and D ensure the remaining offsite circuit and DGs are OPERABLE and that required features with no offsite or onsite power sources are declared inoperable when its redundant required feature is inoperable within the Completion Times of Required Actions C.2 and D.2.

ACTIONS (continued)

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.

In this Condition,

~~According to Reference 6, with both DGs inoperable,~~ operation may continue for a period that should not exceed 2 hours. 5

, consistent with the guidance provided in Reference 6 5

~~[F.1~~ 5

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

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

G ~~K~~ ~~K~~ G

~~G~~.1 and ~~G~~.2 5

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

BASES

ACTIONS (continued)

H I

L.1 and M.1

~~H.1~~

H and I

Condition ~~H~~ L and M correspond~~s~~ to a level of degradation in which ~~all~~ redundancy in the AC electrical power supplies cannot be assured ~~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. 5

SURVEILLANCE REQUIREMENTS

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

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 6210 ~~[3740]~~ V is 90% of the nominal 6900 ~~4160~~ V output voltage. This value, which is specified in ANSI C84.1 (Ref. 10 ~~11~~), allows for voltage drop to the terminals of 6600 ~~4000~~ V motors whose minimum operating voltage is specified as 90% or 5940 ~~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 7260 ~~[4756]~~ V is equal to the maximum operating voltage specified for 6600 ~~4000~~ V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 6600 ~~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). 2 1 1 1 2 1 1

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. ~~[The 7 day Frequency is~~ 7

APPLICABILITY

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

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

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

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

ACTIONS

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

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable for reasons other than Condition C, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~ ~~E~~ D, for two offsite circuits inoperable, is entered. 5 5

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~--~~

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. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. 1

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

B.1

To ensure a highly reliable power source remains with INSERT 9 ~~an~~ inoperable ~~DG~~, it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. 5

~~-------------------------------REVIEWER'S NOTE-------------------------------~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~--~~

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG(s) is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG(s). 5 5

5 **INSERT 9**

~~DG 1A-A, DG 1B-B, DGs 1A-A and 2A-A, or DGs 1B-B and 2B-B~~

one or more Train A DGs, or one or more Train B DGs

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BASES

ACTIONS (continued)

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

a. An inoperable DG exists and

b. A required feature on the other train ~~(Train A or Train B)~~ is inoperable. 5

or more DGs in a train

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

or more DGs in a train

Discovering one ~~required DG~~ inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is ~~A~~acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 5 4

s AC Electrical Power

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1 5

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(~~s~~)~~, the other DG~~(~~s~~)~~ would be declared inoperable upon discovery and Condition ~~E~~ J of LCO 3.8.1 would be entered. INSERT 10 Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(~~s~~)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG. 5

F

5 **INSERT 10**

if one or more DG(s) in Train A and Train B are inoperable

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BASES

ACTIONS (continued)

(s) 5

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

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

B.4

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

(s) AC Electrical Power 5

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The ~~72 hour~~ 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

INSERT 11 5

D D D

~~C~~ ~~E~~.1 and ~~C~~ ~~E~~.2 5

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

5 **INSERT 11**

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

Condition C is entered for an offsite circuit inoperable solely due to an inoperable power source to 6.9 kV Shutdown Board 1A-A or 1B-B. Required Action C.1 verifies the OPERABILITY of the remaining offsite circuit within an hour of the inoperability and every 8 hours thereafter. Since the Required Action only specifies "perform," a failure of the SR 3.8.1.1 acceptance criteria does not result in a Required Action not met.

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

a. 6.9 kV Shutdown Board 1A-A or 1B-B has no offsite power; and
b. A required feature on the other train is inoperable.

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

A Completion Time of 24 hours is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE offsite circuit and DGs are adequate to support these functions. The Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

Operation may continue in Condition C for a period of 7 days. With one offsite circuit inoperable, the reliability of the functions is degraded. The potential for the loss of offsite power to the redundant feature(s) is increased, with the attendant potential for a challenge to their safety functions.

The required offsite circuit must be returned to OPERABLE status within 7 days~~, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered~~. The 7 days Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

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5

INSERT 11 (Continued)

D.1, D.2, D.3, and D.4

To ensure a highly reliable power source remains with an inoperable DG to a Unit 1 6.9 kV Shutdown Board, it is necessary to verify the availability of the 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 a Required Action being not met. Required Action D.1 verifies the OPERABILITY of the required offsite sources within an hour of the inoperability and every 8 hours thereafter. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must be entered.

Required Action D.2 is intended to provide assurance that a loss of offsite power, during the period that an LCO 3.8.1.d DG is inoperable, does not result in a complete loss of the safety functions.

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

a. An inoperable DG to 6.9 kV Shutdown Board 1A-A or 1B-B exists; and
b. A redundant feature in the same system is inoperable.

If at any time during the existence of Condition D (one DG to 6.9 kV Shutdown Board 1A-A or 1B-B) a redundant feature in the same system subsequently becomes inoperable, this Completion Time begins to be tracked. The four hour Completion Time is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and DGs are adequate to support the functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

D.3.1 and D.3.2

Required Action D.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on another DG, the other DG would be declared inoperable, and upon discovery, Condition J of LCO 3.8.1 would be entered, if one or more DG(s) in Train A and Train B are inoperable. Otherwise, if the inoperability exists on the other DG in the same train, the other DG would be declared inoperable upon discovery, Condition B would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action D.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DGs, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

5

INSERT 11 (Continued)

~~Operation may continue in Condition D for a period of 7 days. With one Unit 2 DG inoperable, the reliability of the respective function is degraded. The potential for the loss of a DG to the redundant feature(s) is increased, with the attendant potential for a challenge to respective safety function.~~

~~The required DG must be returned to OPERABLE status within 7 days, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.~~

BASES

ACTIONS (continued)

D

The Completion Time for Required Action ~~C~~E.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: 5

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

D

If at any time during the existence of Condition ~~C~~E (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. 5

D According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~E for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 5

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

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

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

With both ~~of the required~~ offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

BASES

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A. or Condition C, as applicable 5

E E F F 5

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

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition ~~D~~ F are modified by a Note to indicate that when Condition ~~D~~ F is entered with no AC source to ~~any train~~ 6.9 kV Shutdown Board 2A-A or 2B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition ~~D~~ F to provide requirements for the loss of one offsite circuit and one DG to 6.9 kV Shutdown Board 2A-A or 2B-B, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train. E 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~D~~ F for a period that should not exceed 12 hours. E E F 5

In Condition ~~D~~ F, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition ~~C~~ E (loss of both ~~required~~ offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. D 5

~~INSERT 12~~

J F

~~E~~.1

one or more Train A DG(s) and one or more Train B DG(s) insufficient 5

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

5 **~~INSERT 12~~**

G.1 and H.1

In Conditions G and H, individual redundancy is lost in the offsite electrical power system for one unit and the onsite AC electrical power system for the other unit. Since Conditions B and C are entered concurrent with entry into Condition G, and Conditions A and D are entered concurrent with entry into Condition H, the Required Actions of Conditions B and C (or Conditions A and D) provide the appropriate compensatory measures to ensure the onsite and offsite power sources are either restored to an OPERABLE status, or the associated required features are declared inoperable, thereby requiring entry into the appropriate Conditions associated with the associated feature's LCO. The Completion Times of Required Actions G.1 and H.1 are consistent with the Completion Times of Required Actions C.3 and D.4. If, while in Condition G or H, a redundant required feature is determined to be inoperable, the required feature(s) would be declared inoperable at the Completion Times specified in Conditions A, B, C, or D, as applicable.

I.1 and I.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 ~~I~~ are modified by a Note to indicate that when Condition I is entered with no AC source to 6.9 kV Shutdown Board 1A-A or 1B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition I to provide requirements for the loss of one offsite power source and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized 6.9 kV Shutdown Board.

In Condition I, individual redundancy is lost in the offsite electrical power system and the onsite AC electrical power system. Concurrent with entry into Condition I, entry into Condition C (inoperable offsite power source) and Condition D (inoperable DG) are required. The Required Actions of Conditions C and D ensure the remaining offsite circuit and DGs are OPERABLE and that required features with no offsite or onsite power sources are declared inoperable when its redundant required feature is inoperable within the Completion Times of Required Actions C.2 and D.2.

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ACTIONS (continued)

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.

In this Condition,

~~According to Reference 6, with both DGs inoperable~~, operation may continue for a period that should not exceed 2 hours. 5

, consistent with the guidance provided in Reference 6 5

~~[F.1~~ 5

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

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

G ~~K~~ G ~~K~~

~~G~~.1 and ~~G~~.2 5

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

BASES

ACTIONS (continued)

H L.1 and M.1 I

~~H~~.1

H and I

s L and M

Condition ~~H~~ correspond~~s~~ to a level of degradation in which ~~all~~ redundancy in the AC electrical power supplies cannot be assured ~~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. 5

SURVEILLANCE REQUIREMENTS

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

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 6900 ~~[3740]~~ V is 90% of the nominal 6900 ~~4160~~ V output voltage. This value, which is specified in ANSI C84.1 (Ref. 10 ~~11~~), allows for voltage drop to the terminals of 6600 ~~4000~~ V motors whose minimum operating voltage is specified as 90% or 5940 ~~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 7260 ~~[4756]~~ V is equal to the maximum operating voltage specified for 6600 ~~4000~~ V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 6600 ~~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). 2 1 1 1 2 1 1

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. ~~[The 7 day Frequency is~~ 7

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

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L01

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

CTS 3.8.1.1 ACTION a provides actions for one inoperable offsite circuit and allows 72 hours to restore the inoperable offsite circuit to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable and allows 7 days to restore the inoperable DG(s) to OPERABLE status before requiring the unit to be shut down and cooled down.~~ CTS 3.8.1.1 ACTION c provides actions for one inoperable offsite circuit and one inoperable DG and allows 12 hours to restore at least one of the inoperable AC sources to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION d provides actions for two inoperable offsite circuits and allows 24 hours to restore at least one of the inoperable offsite circuits to OPERABLE status before requiring the unit to be shut down. CTS 3.8.1.1 ACTION e provides actions for one or two inoperable DGs in both trains and allows 2 hours to restore the inoperable DG(s) in one train to OPERABLE status before requiring the unit to be shut down and cooled down. CTS 3.8.1.1 ACTION f states LCO 3.0.4.b is not applicable to DGs. The ITS ACTIONS are modified by a Note stating LCO 3.0.4.b is not applicable to DGs.~~ ITS 3.8.1 ACTION A provides actions for one inoperable offsite circuit for reasons other than Condition C, and allows 72 hours to restore the inoperable offsite power source to OPERABLE status. ~~ITS 3.8.1 ACTION B provides actions for one inoperable associated unit's DG or both DGs in one train inoperable, and allows 7 days to restore the inoperable DG(s) to OPERABLE status.~~ ITS 3.8.1 ACTION C provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board, and ~~requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite circuit cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION D requires declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION E requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 12 hours. Otherwise, one offsite circuit is required to be restored to an OPERABLE status in 24 hours.~~ ITS 3.8.1 ACTION ~~F~~ provides actions for one associated unit's offsite circuit inoperable concurrent with one associated unit's DG inoperable, and allows 12 hours to restore one of the inoperable AC sources to OPERABLE status. ~~ITS ACTION G requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no offsite power available inoperable in 7 days. ITS ACTION H requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no DG available inoperable in 7 days. ITS ACTION I provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board concurrent with one opposite unit's DG inoperable, and allows 7 days~~

E

requires: 1) performance of ITS SR 3.8.1.1 for the OPERABLE offsite circuit in 1 hour and once per 8 hours thereafter, 2) declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and 3) restoration of the offsite circuit to OPERABLE status in 7 days.

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ITS 3.8.1, AC SOURCES - OPERATING

For the condition of one offsite circuit inoperable solely due to an inoperable power source to an opposite unit's 6.9 kV Shutdown Board concurrent with an inoperable DG (similar to CTS 3.8.1.1 Action c), ITS 3.8.1 Conditions B and C would be entered concurrently. ITS 3.8.1 ACTIONS B and C require, in part, restoration of the inoperable AC sources (circuit and DG) to an OPERABLE status in 7 days. This changes the CTS by providing a new ITS 3.8.1 ACTION C to allow 7 days to restore an inoperable offsite circuit to an OPERABLE status, if the offsite circuit is inoperable solely due to an inoperable power source to an opposite unit's Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable).

~~to restore one of the inoperable AC sources to OPERABLE status. In addition, a Note~~

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and DGs. The onsite Class 1E AC Electrical Distribution System supplies electrical power to two power trains shared between the two units. The core cooling and containment cooling system loads (e.g., Safety Injection (SI) pumps, Auxiliary Feedwater (AFW) pumps, Residual Heat Removal (RHR) pumps, Centrifugal Charging pumps, Containment Spray pumps, and Air Return System (ARS) fans) are unitized to the respective unit's 6.9 kV Shutdown Boards. However, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVs), and Control Room HVAC (CRACS)) are shared between the units. The AC sources for the shared loads are distributed across both unit's shutdown boards. Therefore, two qualified offsite circuits and four DGs capable of supplying the onsite Class 1E AC Electrical Distribution System are required to be OPERABLE. However, the impacts of an inoperable offsite power source or DG on an opposite unit's 6.9 kV Shutdown Board differ from the impacts of an inoperable offsite power source or DG on an associated unit's 6.9 kV Shutdown Board, due to the loads powered from the respective board.

For example, with SQN Unit 1 in MODES 1, 2, 3, and 4, 6.9 kV Shutdown Boards 1A-A and 1B-B, and the associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to the ESF systems powered from those boards. Additionally, 6.9 kV Shutdown Boards 2A-A and 2B-B and associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to any required shared components required for Unit 1. If it is necessary to de-energize 6.9 kV Shutdown Board 2A-A or 2B-B, the redundant shared systems can be aligned prior to de-energizing the shutdown board to ensure no loss of safety function will occur. Upon removing the shutdown board from service, the applicable Conditions and Required Actions for the affected shared system LCOs will be entered and tracked and either the offsite power source or the DG is required to be restored to an OPERABLE status in 7 days.

In the event of an unplanned loss of an offsite power source to an opposite unit's 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and restoration of the offsite circuit to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite power source cannot be restored to an OPERABLE status. Similarly, in~~ In the event of an unplanned loss of a DG to an opposite unit 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours, and restoration of the DG to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared~~

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

~~inoperable in 7 days, if the DG cannot be restored to an OPERABLE status~~. In both cases, the ACTIONS require performance of SR 3.8.1.1 for the required OPERABLE offsite circuit(s) within 1 hour and once per 8 hours thereafter.

The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair inoperable features. If the necessary repairs cannot be made within the established Completion Time, ITS 3.8.1 ACTION G is entered and the unit is required to be shut down to MODE 3 in 6 hours and MODE 5 in 36 hours. ~~the associated required features are declared inoperable and the applicable Conditions and Required Actions for the affected shared system LCOs are entered and tracked~~. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's ~~AC sources~~ offsite circuit commensurate with the importance of maintaining ~~these AC sources~~ offsite circuit capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Tennessee Valley Authority (TVA) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. This change will not affect the probability of an accident, since the offsite AC circuits ~~and DGs~~ are not initiators of any accident sequence analyzed in the Updated Final Safety Analysis Report (UFSAR). Rather, offsite AC power sources ~~and DGs~~ support equipment used to mitigate accidents. The consequences of an analyzed accident will not be significantly increased since the minimum requirements for AC power sources will be maintained to ensure the availability of the required power to mitigate accidents assumed in the UFSAR. Operation in accordance with the proposed TS will ensure that sufficient onsite and offsite AC power sources are OPERABLE as required to support the unit's required features. Therefore, the mitigating functions supported by the onsite and offsite AC power sources will continue to provide the protection assumed by the accident analysis. The integrity of fission product barriers, plant configuration, and operating procedures as described in the UFSAR will not be affected by the proposed changes. Thus, the consequences of previously analyzed accidents will not increase by implementing these changes. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

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

Response: No

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. This change will not physically alter the plant (no new or different type of equipment will be installed). The proposed changes will maintain the minimum requirements for AC power sources to ensure the availability of the equipment required to mitigate accidents assumed in the UFSAR. Therefore, operation of the facility in accordance with this proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. The margin of safety is not affected by this change because the minimum requirements for AC power sources will be maintained to ensure the availability of the required power to shutdown the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Therefore, the proposed changes do not involve a significant reduction in a margin of safety

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Licensee Response/NRC Response/NRC Question Closure

Id	**449**
NRC Question Number	**VKG026**
Select Application	**Licensee Response**
Attachment 1	**Attachment 1 for RAI VKG026 Supplemental Response Final.pdf** (4MB)
Attachment 2	
Response Statement	

This response supplements the initial response to RAI VKG026 based on discussion with the NRC staff during a public meeting on April 22, 2015.

ISTS 3.8.1, AC Sources-Operating, Required Action D (ITS 3.8.1, Required Action E), NOTE states, "Enter applicable Conditions and Required Actions of LCO 3.8.9, 'Distribution Systems - Operating,' when Condition D is entered with no AC power source to any train." The Bases for ISTS 3.8.1, Required Action D states, "Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition D are modified by a Note to indicate that when Condition D is entered with no AC source to any train, the Conditions and Required Actions for LCO 3.8.9, 'Distribution Systems - Operating,' must be immediately entered. This allows Condition D to provide requirements for the loss of one offsite circuit and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train."

In ITS 3.8.1, the complete de-energization of a shutdown board could be represented by entry into ITS 3.8.1 Condition E or, as an example, concurrent entries into ITS 3.8.1, Conditions B (one or more Train A or one or more Train B DG(s) inoperable) and C (one offsite circuit inoperable solely due to an offsite power source to the opposite unit's shutdown board). ITS 3.8.1,

Conditions B and C do not have a NOTE to state that entry into the applicable Conditions and Required Actions of LCO 3.8.9 is required when Conditions are entered that result in no AC power source to any shutdown board. Therefore, the Note referring to LCO 3.8.9 in ITS 3.8.1, Required Action E will be removed from Required Action E, modified for clarification, and added as ITS 3.8.1 ACTIONS NOTE 2. ITS 3.8.1 ACTIONS NOTE 2 will state, "Enter applicable Conditions and Required Actions of LCO 3.8.9, 'Distribution Systems - Operating,' when any Condition (s) is entered with no AC power source to any shutdown board resulting in a de-energized shutdown board." This will ensure that entry into a Condition or a combination of Conditions that result in the complete de-energization of a shutdown board requires entry into the applicable Conditions and Required Actions of LCO 3.8.9.

As a result of the change discussed above the following changes are required:

1. **The CTS 3.8.1.1 markups will be revised to reflect the addition of ITS 3.8.1, ACTIONS NOTE 2 and the addition of associated Discussion of Change (DOC) A03 indicators. (Pages 5 and 13 of Enclosure 2, Volume 13)**
2. **The CTS 3.8.1.1 markups will be revised to reflect the deletion of the insert regarding the addition of the proposed ACTION F Note and the deletion of the associated DOC A03 indicators. (Pages 6 and 14 of Enclosure 2, Volume 13)**
3. **DOC A03 will be revised to reflect the addition of ITS 3.8.1, ACTIONS NOTE 2. (Page 22 of Enclosure 2, Volume 13)**
4. **ISTS 3.8.1 ACTIONS will be revised to add ACTIONS NOTE 2. (Pages 47 and 71 of Enclosure 2, Volume 13) Conforming changes will be made to the ISTS 3.8.1 Bases. (Pages 107 and 157 of Enclosure 2, Volume 13)**

5. **ISTS 3.8.1 Condition D will be revised to delete the Required Action D NOTE. (Pages 51 and 75 of Enclosure 2, Volume 13) Conforming changes will be made to the ISTS Bases (Pages 118 and 168 of Enclosure 2, Volume 13)**
6. **Justification for Deviation (JFD) 7 indicators will be added where changes are made to ISTS 3.8.1 concerning the relocation and modification of the ACTIONS Note. Additionally, a new JFD 7 will be added to the Justification for Deviations Section for ITS 3.8.1. (Pages 47, 51, 71, 75, 95 and Insert JFD 7 of Enclosure 2, Volume 13)**

See Attachment 1 for the draft revised CTS and ISTS markups, DOC A03, and the addition of JFD 7.

Response Date/Time	**5/10/2015 12:20 PM**
Closure Statement	
Question Closure Date	
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele**
Added By	**Scott Bowman**
Date Added	**5/10/2015 11:20 AM**
Date Modified	
Modified By	

ITS A01 ITS 3.8.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

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

LCO 3.8.1.a a. Two qualified ~~physically independent~~ circuits between the offsite transmission network and the onsite Class 1E distribution system ~~@~~, and LA01 A02

LCO 3.8.1.b b. Four ~~separate and independent~~ diesel generator sets each with: LA01

1. ~~Two diesels driving a common generator~~

SR 3.8.1.4 2. Two engine-mounted fuel tanks containing a minimum volume of 250 gallons of fuel, per tank

3. A separate fuel storage system containing a minimum volume of 62,000 gallons of fuel, See ITS 3.8.3

SR 3.8.1.6 4. A separate fuel transfer pump, and

5. A separate 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger. See ITS 3.8.4 and 3.8.9

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

ACTION: Add proposed ACTIONS NOTE 2 A03

Add proposed Condition A L01

ACTION A a. ~~With one offsite A.C. circuit of the above required A.C. electrical power source inoperable,~~ demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. Restore ~~at least two~~ offsite circuit~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L01 L02

ACTION ~~K~~ G

~~Add proposed Condition B~~ ~~L01~~

STET

ACTION B b.~~#~~ ~~With diesel generator set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B 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 one hour and at least once per 8 hours thereafter, and determining OPERABLE diesel generator sets are not inoperable due to common cause failure or performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore ~~at least four~~ diesel generator set~~s~~ to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~ STET

ACTION ~~K~~ G

Add proposed ACTION~~S~~ C ~~and D~~ L01

~~# Required actions, to verify OPERABLE diesel generator sets are not inoperable due to common cause failure or perform SR 4.8.1.1.2.a.4, shall be completed if this action is entered.~~ L02

SR 3.8.1.3 Note 3 * No more than one diesel generator may be made simultaneously inoperable on a pre-planned basis for ~~maintenance, modifications, or~~ surveillance testing. L03

~~@ Offsite circuits utilizing USST 2A and USST 2B as the normal power sources require CSST A and CSST C to be available as the alternate power sources via automatic transfer at the associated 6.9 kV Unit Boards. (CSST B can be substituted for CSST A or CSST C.) This Note remains in effect until November 30, 2013, or until the USST modifications are implemented on Units 1 and 2, whichever occurs first.~~ A02

ITS | A01 | ITS 3.8.1

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

~~Add proposed ACTION F Note~~ A03

Add proposed Condition ~~F~~ E L01

ACTION ~~F~~ E
c. ~~With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable~~, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION A, ACTION B, ACTION ~~F~~ E, ACTION ~~K~~ G, L04

ACTION ~~E~~ D
d. With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating~~; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and MODE 5 within 36 hours

ACTION ~~K~~ G, L05, M01

ACTION ~~J~~ F
e. With either diesel generator sets 1A-A and/or 2A-A inoperable simultaneously with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION B, ACTION ~~J~~ F, ACTION ~~K~~ G, ~~L01~~

~~Add proposed ACTIONS G, H, and I~~ ~~L01~~

ACTIONS Note
f. LCO 3.0.4.b is not applicable to diesel generators.

Add proposed ACTIONS ~~L~~ H and ~~M~~ I A04

SURVEILLANCE REQUIREMENTS

SR 3.8.1.1
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: LA01

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

In accordance with the Surveillance Frequency Control Program LA02

SR 3.8.1.8
b. Demonstrated OPERABLE ~~at least once per 18 months~~# by manually and automatically transferring the power supply to each 6.9 kV Unit Board## from the normal supply to the alternate supply.

SR 3.8.1.8 Note 1
\# For the 1A, 1B, 1C and 1D 6.9 kV Unit Boards, this Surveillance shall not be performed in MODES 1 and 2.

Add proposed SR 3.8.1.8 Note 1, second and third sentences. L06

SR 3.8.1.8 Note 2
\## Transfer capability is only required to be met for 6.9 kV Unit Boards that require normal and alternate power supplies.

3/4 LIMITING CONDITIONS FOR OPEATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met and as provided in LCO 3.0.7.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

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

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

See ITS 3.0

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

3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Required Actions A.2, B.2, ~~E.1~~, and associated Completion Times

C.2, D.1

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both

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ITS

A01

ITS 3.8.1

APPLICABILITY

LIMITING CONDITION FOR OPERATION (Continued)

, C.2

24 hours for Required Action A.2
4 hours for Required Action B.2
12 hours for Required Action ~~E~~.1

D

3.0.5 (Continued)

conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in~~:

L20

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

~~This Specification is not applicable in MODES 5 or 6.~~ A08

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

3.0.7 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

See ITS 3.0

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

ITS A01 ITS 3.8.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE: LA01

LCO 3.8.1.a a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system~~@~~, and A02

LCO 3.8.1.b b. Four ~~separate and independent~~ diesel generator sets each with: LA01

1. ~~Two diesels driving a common generator~~

SR 3.8.1.4 2. Two engine-mounted fuel tanks containing a minimum volume of 250 gallons of fuel, per tank

3. A separate fuel storage system containing a minimum volume of 62,000 gallons of fuel, See ITS 3.8.3

SR 3.8.1.6 4. A separate fuel transfer pump, and

5. A separate 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger. See ITS 3.8.4 and 3.8.9

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

ACTION: Add proposed ACTIONS NOTE 2 A03

Add proposed Condition A L01

ACTION A a. ~~With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable,~~ demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. Restore ~~at least two~~ offsite circuit~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L01

G

ACTION ~~K~~ L02

~~Add proposed Condition B~~ ~~L01~~

STET

ACTION B b.~~#~~ ~~With diesel generator set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B 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 one hour and at least once per 8 hours thereafter, and determining OPERABLE diesel generator sets are not inoperable due to common cause failure or performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore ~~at least four~~ diesel generator set~~s~~ to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~

G STET

ACTION ~~K~~

Add proposed ACTIONS C ~~and D~~ L01

~~# Required actions, to verify OPERABLE diesel generator sets are not inoperable due to common cause failure or perform SR 4.8.1.1.2.a.4, shall be completed if this action is entered.~~ L02

SR 3.8.1.3 Note 3 * No more than one diesel generator may be made simultaneously inoperable on a pre-planned basis for ~~maintenance, modifications, or~~ surveillance testing. L03

~~@ Offsite circuits utilizing USST 2A and USST 2B as the normal power sources require CSST A and CSST C to be available as the alternate power sources via automatic transfer at the associated 6.9 kV Unit Boards. (CSST B can be substituted for CSST A or CSST C.) This Note remains in effect until November 30, 2013, or until the USST modifications are implemented on Units 1 and 2, whichever occurs first.~~ A02

ITS | A01 | ITS 3.8.1

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

~~Add proposed ACTION F Note~~ ~~A03~~

Add proposed Condition ~~F~~ E L01

ACTION ~~F~~ E c. ~~With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable,~~ demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L04

ACTION A, ACTION B, ACTION ~~F~~ E, ACTION ~~K~~ G

ACTION ~~E~~ D d. With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating~~; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and MODE 5 within 36 hours L05 M01

ACTION ~~K~~ G

ACTION ~~J~~ F, ACTION B, ACTION ~~J~~ F, ACTION ~~K~~ G e. With either diesel generator sets 1A-A and/or 2 A-A inoperable simultaneous with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~

~~Add proposed ACTIONS G, H, and I~~ ~~L01~~

ACTIONS Note f. LCO 3.0.4.b is not applicable to diesel generators.

Add proposed ACTIONS ~~L~~ H and ~~M~~ I A04

SURVEILLANCE REQUIREMENTS

SR 3.8.1.1 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: LA01

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

In accordance with the Surveillance Frequency Control Program LA02

SR 3.8.1.8 b. Demonstrated OPERABLE ~~at least once per 18 months~~# by manually and automatically transferring the power supply to each 6.9 kV Unit Board ## from the normal supply to the alternate supply.

SR 3.8.1.8 Note 1 # For the 2A, 2B, 2C and 2D 6.9 kV Unit Boards this Surveillance shall not be performed in MODES 1 and 2. Add proposed SR 3.8.1.8 Note 1, second and third sentences. L06

SR 3.8.1.8 Note 2 ## Transfer capability is only required to be met for 6.9 kV Unit Boards that require normal and alternate power supplies.

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met and as provided in LCO 3.0.7.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

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

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

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

See ITS 3.0

3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Required Actions A.2, B.2, ~~E.1,~~ C.2, D.1 and associated Completion Times

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both

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APPLICABILITY

LIMITING CONDITION FOR OPERATION

, C.2

24 hours for Required Action A.2
4 hours for Required Action B.2
12 hours for Required Action ~~E~~.1

D

3.0.5 (Continued)

conditions (1) and (2) are satisfied, within ~~2 hours action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

L20

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

Declare required features inoperable.

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

A08

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

3.0.7 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

See ITS 3.0

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery,

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A01 In the conversion of the Sequoyah Nuclear Plant (SQN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 4.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.8.1.1.a Note @ has an expiration date of November 30, 2013. As it is anticipated that the SQN ITS Conversion License Amendment Request will not be approved by the NRC before this date, Note @ has been deleted. As such, these changes are administrative.

A03 CTS 3.8.1.1 ACTION c applies when one offsite circuit and one diesel generator (DG) are inoperable. In this condition, one or more required electrical boards may be de-energized. CTS 3.8.2.1 provides an ACTION for a de-energized required electrical board. ITS 3.8.1 ~~ACTION F Note in the Required Actions column~~ ACTIONS NOTE 2 states, "Enter applicable Conditions and Required Action of LCO 3.8.9, "Distribution System - Operating," when ~~Condition F~~ any Condition(s) is entered with no AC power source to ~~any train~~ any shutdown board resulting in a de-energized shutdown board." This changes the CTS by specifically requiring the compensatory actions for Distribution System - Operating to be taken, if a ~~distribution train~~ shutdown board is made inoperable and de-energized by inoperable AC Sources.

This change is acceptable because no changes are made to CTS requirements. CTS 3.0.1 requires the associated ACTION requirements to be met when an LCO is not met. With the addition of ITS LCO 3.0.6, an exception to ITS LCO 3.0.2 (CTS 3.0.1) was created, whereby ACTION requirements associated with an unmet LCO are not required to be met. Therefore, in the event AC Sources are inoperable such that a distribution subsystem is de-energized, ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in the event of an entire train without power, specific direction to take appropriate ACTIONS for the Distribution System is added (ITS 3.8.1, ~~Note to ACTION F~~ ACTIONS NOTE 2) for the condition of no power for ~~a train~~ any shutdown board. This format and construction implements the existing treatment of this condition within the framework of the ITS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A04 CTS 3.8.1.1 does not contain an ACTION for multiple offsite circuits and DGs inoperable. Having multiple offsite circuits and DGs inoperable requires entering CTS LCO 3.0.3. ITS 3.8.1 ACTION ~~L~~ H requires entering LCO 3.0.3 immediately, if two offsite circuits are inoperable concurrent with one or more inoperable Train A or Train B DG(s). ITS 3.8.1 ACTION ~~M~~ I requires entering LCO 3.0.3 immediately, if one offsite circuit is inoperable concurrent with one or more inoperable Train A and Train B DGs. This changes the CTS by adding specific ACTIONS requiring entry into LCO 3.0.3.

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DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

specific CTS DG loading requirement with a statement that DG loadings may include gradual loading as recommended by the manufacturer. This change is consistent with the recommendations of Generic Letter (GL) 93-05, "Line- Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." GL 93-05, Section 10.1, states that DGs "should be loaded in accordance with vendor recommendations for all test purposes other than the refueling outage LOOP tests." The change is acceptable, because it will ensure the DGs will continue to be operated consistent with manufacturer recommendations. This change is designated as administrative, because it does not result in a technical change to the CTS.

A07 CTS 4.8.1.1.2.d.5 requires verification that on an ESF actuation test signal (without loss of offsite power), each DG starts and operates for at least 5 minutes. ITS SR 3.8.1.12 requires a similar test, but does not specify that the DG auto-start on an ESF actuation test signal is "without loss of offsite power." This changes the CTS by not specifying the DG auto-start on an ESF actuation test signal is without a loss of offsite power signal.

The purpose of CTS 4.8.1.1.2.d.5 is to demonstrate that each DG automatically starts on an ESF actuation test signal. The requirements of this Surveillance are retained in the ITS as SR 3.8.1.12. The purpose of CTS 4.8.1.1.2.d.6.b) is to verify that each DG starts on a loss of offsite power concurrent with an ESF actuation test signal. The requirements of this Surveillance are retained in the ITS as SR 3.8.1.18. This change is acceptable, because it is understood that the CTS 4.8.1.1.2.d.5 required DG start on an ESF actuation test signal is without a loss of offsite power signal. Therefore, it is unnecessary to provide this information in ITS SR 3.8.1.12. This change is designated as administrative, because it does not result in a technical change to the CTS.

A08 CTS 3.0.5 states that it is not applicable in MODE 5 or 6. CTS 3.0.5 has been incorporated into the ACTIONS of ITS 3.8.1. This changes the CTS by incorporating the allowances of CTS 3.0.5 in ITS 3.8.1.

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

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.1.1 ACTION d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of the offsite sources within 24 hours, and if it is not restored within the allowed time, the unit is required to be in at least HOT STANDBY within the next 6 hours. ITS 3.8.1 D ACTION ~~E~~ requires restoration of at least one offsite circuit to OPERABLE status G within 24 hours, otherwise ITS 3.8.1 ACTION ~~K~~ requires the unit to be in MODE 3 within 6 hours and MODE 5 within 36 hours. This changes the CTS by adding the requirement to be in MODE 5 within 36 hours.

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

LA06 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.g.1 requires verification of each DG's capability to reject a load of greater than or equal to 600 kW while maintaining voltage and frequency within specified ranges. ITS SR 3.8.1.9 requires a similar verification, but does not specify the value of the single largest post-accident load to reject. This changes the CTS by moving the detail of the single largest load to the ITS Bases.

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

<u>LESS RESTRICTIVE CHANGES</u>

L01 CTS 3.8.1.1 ACTION a provides actions for one inoperable offsite circuit and allows 72 hours to restore the inoperable offsite circuit to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable and allows 7 days to restore the inoperable DG(s) to OPERABLE status before requiring the unit to be shut down and cooled down.~~ CTS 3.8.1.1 ACTION c provides actions for one inoperable offsite circuit and one inoperable DG and allows 12 hours to restore at least one of the inoperable AC sources to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION d provides actions for two inoperable offsite circuits and allows 24 hours to restore at least one of the inoperable offsite circuits to OPERABLE status before requiring the unit to be shut down. CTS 3.8.1.1 ACTION e provides actions for one or two inoperable DGs in both trains and allows 2 hours to restore the inoperable DG(s) in one train to OPERABLE status before requiring the unit to be shut down and cooled down. CTS 3.8.1.1 ACTION f states LCO 3.0.4.b is not applicable to DGs. The ITS ACTIONS are modified by a Note stating LCO 3.0.4.b is not applicable to DGs.~~ ITS 3.8.1 ACTION A provides actions for one inoperable offsite circuit for reasons other than Condition C, and allows 72 hours to restore the inoperable offsite power source to OPERABLE status. ~~ITS 3.8.1 ACTION B provides actions for one inoperable associated unit's DG or both DGs in one train inoperable, and allows 7 days to restore the inoperable DG(s) to OPERABLE status.~~ ITS 3.8.1 ACTION C provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board, and requires: 1) performance of ITS SR 3.8.1.1 for the OPERABLE offsite circuit in 1 hour and once per 8 hours thereafter, 2) declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and 3) restoration of the offsite circuit to OPERABLE status in 7 days. ~~requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite circuit cannot be~~

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

~~restored to an OPERABLE status. ITS 3.8.1 ACTION D requires declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION E requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 12 hours. Otherwise, one offsite circuit is required to be restored to an OPERABLE status in 24 hours.~~ ITS 3.8.1 ACTION ~~F~~ E provides actions for one associated unit's offsite circuit inoperable concurrent with one associated unit's DG inoperable, and allows 12 hours to restore one of the inoperable AC sources to OPERABLE status. For the condition of one offsite circuit inoperable solely due to an inoperable power source to an opposite unit's 6.9 kV Shutdown Board concurrent with an inoperable DG (similar to CTS 3.8.1.1 Action c), ITS 3.8.1 Conditions B and C would be entered concurrently. ITS 3.8.1 ACTIONS B and C require, in part, restoration of the inoperable AC sources (circuit and DG) to an OPERABLE status in 7 days. This changes the CTS by providing a new ITS 3.8.1 ACTION C to allow 7 days to restore an inoperable offsite circuit to an OPERABLE status, if the offsite circuit is inoperable solely due to an inoperable power source to an opposite unit's Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable). ~~ITS ACTION G requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no offsite power available inoperable in 7 days. ITS ACTION H requires declaring the required feature(s) on the opposite unit's 6.9 kV~~

~~more Train B DGs inoperable and allows 2 hours to restore one Train of DGs to OPERABLE status. ITS 3.8.1 ACTION K requires the unit to be shut down and cooled down if a Required Action and associated Completion Time of Condition A, B, E, F, I, or J is not met. These changes to the CTS provide separate ACTIONS to declare the required features powered from the opposite unit's Class 1E AC Electrical Power Distribution System inoperable as the remedial measures for the inoperable AC sources.~~

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and DGs. The onsite Class 1E AC Electrical Distribution System supplies electrical power to two power trains shared between the two units. The core cooling and containment cooling system loads (e.g., Safety Injection (SI) pumps, Auxiliary Feedwater (AFW) pumps, Residual Heat Removal (RHR) pumps, Centrifugal Charging pumps, Containment Spray pumps, and Air Return System (ARS) fans) are unitized to the respective unit's 6.9 kV Shutdown Boards. However, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVs), and Control Room HVAC (CRACS)) are shared between the units. The AC sources for the shared loads are distributed across both unit's shutdown boards. Therefore, two qualified offsite circuits and four DGs capable of supplying the onsite Class 1E AC Electrical Distribution System are required to be OPERABLE. However, the impacts of an inoperable offsite power source or DG on an opposite unit's 6.9 kV Shutdown Board differ from the impacts of an inoperable offsite power source or DG on an associated unit's 6.9 kV Shutdown Board, due to the loads powered from the respective board.

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ITS 3.8.1, AC SOURCES - OPERATING

For example, with SQN Unit 1 in MODES 1, 2, 3, and 4, 6.9 kV Shutdown Boards 1A-A and 1B-B, and the associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to the ESF systems powered from those boards. Additionally, 6.9 kV Shutdown Boards 2A-A and 2B-B and associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to any required shared components required for Unit 1. If it is necessary to de-energize 6.9 kV Shutdown Board 2A-A or 2B-B, the redundant shared systems can be aligned prior to de-energizing the shutdown board to ensure no loss of safety function will occur. Upon removing the shutdown board from service, the applicable Conditions and Required Actions for the affected shared system LCOs will be entered and tracked and either the offsite power source or the DG is required to be restored to an OPERABLE status in 7 days.

In the event of an unplanned loss of an offsite power source to an opposite unit's 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and restoration of the offsite circuit to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite power source cannot be restored to an OPERABLE status. Similarly, in~~ In the event of an unplanned loss of a DG ~~to an opposite unit 6.9 kV Shutdown Board~~, the proposed actions require declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours, and restoration of the DG to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status.~~ In both cases, the ACTIONS require performance of SR 3.8.1.1 for the required OPERABLE offsite circuit(s) within 1 hour and once per 8 hours thereafter.

The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair inoperable features. If the necessary repairs cannot be made within the established Completion Time, ITS 3.8.1 ACTION G is entered and the unit is required to be shut down to MODE 3 in 6 hours and MODE 5 in 36 hours. ~~the associated required features are declared inoperable and the applicable Conditions and Required Actions for the affected shared system LCOs are entered and tracked~~. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's offsite circuit ~~AC sources~~ commensurate with the importance of maintaining the~~se~~ offsite circuit ~~AC sources~~ capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION b requires with DG set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B inoperable, determination that OPERABLE DGs are not inoperable due to common cause failure or through performance of CTS 4.8.1.1.2.a.4. This ACTION is modified by Note #, requiring completion of the required action once the ACTION is entered. ITS 3.8.1

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ACTION B requires that with ~~an associated unit's DG inoperable (or with both~~ any DGs in a train inoperable~~)~~, determination that OPERABLE DGs are not inoperable due to common cause failure or through performance of SR 3.8.1.2. However, ITS does not specify completion of the ACTIONS if the Condition is exited. This changes the CTS by removing a requirement to complete the ACTIONS once the ACTION is entered.

The purpose of CTS 3.8.1.1 ACTION b is to provide compensatory measures to be taken in response to inoperable DG set(s), including demonstration that the OPERABLE DGs are not inoperable. The Note requiring completion of the actions to verify the remaining DGs are OPERABLE once the ACTION is entered was added to the CTS with License Amendments 205 (Unit 1) and 195 (Unit 2), dated June 29, 1995 (ADAMS Accession No. ML013320017). TVA license amendment request TS 94-19, submitted on April 6, 1995, stated that the addition of this Note was being made to align with the requirements contained in NUREG-1431, LCO 3.8.1. On April 7, 1995, NUREG-1431, Rev. 1 was issued. The Note modifying LCO 3.8.1 ACTION B that required completion of Required Actions B.3.1 and B.3.2 (demonstration of DG OPERABILITY) was removed from NUREG-1431 in Revision 1. The requirement to complete the actions to demonstrate the OPERABLE DGs are not inoperable is an exception to ITS LCO 3.0.2 (CTS LCO 3.0.2). Completing the ACTIONS to verify the OPERABILITY of the remaining OPERABLE DGs is not required to restore compliance with the LCO. This change is acceptable because completion of the ACTIONS to evaluate the possibility of a DG common cause failure will be tracked as an item in the corrective action program. This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable. ACTION b is modified by Note * stating that no more than one DG may be made simultaneously inoperable on a pre-planned basis for maintenance, modifications, or surveillance testing. ITS SR 3.8.1.3 verifies each DG can be started, synchronized, loaded, and operated for at least 60 minutes. SR 3.8.1.3 is modified by Note 3 stating the Surveillance shall be conducted on only one DG at a time. This changes the CTS by deleting the restriction for not making more than one DG simultaneously inoperable on a pre-planned basis, with the exception of the performance of SR 3.8.1.3.

The purpose of CTS 3.8.1.1 ACTION b is to provide required actions for one or both DGs in a train inoperable. The purpose of Note * is to ensure pre-planned activities that may result in an inoperable DG (i.e., maintenance, modifications, or surveillance testing) are not performed on both DGs in a train at the same time. The proposed required actions do not include the restriction for limiting pre-planned activities to one DG at a time. The control of pre-planned maintenance, modifications, or surveillance testing is an issue for procedures and scheduling. This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.1.1 ACTION b requires, in part, with one or both DG(s) in a train inoperable to demonstrate the

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ITS 3.8.1, AC SOURCES - OPERATING

OPERABILITY of the remaining DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours. CTS 3.8.1.1 ACTION c requires, in part, with one offsite circuit and one DG inoperable to demonstrate the OPERABILITY of the remaining DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours. ITS 3.8.1 ACTION B requires with one or both DG(s) in a train inoperable to perform SR 3.8.1.2 for OPERABLE DGs within 24 hours. This changes the CTS by extending the time allowed to demonstrate the OPERABILITY of the OPERABLE DGs with one offsite circuit and one DG inoperable from 8 hours to 24 hours.

The purpose of the CTS 3.8.1.1 ACTIONS b and c is to ensure that the OPERABLE DGs are not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). CTS 3.0.1 states that upon failure to meet an LCO, the associated ACTION requirements shall be met. In the instance of one offsite circuit and one DG inoperable, the condition of one inoperable DG also exists. Therefore, in addition to meeting the requirements of CTS 3.8.1.1 ACTION c, the requirements of CTS 3.8.1.1 ACTION b are required to be met. However, this results in conflicting time requirements for performing CTS 4.8.1.1.2.a.4 on the OPERABLE DGs. A 24 hour Completion Time for performing DG common mode failure checks is consistent with the guidance provided in Generic Letter 84-15. This change is acceptable, since the vast majority of DG start tests demonstrate that the DG is OPERABLE. This change is designated as less restrictive, because additional time is allowed to demonstrate the OPERABILITY of the OPERABLE DGs for the condition of one offsite circuit and one DG inoperable under the ITS than under the CTS.

L05 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION d states, in part, with two offsite circuits inoperable demonstrate the OPERABILITY of the DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the DGs are already operating. CTS 4.8.1.1.2.a.4 requires verification that each DG starts and achieves voltage and frequency within established ranges within 10 seconds. ITS 3.8.1 ACTION ~~E~~ D does not contain this requirement. This changes the CTS by deleting the requirement to test each DG when two offsite circuits are inoperable.

The purpose of the CTS 4.8.1.1.2.a.4 requirement in CTS 3.8.1.1 ACTION c is to ensure that the DGs are OPERABLE in the case of a loss of offsite power. Since the DGs are tested on monthly basis, there is no reason to suspect that they would not perform their intended safety function. Furthermore, the inoperability of two offsite circuits does not affect the OPERABILITY of the DGs, since the DGs are independent of the offsite circuits. Therefore, there is no need to subject the DGs to additional testing. This change is designated as less restrictive because the CTS requirement to perform testing on the DGs when both offsite circuits are inoperable is not being retained in the ITS.

L06 *(Category 8 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.1.b requires the demonstration of a manual and automatic transfer of the power supply to each 6.9 kV Unit Board from the normal to alternate once per 18 months. Note # specifies that the Surveillance shall not be performed on the associated unit's 6.9 kV Unit Boards in MODES 1 and 2. This test has been incorporated in ITS SR 3.8.1.8. ITS SR 3.8.1.8 includes a

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ITS 3.8.1, AC SOURCES - OPERATING

L19 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.g.4 requires demonstration of a DG hot restart and verification following energization that steady state voltage and frequency are maintained ≥ 6800 volts and ≤ 7260 volts and ≥ 58.8 Hz and ≤ 61.2 Hz during this test. ITS SR 3.8.1.15 requires demonstration of a DG hot restart and requires verification that within 10 seconds, voltage ≥ 6800 V and frequency ≥ 58.8 Hz, and steady state voltage ≥ 6800 V and ≤ 7260 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range.

The purpose of CTS 4.8.1.1.2.g.4 is to test the ability of each DG to restart on an accident signal under hot conditions and achieve the appropriate voltage and frequency. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range. This effectively allows the upper voltage and frequency limits to be exceeded during DG acceleration and stabilization. As stated above, the proposed Surveillance will require the establishment of the minimum frequency (58.8 Hz) and voltage (6800 V) within the given time frame. The accident analyses require that the DGs be capable of being loaded within 10 seconds. This can be accomplished at 58.8 Hz and 6800 V. While the upper level requirement regarding the frequency and voltage acceptance criterion is being eliminated, the requirement to establish a steady state voltage and frequency has been retained. 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. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L20 *(Category 3 – Relaxation of Completion Time)* CTS 3.0.5 allows a system, subsystem, train, component, or device to be considered OPERABLE with an inoperable emergency or normal power source provided its corresponding normal or emergency power source is OPERABLE and its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE. CTS 3.0.5 requires a unit shut down to start within two hours with these requirements not met. CTS 3.0.5 also provides an explicit time period to be in HOT STANDBY (MODE 3), HOT SHUTDOWN (MODE 4), and COLD SHUTDOWN (MODE 5). ITS 3.8.1 ACTION A (one associated unit offsite source inoperable) and ACTION C (one opposite unit offsite source inoperable) require ~~requires~~ the declaration of required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by Required Actions A.2 and C.2 ~~the Required Action A.2~~ is 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION B (one ~~associated unit DG~~ or both DGs in a train inoperable) requires the declaration of required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable. The Completion Time allowed by the Required Action B.2 is 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION D ~~E~~ (two offsite circuits inoperable) requires the declaration of required feature(s) inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action D ~~E~~.1 is 12 hours from discovery of Condition D ~~E~~ concurrent with inoperability of redundant required features. This changes the CTS by allowing more time to restore inoperable equipment and

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

replaces the explicit times to be in MODE 3, MODE 4, and MODE 5 with a requirement to declare the affected features inoperable (and thus to take the ACTIONS required by the individual system LCO, including possible shut down of the unit).

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. This change allows more time to restore inoperable equipment when required AC Sources are inoperable concurrent with inoperabilities of redundant required features and deletes the explicit times to be in MODE 3, MODE 4, and MODE 5. By declaring the affected supported equipment inoperable, and as a result, taking the Technical Specifications ACTIONS of the affected supported equipment, unit operation is maintained within the bounds of the Technical Specifications and approved ACTIONS. Since the AC Sources support the OPERABILITY of the affected equipment, it is appropriate that the proper action, in this condition, would be to declare that affected supported equipment inoperable. CTS 3.0.5 is overly restrictive, in that if the associated supported equipment were inoperable for other reasons and the redundant equipment was also inoperable, a restoration time is sometimes provided, in other CTS sections. The 24 hour Completion Time when one associated unit offsite circuit is inoperable is acceptable because: a) the redundant counterpart to the inoperable required feature is still OPERABLE although single failure protection may have been lost; b) the capacity and capability of the remaining AC Sources is still available; c) a reasonable time for repairs is provided for restoration before the unit is subjected to transients associated with shut down; and d) the low probability of a DBA occurring during this period. The 12 hour Completion Time when two offsite circuits are inoperable is acceptable because Regulatory Guide 1.93 allows a Completion Time of 24 hours for two 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 ~~associated unit~~ 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 shut down. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC Sources, reasonable time for repairs, and low probability of a DBA occurring during this period. This change is designated as less restrictive because additional time is allowed to restore equipment to OPERABLE status and the change deletes the explicit times to reach MODE 3, MODE 4, and MODE 5.

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3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

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

3.8.1.1.a a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System~~,~~ ; and 1 2

3.8.1.1.b b. ~~Two~~ Four diesel generators (DGs) capable of supplying the onsite Class 1E AC Electrical power distribution ~~sub~~system~~(s), and~~ . 1 2 1

~~[c. Automatic load sequencers for Train A and Train B.]~~ 3

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

ACTIONS

2. Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when any Condition(s) is entered with no AC power source to any shutdown board resulting in a de-energized shutdown board.

S

-----NOTE-----

ACTION f DOC A03 1. LCO 3.0.4.b is not applicable to DGs. 7

CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION a ACTION c A. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C.	A.1 Perform SR 3.8.1.1 for ~~[required]~~ OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter 4 5
	AND	
DOC L20	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to ~~one train~~ 6.9 kV Shutdown Board 1A-A or 1B-B concurrent with inoperability of redundant required feature(s) 5
	AND	

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION a		A.3 Restore ~~[required]~~ offsite circuit to OPERABLE status.	72 hours	4
ACTIONS b, c, and e	B. ~~One [required] DG inoperable.~~ ~~1A-A~~ INSERT 1	B.1 Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit~~(s)~~.	1 hour AND Once per 8 hours thereafter	4 ~~5~~
		AND		
DOC L20		B.2 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND		
ACTION b		B.3.1 Determine OPERABLE DG~~(s)~~ ~~is~~ are not inoperable due to common cause failure.	~~[~~24~~]~~ hours	4 1
		OR		
ACTION b ACTION c		B.3.2 Perform SR 3.8.1.2 for OPERABLE DG~~(s)~~.	~~[~~24~~]~~ hours	4 1
		AND		
ACTION b		B.4 Restore ~~[required]~~ DG(s) to OPERABLE status.	~~72 hours~~ 7 days	4 1

INSERT 2 5

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~~5~~ 4

INSERT 1

~~DOC L01~~

~~OR~~

~~DG 1B-B inoperable.~~

~~OR~~

~~DGs 1A-A and 2A-A inoperable.~~

One or more Train A DG(s) inoperable.

OR

One or more Train B DG(s) inoperable.

~~OR~~

~~DGs 1B-B and 2B-B inoperable.~~

5

INSERT 2

DOC L01

DOC L20

C. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable.	C.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND	
	C.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to 6.9 kV Shutdown Board 2A-A or 2B-B concurrent with inoperability of redundant required feature(s)
	AND	
	C.3 ~~Declare associated required feature(s) inoperable.~~ Restore offsite circuit to OPERABLE status.	7 days

5

INSERT 2 (Continued)

D. DG 2A-A or 2B-B inoperable.	D.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND	
	D.2 Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND	
	D.3.1 Determine OPERABLE DGs are not inoperable due to common cause failure.	24 hours
	OR	
	D.3.2 Perform SR 3.8.1.2 for OPERABLE DGs.	24 hours
	AND	
	D.4 Declare associated required feature(s) inoperable.	7 days

CTS

AC Sources - Operating
3.8.1

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
ACTION d DOC L20	D ~~C~~ F. Two ~~[required]~~ offsite circuits inoperable.	D ~~C~~ F.1	Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ F D concurrent with inoperability of redundant required features	5
		AND			
ACTION d		D ~~C~~ F.2	Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours	5 4
ACTION c ~~DOC A03~~	E ~~D~~ F. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C. AND ACTION c ~~One [required]~~ DG 1A-A or 1B-B inoperable.	~~-------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D F is entered with no AC power source to any train ~~6.9 kV Shutdown Board 1A-A or 1B-B~~. --~~			7 5 4
ACTION c		E ~~D~~ F.1	Restore ~~[required]~~ offsite circuit to OPERABLE status.	12 hours	
		OR			
	~~INSERT 3~~	E ~~D~~ F.2	Restore ~~[required]~~ DG to OPERABLE status.	12 hours	5 4
ACTION e	F ~~E~~ J. ~~Two [required]~~ One or more Train A DG~~s~~(s) inoperable. INSERT 4	F ~~E~~ J.1	Restore one ~~[required]~~ train of DGs to OPERABLE status.	2 hours	5

5

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5 ~~**INSERT 3**~~

~~DOC L01~~	G. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable. AND DG 1A-A or 1B-B inoperable.	G.1	Declare required feature(s) on associated Unit 2 6.9 kV Shutdown Board inoperable.	7 days
~~DOC L01~~	H. One offsite circuit inoperable for reasons other than Condition C. AND DG 2A-A or 2B-B inoperable.	H.1	Declare required feature(s) on associated Unit 2 6.9 kV Shutdown Board inoperable.	7 days

Insert Page 3.8.1-3a

5 ~~INSERT 3 (continued)~~

~~DOC L01~~ I. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable. AND DG 2A-A or 2B-B inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition I is entered with no AC power source to 6.9 kV Shutdown Board 2A-A or 2B-B. -- I.1 Restore offsite circuit to OPERABLE status. OR I.2 Restore DG to OPERABLE status.	 7 days 7 days

5 **INSERT 4**

ACTION e

AND

One or more Train B DG(s) inoperable.

Insert Page 3.8.1-3b

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~-----REVIEWER'S NOTE----- This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event.~~ ~~------------------------------------~~ ~~F. [One [required] [automatic load sequencer] inoperable.~~	~~F.1 Restore [required] [automatic load sequencer] to OPERABLE status.~~	~~[12] hours]~~ 3
G ACTIONS a, b, c, d, e ~~K~~ ~~G~~. Required Action and associated Completion Time of Condition ~~A, B, C, D~~, E, or ~~[F]~~ not met. ~~F, I,~~ ~~J~~ A, B, C, D, E, or F DOC M01	~~G~~.1 ~~K~~ G Be in MODE 3. AND ~~G~~.2 ~~K~~ G Be in MODE 5.	6 hours 36 hours 3 5
INSERT 5 ~~H. Three or more [required] AC sources inoperable.~~	~~H.1 Enter LCO 3.0.3.~~	~~Immediately~~ 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.1.1 4.8.1.1.1.a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ 4 6 In accordance with the Surveillance Frequency Control Program ~~]~~ 6

5 **INSERT 5**

DOC A04	~~L~~ H. Two offsite circuits inoperable. AND One or more Train A DG(s) inoperable. OR One or more Train B DG(s) inoperable.	~~L~~ H.1 Enter LCO 3.0.3.	Immediately
DOC A04	~~M~~ I. One offsite circuit inoperable. AND One or more Train A DG(s) inoperable. AND One or more Train B DG(s) inoperable.	~~M~~ I.1 Enter LCO 3.0.3.	Immediately

Insert Page 3.8.1-4

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

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

3.8.1.1.a a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System~~,~~ ; and 1 2

3.8.1.1.b b. ~~Two~~ Four diesel generators (DGs) capable of supplying the onsite Class 1E AC Electrical power distribution ~~sub~~system~~(s), and~~ . 1 2 1

~~[c. Automatic load sequencers for Train A and Train B.]~~ 3

DOC L01

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

ACTIONS

-----NOTE-----

ACTION f
DOC A03
1. LCO 3.0.4.b is not applicable to DGs.

2. Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when any Condition(s) is entered with no AC power source to any shutdown board resulting in a de-energized shutdown board. 7

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION a ACTION c	A. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C.	A.1 Perform SR 3.8.1.1 for ~~[required]~~ OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter	4 5
		AND		
DOC L20		A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to ~~one train~~ 6.9 kV Shutdown Board 2A-A or 2B-B concurrent with inoperability of redundant required feature(s)	5
		AND		

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION a		A.3 Restore ~~[required]~~ offsite circuit to OPERABLE status.	72 hours	4
ACTIONS b, c, and e	B. ~~One [required] DG inoperable.~~ ~~2A-A~~ INSERT 1	B.1 Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit~~(s)~~.	1 hour AND Once per 8 hours thereafter	4 ~~5~~
		AND		
DOC L20		B.2 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND		
ACTION b		B.3.1 Determine OPERABLE DG~~(s)~~ ~~is~~ are not inoperable due to common cause failure.	~~[~~24~~]~~ hours	4 1
		OR		
ACTION b ACTION c		B.3.2 Perform SR 3.8.1.2 for OPERABLE DG~~(s)~~.	~~[~~24~~]~~ hours	4 1
		AND		
ACTION b		B.4 Restore ~~[required]~~ DG(s) to OPERABLE status.	~~72 hours~~ 7 days	4 1

INSERT 2

5

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~~5~~ 4

INSERT 1

~~DOC L01~~

~~OR~~

~~DG 2B-B inoperable.~~

~~OR~~

~~DGs 1A-A and 2A-A inoperable.~~

One or more Train A DG(s) inoperable.

OR

One or more Train B DG(s) inoperable.

~~OR~~

~~DGs 1B-B and 2B-B inoperable.~~

5

INSERT 2

DOC L01

DOC L20

C. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable.	C.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	C.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to 6.9 kV Shutdown Board 1A-A or 1B-B concurrent with inoperability of redundant required feature(s)
	AND		
	C.3	~~Declare associated required feature(s) inoperable.~~ Restore offsite circuit to OPERABLE status.	7 days

Insert Page 3.8.1-2a

5

INSERT 2 (Continued)

D. DG 1A-A or 1B-B inoperable.	D.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	D.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND		
	D.3.1	Determine OPERABLE DGs are not inoperable due to common cause failure.	24 hours
	OR		
	D.3.2	Perform SR 3.8.1.2 for OPERABLE DGs.	24 hours
	AND		
	D.4	Declare associated required feature(s) inoperable.	7 days

CTS

AC Sources - Operating
3.8.1

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
ACTION d DOC L20	~~C~~ E D. Two ~~[required]~~ offsite circuits inoperable.	~~C~~ E D.1	Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ E D concurrent with inoperability of redundant required features	5
		AND			
ACTION d		~~C~~ E D.2	Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours	5 4
ACTION c ~~DOC A03~~	~~D~~ F E. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C. AND ~~One [required]~~ DG 2A-A or 2B-B inoperable.	~~--------------------NOTE-------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D F is entered with no AC power source to any train 6.9 kV Shutdown Board 2A-A or 2B-B. ---~~			7 5 4
ACTION c		~~D~~ F E.1	Restore ~~[required]~~ offsite circuit to OPERABLE status.	12 hours	
		OR			
ACTION c	~~INSERT 3~~	~~D~~ F E.2	Restore ~~[required]~~ DG to OPERABLE status.	12 hours	5 4
ACTION e	~~E~~ J F. ~~Two [required]~~ One or more Train A DG~~s~~(s) inoperable. INSERT 4	~~E~~ J F.1	Restore one ~~[required]~~ train of DG s to OPERABLE status.	2 hours	5

5

5

~~**INSERT 3**~~

~~DOC L01~~	G. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable. <u>AND</u> DG 2A-A or 2B-B inoperable.	G.1	Declare required feature(s) on associated Unit 1 6.9 kV Shutdown Board inoperable.	7 days
~~DOC L01~~	H. One offsite circuit inoperable for reasons other than Condition C. <u>AND</u> DG 1A-A or 1B-B inoperable.	H.1	Declare required feature(s) on associated Unit 1 6.9 kV Shutdown Board inoperable.	7 days

Insert Page 3.8.1-3a

5 ~~**INSERT 3 (continued)**~~

~~DOC L01~~

I. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable. AND DG 1A-A or 1B-B inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition I is entered with no AC power source to 6.9 kV Shutdown Board 1A-A or 1B-B. --- I.1 Restore offsite circuit to OPERABLE status. OR I.2 Restore DG to OPERABLE status.	 7 days 7 days

5 **INSERT 4**

ACTION e

AND

One or more Train B DG(s) inoperable.

CTS

AC Sources - Operating
3.8.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~-----REVIEWER'S NOTE----- This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event. -----------------------------------~~ ~~F. [One [required] [automatic load sequencer] inoperable.~~	~~F.1 Restore [required] [automatic load sequencer] to OPERABLE status.~~	~~[12] hours]~~ 3
ACTIONS a, b, c, d, e G ~~K~~ ~~G~~. Required Action and associated Completion Time of Condition ~~A, B, C, D~~, E, ~~or~~ ~~[F]~~ F, I, ~~J~~ not met. A, B, C, D, E, or F DOC M01	~~G~~.1 ~~K~~ G Be in MODE 3. AND ~~G~~.2 ~~K~~ G Be in MODE 5.	6 hours 36 hours 3 5
INSERT 5 ~~H. Three or more [required] AC sources inoperable.~~	~~H.1 Enter LCO 3.0.3.~~	~~Immediately~~ 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.1.1 4.8.1.1.1.a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ 4 6 In accordance with the Surveillance Frequency Control Program ~~]~~ 6

SEQUOYAH UNIT 2 Amendment XXX

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5 **INSERT 5**

DOC A04 H ~~L~~. Two offsite circuits inoperable. AND One or more Train A DG(s) inoperable. OR One or more Train B DG(s) inoperable.	H ~~L~~.1 Enter LCO 3.0.3.	Immediately
DOC A04 I ~~M~~. One offsite circuit inoperable. AND One or more Train A DG(s) inoperable. AND One or more Train B DG(s) inoperable.	I ~~M~~.1 Enter LCO 3.0.3.	Immediately

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

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

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

3. ISTS LCO 3.8.1.c and ISTS 3.8.1 ACTION F have been deleted since SQN Units 1 and 2 do not use load sequencers. Each load or load block is sequenced with the use of its associated time delay relay. Each major ESF component has individual time delay relays that operate individual components, not all ESF components. Thus, if a single time delay relay fails, only the individual component and the DG could be affected. Subsequent Conditions and Required Actions have been renumbered, as applicable. ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), and ISTS SR 3.8.1.19 (ITS SR 3.8.1.18) have been revised to reflect the use of time delay relays.

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

5. ~~Changes were made to ISTS LCO 3.8.1 to ensure the appropriate AC power sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4 to satisfy the design requirements. This modification was necessary due to shared systems between Units 1 and 2. This is an exception that is intended to allow taking the ACTIONS associated with inoperable shared equipment in lieu of requiring the opposite unit AC sources to be restored to OPERABLE status within a specified Completion Time. This exception is acceptable since, with the opposite unit equipment inoperable and the associated ACTIONS entered, the opposite unit AC Sources provide no additional assurance of meeting the safety criteria of the given unit's AC power sources.~~ INSERT JFD 5

   SR Notes associated with ISTS SR 3.8.1.8 (ITS SR 3.8.1.8), ISTS SR 3.8.1.9 (ITS SR 3.8.1.9), ISTS SR 3.8.1.10 (ITS SR 3.8.1.10), ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.13 (ITS SR 3.8.1.13), ISTS SR 3.8.1.14 (ITS SR 3.8.1.14), ISTS SR 3.8.1.16 (ITS SR 3.8.1.16), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), and ISTS SR 3.8.1.19 (ITS SR 3.8.1.18) have been revised to allow performance of the affected SR on opposite unit shutdown board or DGs when the given unit is in a restricted MODE.

6. ISTS SR 3.8.1.1 (ITS SR 3.8.1.1), ISTS SR 3.8.1.2 (ITS SR 3.8.1.2), ISTS SR 3.8.1.3 (ITS SR 3.8.1.3), ISTS SR 3.8.1.4 (ITS SR 3.8.1.4), ISTS SR 3.8.1.5 (ITS SR 3.8.1.5), ISTS SR 3.8.1.6 (ITS SR 3.8.1.6), ISTS SR 3.8.1.7 (ITS SR 3.8.1.7), ISTS SR 3.8.1.8 (ITS SR 3.8.1.8), ISTS SR 3.8.1.9 (ITS SR 3.8.1.9), ISTS SR 3.8.1.10 (ITS SR 3.8.1.10), ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.13 (ITS SR 3.8.1.13), ISTS SR 3.8.1.14 (ITS SR 3.8.1.14), ISTS SR 3.8.1.15 (ITS SR 3.8.1.15), ISTS SR 3.8.1.16 (ITS SR 3.8.1.16), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), ISTS SR 3.8.1.19 (ITS SR 3.8.1.18), and ISTS SR 3.8.1.20 (ITS SR 3.8.1.19) provide two options for controlling the Frequencies of Surveillance Requirements. SQN is proposing to control the

INSERT JFD 7

INSERT JFD 5

Changes were made to the ISTS to reflect the interaction between an operating unit's AC power sources and those credited features needing AC power from the opposite unit's associated AC power sources. ITS 3.8.1 ACTION C has been added to address the condition when the offsite circuit is inoperable solely due to an inoperable power source to the opposite unit's 6.9 kV Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable), and requires, in part, restoration of the inoperable offsite circuit within 7 days. ISTS 3.8.1 ACTIONS A and D have been revised to address conditions when the offsite circuit is inoperable for reasons other than ITS 3.8.1 Condition C. ITS 3.8.1 ACTION A requires restoration of the inoperable offsite circuit in 72 hours. ITS 3.8.1 ACTION E requires restoration of an inoperable AC source in 12 hours. This change reflects a restoration Completion Time commensurate with the importance of maintaining the AC power source capable of supporting the affected shared systems. With the addition of ITS 3.8.1 ACTION C, subsequent ISTS ACTIONS have been renumbered.

INSERT JFD 7

ISTS 3.8.1, AC Sources - Operating, Required Action D contains a NOTE which states, “Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train." In ITS 3.8.1, the complete de-energization of a shutdown board could be represented by entry into ITS 3.8.1 Condition E or, as an example, concurrent entries into ITS 3.8.1 Conditions B (one or more Train A or one or more Train B DG(s) inoperable) and C (one offsite circuit inoperable solely due to an offsite power source to the opposite unit's shutdown board). ITS 3.8.1 Conditions B and C do not have a NOTE to state that entry into the applicable Conditions and Required Actions of LCO 3.8.9 is required when Conditions are entered that result in no AC power sources to any shutdown board. Therefore, the Note referring to LCO 3.8.9 in ISTS 3.8.1, Required Action D has been removed from Required Action D, modified for clarification, and added as ITS 3.8.1 ACTIONS NOTE 2. ITS 3.8.1 ACTIONS NOTE 2 states, “Enter applicable Conditions and Required Actions of LCO 3.8.9, `Distribution Systems - Operating,' when any Condition(s) is entered with no AC power source to any shutdown board resulting in a de-energized shutdown board.” This will ensure that entry into a Condition or a combination of Conditions that result in the complete de-energization of a shutdown board requires entry into the applicable Conditions and Required Actions of LCO 3.8.9.

BASES

APPLICABILITY

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

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

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

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

ACTIONS

The ACTIONS are modified by a Note that

~~A Note~~ prohibits the application of LCO 3.0.4.b to an inoperable DG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable DG and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance. 5

A second Note provides the appropriate restrictions for a de-energized shutdown board. 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 ACTIONS are modified by a Note to indicate that when any Condition(s) is entered with no AC power source to any shutdown board resulting in a de-energized shutdown board, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows LCO 3.8.1 Conditions to provide requirements for the loss of any combination of AC Sources, without regard to whether a shutdown board is de-energized and LCO 3.8.9 to provide the appropriate restrictions for a de-energized shutdown board. 5

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable for reasons other than Condition C, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~ ~~E~~ D, for two offsite circuits inoperable, is entered. 5 5

~~-----REVIEWER'S NOTE-----~~
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~ 6
~~-----~~

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. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. 1

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

B.1

To ensure a highly reliable power source remains with ~~an~~ INSERT 9 inoperable ~~DG~~, it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. 5

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~--~~

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG(s) is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG(s). 5 5

5

INSERT 9

~~DG 1A-A, DG 1B-B, DGs 1A-A and 2A-A, or DGs 1B-B and 2B-B~~

one or more Train A DGs, or one or more Train B DGs

BASES

ACTIONS (continued)

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

a. An inoperable DG exists and

b. A required feature on the other train ~~(Train A or Train B)~~ is inoperable. 5

or more DGs in a train

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

or more DGs in a train

Discovering one ~~required DG~~ inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is ~~A~~acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 5 4

s AC Electrical Power

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1 5

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(~~s~~)~~, the other DG~~(~~s~~)~~ would be declared inoperable upon discovery and Condition ~~E~~ F of LCO 3.8.1 would be entered. INSERT 10 Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(s)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG. 5

5 **INSERT 10**

if one or more DG(s) in Train A and Train B are inoperable

BASES

ACTIONS (continued)

(s)

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

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

B.4

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

(s) AC Electrical Power

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The ~~72 hour~~ 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

INSERT 11 5

~~C~~ ~~E~~ D.1 and ~~C~~ ~~E~~ D.2 5

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

5 **INSERT 11**

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

Condition C is entered for an offsite circuit inoperable solely due to an inoperable power source to 6.9 kV Shutdown Board 2A-A or 2B-B. Required Action C.1 verifies the OPERABILITY of the remaining offsite circuit within an hour of the inoperability and every 8 hours thereafter. Since the Required Action only specifies "perform," a failure of the SR 3.8.1.1 acceptance criteria does not result in a Required Action not met.

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

a. 6.9 kV Shutdown Board 2A-A or 2B-B has no offsite power; and
b. A required feature on the other train is inoperable.

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

A Completion Time of 24 hours is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE offsite circuit and DGs are adequate to support these functions. The Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

Operation may continue in Condition C for a period of 7 days. With one offsite circuit inoperable, the reliability of the functions is degraded. The potential for the loss of offsite power to the redundant feature(s) is increased, with the attendant potential for a challenge to their safety functions.

The required offsite circuit must be returned to OPERABLE status within 7 days~~, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered~~. The 7 days Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

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5

INSERT 11 (Continued)

D.1, D.2, D.3 and D.4

To ensure a highly reliable power source remains with an inoperable DG to a Unit 2 6.9 kV Shutdown Board, it is necessary to verify the availability of the 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 a Required Action being not met. Required Action D.1 verifies the OPERABILITY of the required offsite sources within an hour of the inoperability and every 8 hours thereafter. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must be entered.

Required Action D.2 is intended to provide assurance that a loss of offsite power, during the period that an LCO 3.8.1.d DG is inoperable, does not result in a complete loss of the safety functions.

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

a. An inoperable DG to 6.9 kV Shutdown Board 2A-A or 2B-B exists; and
b. A redundant feature in the same system is inoperable.

If at any time during the existence of Condition D (one DG to 6.9 kV Shutdown Board 2A-A or 2B-B) a redundant feature in the same system subsequently becomes inoperable, this Completion Time begins to be tracked. The four hour Completion Time is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and DGs are adequate to support the functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

D.3.1 and D.3.2

Required Action D.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on another DG, the other DG would be declared inoperable, and upon discovery, Condition J of LCO 3.8.1 would be entered, if one or more DG(s) in Train A and Train B are inoperable. Otherwise, if the inoperability exists on the other DG in the same train, the other DG would be declared inoperable upon discovery, Condition B would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action D.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DGs, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

5

INSERT 11 (Continued)

~~Operation may continue in Condition D for a period of 7 days. With one Unit 2 DG inoperable, the reliability of the respective function is degraded. The potential for the loss of a DG to the redundant feature(s) is increased, with the attendant potential for a challenge to respective safety function.~~

~~The required DG must be returned to OPERABLE status within 7 days, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.~~

ACTIONS (continued)

The Completion Time for Required Action ~~C~~ ~~E~~ 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: 5

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition ~~C~~ ~~E~~ D (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~ ~~E~~ D for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 5

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

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

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

With both ~~of the required~~ offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A or Condition C, as applicable. 5

E ~~F~~ F ~~E~~ 5

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

~~Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition D~~ ~~F~~ ~~are modified by a Note to indicate that when Condition D~~ ~~F~~ ~~is entered with no AC source to~~ ~~any train~~ ~~6.9 kV Shutdown Board 1A-A or 1B-B~~~~, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition D~~ ~~F~~ ~~to provide requirements for the loss of one offsite circuit and one DG,~~ ~~to 6.9 kV Shutdown Board 1A-A or 1B-B~~ ~~without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train.~~ 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~D~~ E ~~F~~ for a period that should not exceed 12 hours. 5

In Condition ~~D~~ ~~F~~ 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 ~~C~~ D ~~E~~ (loss of both ~~required~~ offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

~~INSERT 12~~

~~J~~ F

~~E~~.1

With ~~Train A and Train B DGs~~ one or more Train A DG(s) and one or more Train B DG(s) inoperable, there are ~~no remaining~~ insufficient standby AC sources available to power an entire load group. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that 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 5

5 ~~**INSERT 12**~~

G.1 and H.1

In Conditions G and H, individual redundancy is lost in the offsite electrical power system for one unit and the onsite AC electrical power system for the other unit. Since Conditions B and C are entered concurrent with entry into Condition G, and Conditions A and D are entered concurrent with entry into Condition H, the Required Actions of Conditions B and C (or Conditions A and D) provide the appropriate compensatory measures to ensure the onsite and offsite power sources are either restored to an OPERABLE status, or the associated required features are declared inoperable, thereby requiring entry into the appropriate Conditions associated with the associated feature's LCO. The Completion Times of Required Actions G.1 and H.1 are consistent with the Completion Times of Required Actions C.3 and D.4. If, while in Condition G or H, a redundant required feature is determined to be inoperable, the required feature(s) would be declared inoperable at the Completion Times specified in Conditions A, B, C, or D, as applicable.

I.1 and I.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 I are modified by a Note to indicate that when Condition I is entered with no AC source to 6.9 kV Shutdown Board 2A-A or 2B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition I to provide requirements for the loss of one offsite power source and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized 6.9 kV Shutdown Board.

In Condition I, individual redundancy is lost in the offsite electrical power system and the onsite AC electrical power system. Concurrent with entry into Condition I, entry into Condition C (inoperable offsite power source) and Condition D (inoperable DG) are required. The Required Actions of Conditions C and D ensure the remaining offsite circuit and DGs are OPERABLE and that required features with no offsite or onsite power sources are declared inoperable when its redundant required feature is inoperable within the Completion Times of Required Actions C.2 and D.2.

BASES

ACTIONS (continued)

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.

In this Condition,

~~According to Reference 6, with both DGs inoperable,~~ operation may continue for a period that should not exceed 2 hours, consistent with the guidance provided in Reference 6. 5

~~[F.1~~ 5

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

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

G ~~K~~ ~~K~~ G

~~G~~.1 and ~~G~~.2 5

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

BASES

ACTIONS (continued)

H I

L.1 and M.1 ~~H.1~~

H and I

s L and M

Condition ~~H~~ corresponds~~s~~ to a level of degradation in which ~~all~~ redundancy in the AC electrical power supplies cannot be assured ~~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. 5

SURVEILLANCE REQUIREMENTS

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

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 6210 ~~[3740]~~ V is 90% of the nominal 6900 ~~4160~~ V output voltage. This value, which is specified in ANSI C84.1 (Ref. 10 ~~11~~), allows for voltage drop to the terminals of 6600 ~~4000~~ V motors whose minimum operating voltage is specified as 90% or 5940 ~~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 7260 ~~[4756]~~ V is equal to the maximum operating voltage specified for 6600 ~~4000~~ V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 6600 ~~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). 2 1 1 1 2 1 1

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. ~~[The 7 day Frequency is~~ 7

BASES

APPLICABILITY

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

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

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

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

ACTIONS

The ACTIONS are modified by a Note that

~~A Note~~ prohibits the application of LCO 3.0.4.b to an inoperable DG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable DG and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance. 5

A second Note provides the appropriate restrictions for a de-energized shutdown board. 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 ACTIONS are modified by a Note to indicate that when any Condition(s) is entered with no AC power source to any shutdown board resulting in a de-energized shutdown board, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows LCO 3.8.1 Conditions to provide requirements for the loss of any combination of AC Sources, without regard to whether a shutdown board is de-energized and LCO 3.8.9 to provide the appropriate restrictions for a de-energized shutdown board. 5

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable~~,~~ for reasons other than Condition C, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~ ~~E~~ D, for two offsite circuits inoperable, is entered. 5 5

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~---~~

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. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. 1

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

B.1

To ensure a highly reliable power source remains with INSERT 9 ~~an~~ inoperable ~~DG~~, 5
it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered.

~~-----------------------------------REVIEWER'S NOTE-----------------------------------~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~---~~

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG(s) is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG(s). 5 5

5 **INSERT 9**

~~DG 1A-A, DG 1B-B, DGs 1A-A and 2A-A, or DGs 1B-B and 2B-B~~

one or more Train A DGs, or one or more Train B DGs

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BASES

ACTIONS (continued)

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

a. An inoperable DG exists and

b. A required feature on the other train ~~(Train A or Train B)~~ is inoperable. 5

or more DGs in a train

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

or more DGs in a train

Discovering one ~~required DG~~ inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is ~~A~~acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 5 4

s AC Electrical Power

In this Condition, the remaining OPERABLE DGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1 5

<u>B.3.1 and B.3.2</u>

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(~~s~~)~~, the other DG~~(~~s~~)~~ would be declared inoperable upon discovery and Condition ~~E~~ F of LCO 3.8.1 would be entered. INSERT 10 Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(s)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG. 5

5 **INSERT 10**

if one or more DG(s) in Train A and Train B are inoperable

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BASES

ACTIONS (continued)

(s)

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

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

B.4

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

(s) AC Electrical Power

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The 7 day ~~72 hour~~ Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

INSERT 11 5

D D D

~~C~~.1 and ~~C~~.2 5

~~E~~ ~~E~~ ~~E~~

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

5 **INSERT 11**

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

Condition C is entered for an offsite circuit inoperable solely due to an inoperable power source to 6.9 kV Shutdown Board 1A-A or 1B-B. Required Action C.1 verifies the OPERABILITY of the remaining offsite circuit within an hour of the inoperability and every 8 hours thereafter. Since the Required Action only specifies "perform," a failure of the SR 3.8.1.1 acceptance criteria does not result in a Required Action not met.

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

a. 6.9 kV Shutdown Board 1A-A or 1B-B has no offsite power; and
b. A required feature on the other train is inoperable.

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

A Completion Time of 24 hours is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE offsite circuit and DGs are adequate to support these functions. The Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

Operation may continue in Condition C for a period of 7 days. With one offsite circuit inoperable, the reliability of the functions is degraded. The potential for the loss of offsite power to the redundant feature(s) is increased, with the attendant potential for a challenge to their safety functions.

The required offsite circuit must be returned to OPERABLE status within 7 days~~, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered~~. The 7 days Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

5

INSERT 11 (Continued)

D.1, D.2, D.3, and D.4

To ensure a highly reliable power source remains with an inoperable DG to a Unit 1 6.9 kV Shutdown Board, it is necessary to verify the availability of the 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 a Required Action being not met. Required Action D.1 verifies the OPERABILITY of the required offsite sources within an hour of the inoperability and every 8 hours thereafter. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must be entered.

Required Action D.2 is intended to provide assurance that a loss of offsite power, during the period that an LCO 3.8.1.d DG is inoperable, does not result in a complete loss of the safety functions.

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

a. An inoperable DG to 6.9 kV Shutdown Board 1A-A or 1B-B exists; and
b. A redundant feature in the same system is inoperable.

If at any time during the existence of Condition D (one DG to 6.9 kV Shutdown Board 1A-A or 1B-B) a redundant feature in the same system subsequently becomes inoperable, this Completion Time begins to be tracked. The four hour Completion Time is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and DGs are adequate to support the functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

D.3.1 and D.3.2

Required Action D.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on another DG, the other DG would be declared inoperable, and upon discovery, Condition J of LCO 3.8.1 would be entered, if one or more DG(s) in Train A and Train B are inoperable. Otherwise, if the inoperability exists on the other DG in the same train, the other DG would be declared inoperable upon discovery, Condition B would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action D.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DGs, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

5

INSERT 11 (Continued)

Operation may continue in Condition D for a period of 7 days. With one Unit 2 DG inoperable, the reliability of the respective function is degraded. The potential for the loss of a DG to the redundant feature(s) is increased, with the attendant potential for a challenge to respective safety function.

The required DG must be returned to OPERABLE status within 7 days, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

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ACTIONS (continued)

The Completion Time for Required Action ~~C~~ ~~E~~ 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: 5

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition ~~C~~ ~~E~~ D (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~ ~~E~~ D for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 5

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

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

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

With both ~~of the required~~ offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A or Condition C, as applicable. 5

E E

~~D~~ ~~F~~ E.1 and ~~D~~ ~~F~~ E.2 5

~~Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition~~ ~~D~~ ~~F~~ ~~are modified by a Note to indicate that when Condition~~ ~~D~~ ~~F~~ ~~is entered with no AC source to~~ ~~any train~~ ~~6.9 kV Shutdown Board 2A-A or 2B-B~~~~, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition~~ ~~D~~ ~~F~~ ~~to provide requirements for the loss of one offsite circuit and one DG~~ ~~to 6.9 kV Shutdown Board 2A-A or 2B-B~~~~, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train.~~ 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~D~~ ~~F~~ E for a period that should not exceed 12 hours. 5

In Condition ~~D~~ ~~F~~ 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 ~~C~~ ~~E~~ 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, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

~~INSERT 12~~

~~E~~ ~~J~~ F.1 5

With ~~Train A and Train B DGs~~ one or more Train A DG(s) and one or more Train B DG(s) inoperable, there are ~~no remaining~~ insufficient standby AC sources available to power an entire load group. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that 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

5 **~~INSERT 12~~**

G.1 and H.1

In Conditions G and H, individual redundancy is lost in the offsite electrical power system for one unit and the onsite AC electrical power system for the other unit. Since Conditions B and C are entered concurrent with entry into Condition G, and Conditions A and D are entered concurrent with entry into Condition H, the Required Actions of Conditions B and C (or Conditions A and D) provide the appropriate compensatory measures to ensure the onsite and offsite power sources are either restored to an OPERABLE status, or the associated required features are declared inoperable, thereby requiring entry into the appropriate Conditions associated with the associated feature's LCO. The Completion Times of Required Actions G.1 and H.1 are consistent with the Completion Times of Required Actions C.3 and D.4. If, while in Condition G or H, a redundant required feature is determined to be inoperable, the required feature(s) would be declared inoperable at the Completion Times specified in Conditions A, B, C, or D, as applicable.

I.1 and I.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 I are modified by a Note to indicate that when Condition I is entered with no AC source to 6.9 kV Shutdown Board 1A-A or 1B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition I to provide requirements for the loss of one offsite power source and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized 6.9 kV Shutdown Board.

In Condition I, individual redundancy is lost in the offsite electrical power system and the onsite AC electrical power system. Concurrent with entry into Condition I, entry into Condition C (inoperable offsite power source) and Condition D (inoperable DG) are required. The Required Actions of Conditions C and D ensure the remaining offsite circuit and DGs are OPERABLE and that required features with no offsite or onsite power sources are declared inoperable when its redundant required feature is inoperable within the Completion Times of Required Actions C.2 and D.2.

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BASES

ACTIONS (continued)

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.

In this Condition,

~~According to Reference 6, with both DGs inoperable~~, operation may continue for a period that should not exceed 2 hours. 5

, consistent with the guidance provided in Reference 6 5

~~[F.1~~ 5

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

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

G ~~K~~ ~~K~~ G

~~G~~.1 and ~~G~~.2 5

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

BASES

ACTIONS (continued)

H I

L.1 and M.1

~~H~~.1

H and I

s L and M

Condition ~~H~~ correspond~~s~~ to a level of degradation in which ~~all~~ redundancy in the AC electrical power supplies cannot be assured ~~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. 5

SURVEILLANCE REQUIREMENTS

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

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 6210 ~~[3740]~~ V is 90% of the nominal 6900 ~~4160~~ V output voltage. This value, which is specified in ANSI C84.1 (Ref. 10 ~~11~~), allows for voltage drop to the terminals of 6600 ~~4000~~ V motors whose minimum operating voltage is specified as 90% or 5940 ~~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 7260 ~~[4756]~~ V is equal to the maximum operating voltage specified for 6600 ~~4000~~ V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 6600 ~~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). 2 1 1 1 2 1 1

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. ~~[The 7 day Frequency is~~ 7

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

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L01

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

CTS 3.8.1.1 ACTION a provides actions for one inoperable offsite circuit and allows 72 hours to restore the inoperable offsite circuit to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable and allows 7 days to restore the inoperable DG(s) to OPERABLE status before requiring the unit to be shut down and cooled down.~~ CTS 3.8.1.1 ACTION c provides actions for one inoperable offsite circuit and one inoperable DG and allows 12 hours to restore at least one of the inoperable AC sources to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION d provides actions for two inoperable offsite circuits and allows 24 hours to restore at least one of the inoperable offsite circuits to OPERABLE status before requiring the unit to be shut down. CTS 3.8.1.1 ACTION e provides actions for one or two inoperable DGs in both trains and allows 2 hours to restore the inoperable DG(s) in one train to OPERABLE status before requiring the unit to be shut down and cooled down. CTS 3.8.1.1 ACTION f states LCO 3.0.4.b is not applicable to DGs. The ITS ACTIONS are modified by a Note stating LCO 3.0.4.b is not applicable to DGs.~~ ITS 3.8.1 ACTION A provides actions for one inoperable offsite circuit for reasons other than Condition C, and allows 72 hours to restore the inoperable offsite power source to OPERABLE status. ~~ITS 3.8.1 ACTION B provides actions for one inoperable associated unit's DG or both DGs in one train inoperable, and allows 7 days to restore the inoperable DG(s) to OPERABLE status.~~ ITS 3.8.1 ACTION C provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board, and ~~requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite circuit cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION D requires declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION E requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 12 hours. Otherwise, one offsite circuit is required to be restored to an OPERABLE status in 24 hours.~~ ITS 3.8.1 ACTION ~~F~~ E provides actions for one associated unit's offsite circuit inoperable concurrent with one associated unit's DG inoperable, and allows 12 hours to restore one of the inoperable AC sources to OPERABLE status. ~~ITS ACTION G requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no offsite power available inoperable in 7 days. ITS ACTION H requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no DG available inoperable in 7 days. ITS ACTION I provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board concurrent with one opposite unit's DG inoperable, and allows 7 days~~

requires: 1) performance of ITS SR 3.8.1.1 for the OPERABLE offsite circuit in 1 hour and once per 8 hours thereafter, 2) declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and 3) restoration of the offsite circuit to OPERABLE status in 7 days.

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~~to restore one of the inoperable AC sources to OPERABLE status. In addition, a Note~~

For the condition of one offsite circuit inoperable solely due to an inoperable power source to an opposite unit's 6.9 kV Shutdown Board concurrent with an inoperable DG (similar to CTS 3.8.1.1 Action c), ITS 3.8.1 Conditions B and C would be entered concurrently. ITS 3.8.1 ACTIONS B and C require, in part, restoration of the inoperable AC sources (circuit and DG) to an OPERABLE status in 7 days. This changes the CTS by providing a new ITS 3.8.1 ACTION C to allow 7 days to restore an inoperable offsite circuit to an OPERABLE status, if the offsite circuit is inoperable solely due to an inoperable power source to an opposite unit's Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable).

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and DGs. The onsite Class 1E AC Electrical Distribution System supplies electrical power to two power trains shared between the two units. The core cooling and containment cooling system loads (e.g., Safety Injection (SI) pumps, Auxiliary Feedwater (AFW) pumps, Residual Heat Removal (RHR) pumps, Centrifugal Charging pumps, Containment Spray pumps, and Air Return System (ARS) fans) are unitized to the respective unit's 6.9 kV Shutdown Boards. However, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVs), and Control Room HVAC (CRACS)) are shared between the units. The AC sources for the shared loads are distributed across both unit's shutdown boards. Therefore, two qualified offsite circuits and four DGs capable of supplying the onsite Class 1E AC Electrical Distribution System are required to be OPERABLE. However, the impacts of an inoperable offsite power source or DG on an opposite unit's 6.9 kV Shutdown Board differ from the impacts of an inoperable offsite power source or DG on an associated unit's 6.9 kV Shutdown Board, due to the loads powered from the respective board.

For example, with SQN Unit 1 in MODES 1, 2, 3, and 4, 6.9 kV Shutdown Boards 1A-A and 1B-B, and the associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to the ESF systems powered from those boards. Additionally, 6.9 kV Shutdown Boards 2A-A and 2B-B and associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to any required shared components required for Unit 1. If it is necessary to de-energize 6.9 kV Shutdown Board 2A-A or 2B-B, the redundant shared systems can be aligned prior to de-energizing the shutdown board to ensure no loss of safety function will occur. Upon removing the shutdown board from service, the applicable Conditions and Required Actions for the affected shared system LCOs will be entered and tracked and either the offsite power source or the DG is required to be restored to an OPERABLE status in 7 days.

In the event of an unplanned loss of an offsite power source to an opposite unit's 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and restoration of the offsite circuit to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite power source cannot be restored to an OPERABLE status. Similarly, in~~ In the event of an unplanned loss of a DG to an opposite unit 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours, and restoration of the DG to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared~~

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~~inoperable in 7 days, if the DG cannot be restored to an OPERABLE status~~. In both cases, the ACTIONS require performance of SR 3.8.1.1 for the required OPERABLE offsite circuit(s) within 1 hour and once per 8 hours thereafter.

ITS 3.8.1 ACTION G is entered and the unit is required to be shut down to MODE 3 in 6 hours and MODE 5 in 36 hours.

The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair inoperable features. If the necessary repairs cannot be made within the established Completion Time, ~~the associated required features are declared inoperable and the applicable Conditions and Required Actions for the affected shared system LCOs are entered and tracked~~. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's ~~AC sources~~ offsite circuit commensurate with the importance of maintaining ~~these AC sources~~ offsite circuit capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Tennessee Valley Authority (TVA) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. This change will not affect the probability of an accident, since the offsite AC circuits ~~and DGs~~ are not initiators of any accident sequence analyzed in the Updated Final Safety Analysis Report (UFSAR). Rather, offsite AC power sources ~~and DGs~~ support equipment used to mitigate accidents. The consequences of an analyzed accident will not be significantly increased since the minimum requirements for AC power sources will be maintained to ensure the availability of the required power to mitigate accidents assumed in the UFSAR. Operation in accordance with the proposed TS will ensure that sufficient onsite and offsite AC power sources are OPERABLE as required to support the unit's required features. Therefore, the mitigating functions supported by the onsite and offsite AC power sources will continue to provide the protection assumed by the accident analysis. The integrity of fission product barriers, plant configuration, and operating procedures as described in the UFSAR will not be affected by the proposed changes. Thus, the consequences of previously analyzed accidents will not increase by implementing these changes. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. This change will not physically alter the plant (no new or different type of equipment will be installed). The proposed changes will maintain the minimum requirements for AC power sources to ensure the availability of the equipment required to mitigate accidents assumed in the UFSAR. Therefore, operation of the facility in accordance with this proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. The margin of safety is not affected by this change because the minimum requirements for AC power sources will be maintained to ensure the availability of the required power to shutdown the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Therefore, the proposed changes do not involve a significant reduction in a margin of safety

Licensee Response/NRC Response/NRC Question Closure

Id	**453**
NRC Question Number	**VKG026**
Select Application	**NRC Question Closure**
Attachment 1	
Attachment 2	
Response Statement	
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Question Closure Date	**5/14/2015**
Notification	**Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele** **Roger Scott**
Added By	**Khadijah Hemphill**
Date Added	**5/14/2015 3:11 PM**
Date Modified	
Modified By	

ITS NRC Questions

Id	**197**
NRC Question Number	**VKG027**
Category	**Technical**
ITS Section	**3.8**
ITS Number	**3.8.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**

NRC Question

ITS 3.8.1 (for Unit 1), Condition C, "One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable," Action C.3 requires, "Declare associated required feature(s) inoperable," within 7 days. While Unit 2 will be required to shutdown after 72 hours if the Shutdown Board is not restored, Unit 1 can remain in operational mode unless some other LCO Action statement requires Unit 1 to shutdown or restore the inoperable circuit to the operable status.

CTS requires both Units to shutdown after 72 hours when an offsite circuit becomes inoperable. However, based on response to RAI # VKG004 (similar to the response to RAI # VKG007), the ITS would allow one of the Units to remain in operational mode for 10 to 14 days. Staff is concerned that the Unit in operation would not be able to safely shutdown in case of "Loss of Onsite power (only Offsite power available from remaining Offsite circuits), LOCA, <u>and worst case single failure</u> in one of the safety-related systems (GDC 17, GDC 34, and GDC 35 requirements)" during the extended period of the one of Offsite circuits inoperability. CTS accepts this risk for 3 days, but ITS is extending this risk for an additional 7 or 11 days. Although, the Commission allows single failure not to be

considered during an LCO Action statement, the staff is concerned regarding the extended Offsite circuit inoperability. Typically, according to standard TS and Regulatory Guide 1.93, the inoperability of an Offsite circuit is limited to 72 hours.

The above staff concerns are also applicable to Condition G, in which an offsite circuit impacting the opposite Unit shutdown board becomes inoperable. ITS 3.8.1.G does not require the Offsite circuit to be restored; only the associated required features are to be declared inoperable.

Please provide the technical basis for the relaxation of Completion Times described above or revise ITS 3.8.1 Conditions C and G appropriately for both Units (i.e., to be consistent with the current licensing basis).

Attach File 1	
Attach File 2	
Issue Date	**11/18/2014**
Added By	**Khadijah Hemphill**
Date Modified	
Modified By	
Date Added	**11/18/2014 5:38 PM**
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele** **Roger Scott**

Licensee Response/NRC Response/NRC Question Closure

Id	**433**
NRC Question Number	**VKG027**
Select Application	**Licensee Response**
Attachment 1	**Attachment 1 for RAI VKG027 with VKG027 Indicators.pdf** (3MB)
Attachment 2	
Response Statement	

In response to RAI VKG027, ITS 3.8.1 Required Action C.3 will be revised to reflect the requirement to restore an offsite circuit that is inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV shutdown board to an OPERABLE status in 7 days.

On December 16, 1998, NRC issued Technical Specification Amendments for SQN, Units 1 and 2 (TAC Nos. M96600 and M96601)(TS 96-08)(ADAMS Accession No. 9812210233). The amendments revised the SQN Technical Specifications by extending the allowed outage time (AOT) for the SQN emergency diesel generators (EDG) from 72 hours to 7 days. Although SQN had demonstrated, based on a probabilistic risk assessment (PRA) basis, that the extended EDG AOT would result in no significant increase in risk, the staff also reviewed the submittal from a deterministic approach. Based on the Staff's review, it was determined that a 7 day AOT was acceptable. Regulatory Guide 1.93, Rev. 0 states that "a general distinction does not appear to be warranted for operating restrictions associated with the loss of an offsite source and those restrictions associated with the loss of an onsite a.c. supply." Regulatory Guide 1.93, Rev. 1, Section C. "Regulatory Position" discusses the seven levels of degradation of the electric power system in order of increasing degradation. The lowest level of degradation listed is "The available offsite ac power sources are one less than the LCO." The second lowest level of degradation listed is "The available onsite ac power sources are one less than the LCO." Both of these levels of degradation have the same AOT, which is consistent with the statement made in Rev. 0 of Regulatory Guide 1.93. The revision to ITS 3.8.1 Condition C will align the AOT for an inoperable offsite power source to an <u>opposite</u> unit's 6.9 kV shutdown board to correspond to the AOT for an inoperable onsite (EDG) power source.

As stated in UFSAR Section 3.1.2, SQN fully meets the requirements of General Design Criteria (GDC) 17, 34, and 35. The proposed extension of the AOT for an inoperable offsite circuit to the opposite unit 6.9 kV shutdown board does not modify the electrical power, residual heat removal, or emergency core cooling systems. Each of these systems will continue to be capable of performing their intended design function. Therefore, SQN will continue to meet the requirements of GDC 17, 34, and 35 with the extension of the AOT.

At SQN, the majority of the loads necessary to mitigate design basis accidents (DBAs) are powered from the <u>associated</u> unit's two trained 6.9 kV shutdown boards that each have an offsite and onsite (EDG) power source. Consistent with Regulatory Guide 1.93 and ISTS 3.8.1, a loss of the offsite power source to their respective train for the <u>associated</u> unit will require entry into a Condition and Required Action Completion Time of 72 hours. However, there are shared loads that are powered from the opposite unit's trained power supply. The systems that are shared between Unit 1 and Unit 2 and powered from Unit 1 are the Emergency Gas Treatment System (EGTS), Essential Raw Cooling Water (ERCW) System, Component Cooling Water System (CCS), Control Room Emergency Ventilation System (CREVS), Control Room Air-Conditioning System (CRACS), and the 125V Vital DC System. The shared systems powered from Unit 2 are the Auxiliary Building Gas Treatment System (ABGTS), the Auxiliary Control Air System (ACAS), Essential Raw Cooling Water (ERCW) System, Component Cooling Water System (CCS), and the 125V Vital DC System. In ITS 3.8.1, a loss of an offsite power source to an <u>opposite</u> unit shutdown board would require verification of the breaker alignment and indicated power availability for the OPERABLE offsite circuit within 1 hour, verification that the required features with no offsite power available have OPERABLE redundant features, otherwise declare the required feature inoperable, and entry into a Condition and Required Action Completion Time of 7 days to restore the offsite circuit to OPERABLE status. With a single inoperable offsite power source to an opposite unit shutdown board, all required features remain OPERABLE with redundancy. For a loss of safety function to occur, a complete loss of onsite power along with the offsite power to the redundant train on the opposite unit would have to occur.

SQN has maintenance activities that need to be performed on the

shutdown boards. The entire maintenance activity cannot be performed under the current AOT of 72 hours. The extension of the AOT for an inoperable offsite circuit to an opposite unit shutdown board would allow the maintenance activities to be performed during a scheduled outage on the opposite unit. The increased AOT will not increase the probability or consequences of any accident previously evaluated. The power sources are required to be OPERABLE to support the associated unit's required features. Because the offsite circuit is not an initiator of any accident sequence, inoperability of the circuit will not affect the probability of an accident occurring. The consequences of any accident previously evaluated will not be increased. The steam line break (SLB), steam generator tube rupture (SGTR), small break loss of coolant accident (SBLOCA), large break LOCA (LBLOCA), and main feedwater pipe rupture (MFWPR) events are sensitive to the availability of the onsite and offsite power sources. For a SLB and SGTR, the limiting analyses assume that a loss of offsite power occurs. With an offsite circuit already made inoperable, the resultant analyses for SLB and SGTR will, therefore, not be impacted. For the SBLOCA, the analysis assumes that a loss of offsite power occurs, which will trip the reactor coolant pumps (RCPs). A delay in tripping the RCPs can potentially produce more limiting results. Therefore, with an offsite circuit already made inoperable, there is no impact on the analysis for a SBLOCA. For the LBLOCA, transient calculations were performed, both with and without a loss of offsite power. As stated in UFSAR Section 15.4.1.4, the most limiting case producing the highest peak clad temperature (PCT), occurs with offsite power available. Table 15.4.1-2 indicates that offsite power was available for the limiting case and the RCPs do not trip. Because the most limiting case for the LBLOCA is having offsite power available, removing an offsite circuit would have no impact on the limiting case LBLOCA. The MFWPR event produced similar results for cases with or without offsite power. Therefore, the loss of one offsite power source will not impact the existing main feedwater pipe break analysis.

Recent modifications to the offsite power system and Technical Specification change TS-SQN-12-01 has increased the number of qualified circuits that can be used to provide offsite power to the onsite power distribution system. The unit station service transformers (USSTs) now qualify as an offsite power circuit. Additionally, SQN has never experienced a complete loss of offsite power event during commercial operation.

Increasing the AOT from 72 hours to 7 days for an inoperable offsite power supply to an opposite unit's 6.9 kV shutdown board is considered acceptable due to the limited amount of equipment that is powered from the opposite unit's shutdown board, no impact on the probability of occurrence or consequences of accidents previously evaluated, the increase in qualified circuits for providing offsite power, the fact that SQN has never experienced a loss of offsite power event, and would make the Required Action Completion Time consistent with the loss of an onsite power source.

See Attachment 1 for the draft CTS 3.8.1.1 markup, DOC, ITS 3.8.1 markup, JFD, and ITS 3.8.1 Bases markup changes based on the discussion above. Changes associated with RAI VKG027 are illustrated as such, all other changes on Attachment 1 are associated with the response to RAI VKG026.

Response Date/Time	**4/9/2015 2:30 PM**
Closure Statement	
Question Closure Date	
Notification	**Scott Bowman** **Michelle Conner** **Vijay Goel** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele**
Added By	**Scott Bowman**
Date Added	**4/9/2015 1:26 PM**
Date Modified	
Modified By	

ITS A01 ITS 3.8.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

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

LCO 3.8.1.a — a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system~~@~~, and LA01 A02

LCO 3.8.1.b — b. Four ~~separate and independent~~ diesel generator sets each with: LA01

1. ~~Two diesels driving a common generator~~

SR 3.8.1.4 — 2. Two engine-mounted fuel tanks containing a minimum volume of 250 gallons of fuel, per tank

3. A separate fuel storage system containing a minimum volume of 62,000 gallons of fuel, — See ITS 3.8.3

SR 3.8.1.6 — 4. A separate fuel transfer pump, and

5. A separate 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger. — See ITS 3.8.4 and 3.8.9

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

ACTION:

Add proposed Condition A — L01

ACTION A / ACTION ~~K~~ G

a. ~~With one offsite A.C. circuit of the above required A.C. electrical power source inoperable,~~ demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. Restore ~~at least two~~ offsite circuit~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L01 L02

~~Add proposed Condition B~~ ~~L01~~

STET

ACTION B / ACTION ~~K~~ G

b.~~#~~ ~~With diesel generator set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B 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 one hour and at least once per 8 hours thereafter, and determining OPERABLE diesel generator sets are not inoperable due to common cause failure or performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore ~~at least four~~ diesel generator set~~s~~ to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~ STET

Add proposed ACTION~~S~~ C ~~and D~~ — L01

~~# Required actions, to verify OPERABLE diesel generator sets are not inoperable due to common cause failure or perform SR 4.8.1.1.2.a.4, shall be completed if this action is entered.~~ L02

SR 3.8.1.3 Note 3 — * No more than one diesel generator may be made simultaneously inoperable on a pre-planned basis for ~~maintenance, modifications, or~~ surveillance testing. L03

~~@ Offsite circuits utilizing USST 2A and USST 2B as the normal power sources require CSST A and CSST C to be available as the alternate power sources via automatic transfer at the associated 6.9 kV Unit Boards. (CSST B can be substituted for CSST A or CSST C.) This Note remains in effect until November 30, 2013, or until the USST modifications are implemented on Units 1 and 2, whichever occurs first.~~ A02

ITS　　　A01　　　ITS 3.8.1

ELECTRICAL POWER SYSTEMS

Add proposed ACTION F Note　E　A03

ACTION (Continued)

Add proposed Condition F　E　L01

ACTION F　E　c. ~~With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable~~, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.　L04

ACTION A, ACTION B, ACTION F　E

ACTION K　G

ACTION E　D　d. With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating~~; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours　L05

ACTION K　G

and MODE 5 within 36 hours　M01

ACTION J　F　e. With either diesel generator sets 1A-A and/or 2A-A inoperable simultaneously with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.　~~L01~~

ACTION B

ACTION J　F

ACTION K　G

~~Add proposed ACTIONS G, H, and I~~　~~L01~~

ACTIONS Note　f. LCO 3.0.4.b is not applicable to diesel generators.

Add proposed ACTIONS L and M　H　I　A04

SURVEILLANCE REQUIREMENTS

SR 3.8.1.1　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:　LA01

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

In accordance with the Surveillance Frequency Control Program　LA02

SR 3.8.1.8　b. Demonstrated OPERABLE ~~at least once per 18 months~~# by manually and automatically transferring the power supply to each 6.9 kV Unit Board## from the normal supply to the alternate supply.

SR 3.8.1.8 Note 1　# For the 1A, 1B, 1C and 1D 6.9 kV Unit Boards, this Surveillance shall not be performed in MODES 1 and 2.

Add proposed SR 3.8.1.8 Note 1, second and third sentences.　L06

SR 3.8.1.8 Note 2　## Transfer capability is only required to be met for 6.9 kV Unit Boards that require normal and alternate power supplies.

ITS

A01

ITS 3.8.1

3/4 LIMITING CONDITIONS FOR OPEATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met and as provided in LCO 3.0.7.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

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

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

See ITS 3.0

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

3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Required Actions A.2, B.2, ~~E.1~~, and associated Completion Times

C.2, ~~D.1~~

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3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both

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APPLICABILITY

LIMITING CONDITION FOR OPERATION (Continued)

, C.2

24 hours for Required Action A.2
4 hours for Required Action B.2
12 hours for Required Action E.1

D

3.0.5 (Continued)

conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in~~:

L20

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

Declare required features inoperable.

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

A08

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

3.0.7 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

See ITS 3.0

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

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ITS A01 ITS 3.8.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE: LA01

LCO 3.8.1.a a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system~~@~~, and A02

LCO 3.8.1.b b. Four ~~separate and independent~~ diesel generator sets each with: LA01

1. ~~Two diesels driving a common generator~~

SR 3.8.1.4 2. Two engine-mounted fuel tanks containing a minimum volume of 250 gallons of fuel, per tank

3. A separate fuel storage system containing a minimum volume of 62,000 gallons of fuel, See ITS 3.8.3

SR 3.8.1.6 4. A separate fuel transfer pump, and

5. A separate 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger. See ITS 3.8.4 and 3.8.9

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

ACTION:

Add proposed Condition A L01

ACTION A a. ~~With one offsite A.C. circuit of the above required A.C. electrical power sources inoperable,~~ demonstrate the OPERABILITY of the remaining offsite A.C. circuit by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. Restore ~~at least two~~ offsite circuit~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L01

G ACTION ~~K~~ L02

~~Add proposed Condition B~~ ~~L01~~

STET

ACTION B b.~~#~~ ~~With diesel generator set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B 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 one hour and at least once per 8 hours thereafter, and determining OPERABLE diesel generator sets are not inoperable due to common cause failure or performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours; restore ~~at least four~~ diesel generator set~~s~~ to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~L01~~

STET

G ACTION ~~K~~

Add proposed ACTIONS C ~~and D~~ L01

~~# Required actions, to verify OPERABLE diesel generator sets are not inoperable due to common cause failure or perform SR 4.8.1.1.2.a.4, shall be completed if this action is entered.~~ L02

SR 3.8.1.3 Note 3 * No more than one diesel generator may be made simultaneously inoperable on a pre-planned basis for ~~maintenance, modifications, or~~ surveillance testing. L03

~~@ Offsite circuits utilizing USST 2A and USST 2B as the normal power sources require CSST A and CSST C to be available as the alternate power sources via automatic transfer at the associated 6.9 kV Unit Boards. (CSST B can be substituted for CSST A or CSST C.) This Note remains in effect until November 30, 2013, or until the USST modifications are implemented on Units 1 and 2, whichever occurs first.~~ A02

ITS A01 ITS 3.8.1

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

Add proposed ACTION ~~F~~ E Note A03

Add proposed Condition ~~F~~ E L01

ACTION ~~F~~ E c. ~~With one offsite circuit and one diesel generator set of the above required A.C. electrical power sources inoperable,~~ demonstrate the OPERABILITY of the remaining A.C. sources by

ACTION A, ACTION B, ACTION ~~F~~ E performing Surveillance Requirements 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT L04

ACTION ~~K~~ G STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION ~~E~~ D d. With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of 4 diesel generator sets by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generator sets are already operating~~; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in L05

ACTION ~~K~~ G at least HOT STANDBY within the next 6 hours and MODE 5 within 36 hours M01

ACTION ~~J~~ F e. With either diesel generator sets 1A-A and/or 2 A-A inoperable simultaneous with 1B-B and/or 2B-B, demonstrate the OPERABILITY of two offsite A.C. circuits by performing

ACTION B Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least 1) 1A-A and 2A-A or 2) 1B-B and 2B-B to OPERABLE status ~~L01~~

ACTION ~~J~~ F within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD

ACTION ~~K~~ G SHUTDOWN within the following 30 hours.

~~Add proposed ACTIONS G, H, and I~~ ~~L01~~

ACTIONS Note f. LCO 3.0.4.b is not applicable to diesel generators.

Add proposed ACTIONS ~~L~~ H and ~~M~~ I A04

SURVEILLANCE REQUIREMENTS

SR 3.8.1.1 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: LA01

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

In accordance with the Surveillance Frequency Control Program LA02

SR 3.8.1.8 b. Demonstrated OPERABLE ~~at least once per 18 months~~# by manually and automatically transferring the power supply to each 6.9 kV Unit Board ## from the normal supply to the alternate supply.

SR 3.8.1.8 Note 1 # For the 2A, 2B, 2C and 2D 6.9 kV Unit Boards this Surveillance shall not be performed in MODES 1 and 2. Add proposed SR 3.8.1.8 Note 1, second and third sentences. L06

SR 3.8.1.8 Note 2 ## Transfer capability is only required to be met for 6.9 kV Unit Boards that require normal and alternate power supplies.

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding Specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met and as provided in LCO 3.0.7.

3.0.2 Noncompliance with a Specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Conditions for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

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

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

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

See ITS 3.0

3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Required Actions A.2, B.2, ~~E.1,~~ and associated Completion Times

C.2, B.1

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3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification. Unless both

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APPLICABILITY

LIMITING CONDITION FOR OPERATION

, C.2

3.0.5 (Continued)

24 hours for Required Action A.2
4 hours for Required Action B.2
12 hours for Required Action ~~E~~.1

D

conditions (1) and (2) are satisfied, within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

L20

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

Declare required features inoperable.

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

A08

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

3.0.7 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

See ITS 3.0

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other specified conditions in the Applicability for individual Limiting Condition for Operation, unless otherwise stated in the individual Surveillance Requirement. Failure to meet a Surveillance Requirement, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified surveillance interval shall be failure to meet the Limiting Conditions for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 If it is discovered that a Surveillance was not performed within its specified surveillance interval (including the allowed extension per Specification 4.0.2), then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery,

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A01 In the conversion of the Sequoyah Nuclear Plant (SQN) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 4.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional Technical Specification Task Force (TSTF) travelers included in this submittal.

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

A02 CTS 3.8.1.1.a Note @ has an expiration date of November 30, 2013. As it is anticipated that the SQN ITS Conversion License Amendment Request will not be approved by the NRC before this date, Note @ has been deleted. As such, these changes are administrative.

A03 CTS 3.8.1.1 ACTION c applies when one offsite circuit and one diesel generator (DG) are inoperable. In this condition, one or more required electrical boards may be de-energized. CTS 3.8.2.1 provides an ACTION for a de-energized required electrical board. ITS 3.8.1 ACTION ~~F~~ E Note in the Required Actions column states, "Enter applicable Conditions and Required Action of LCO 3.8.9, "Distribution System - Operating," when Condition ~~F~~ E is entered with no AC power source to 6.9 kV Shutdown Board 1A-A [2A-A for Unit 2] or 1B-B [2B-B for Unit 2] ~~any train~~." This changes the CTS by specifically requiring the compensatory actions for Distribution System - Operating to be taken, if a distribution train is made inoperable by inoperable AC Sources.

This change is acceptable because no changes are made to CTS requirements. CTS 3.0.1 requires the associated ACTION requirements to be met when an LCO is not met. With the addition of ITS LCO 3.0.6, an exception to ITS LCO 3.0.2 (CTS 3.0.1) was created, whereby ACTION requirements associated with an unmet LCO are not required to be met. Therefore, in the event AC Sources are inoperable such that a distribution subsystem is de-energized, ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in the event of an entire train without power, specific direction to take appropriate ACTIONS for the Distribution System is added (ITS 3.8.1, Note to ACTION ~~F~~ E) for the condition of no power for 6.9 kV Shutdown Board 1A-A [2A-A for Unit 2] or 1B-B [2B-B for Unit 2] ~~a train~~. This format and construction implements the existing treatment of this condition within the framework of the ITS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A04 CTS 3.8.1.1 does not contain an ACTION for multiple offsite circuits and DGs inoperable. Having multiple offsite circuits and DGs inoperable requires entering CTS LCO 3.0.3. ITS 3.8.1 ACTION ~~L~~ H requires entering LCO 3.0.3 immediately, if two offsite circuits are inoperable concurrent with one or more inoperable Train A or Train B DG(s). ITS 3.8.1 ACTION ~~M~~ I requires entering LCO 3.0.3 immediately, if one offsite circuit is inoperable concurrent with one or more inoperable Train A and Train B DGs. This changes the CTS by adding specific ACTIONS requiring entry into LCO 3.0.3.

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

specific CTS DG loading requirement with a statement that DG loadings may include gradual loading as recommended by the manufacturer. This change is consistent with the recommendations of Generic Letter (GL) 93-05, "Line- Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." GL 93-05, Section 10.1, states that DGs "should be loaded in accordance with vendor recommendations for all test purposes other than the refueling outage LOOP tests." The change is acceptable, because it will ensure the DGs will continue to be operated consistent with manufacturer recommendations. This change is designated as administrative, because it does not result in a technical change to the CTS.

A07 CTS 4.8.1.1.2.d.5 requires verification that on an ESF actuation test signal (without loss of offsite power), each DG starts and operates for at least 5 minutes. ITS SR 3.8.1.12 requires a similar test, but does not specify that the DG auto-start on an ESF actuation test signal is "without loss of offsite power." This changes the CTS by not specifying the DG auto-start on an ESF actuation test signal is without a loss of offsite power signal.

The purpose of CTS 4.8.1.1.2.d.5 is to demonstrate that each DG automatically starts on an ESF actuation test signal. The requirements of this Surveillance are retained in the ITS as SR 3.8.1.12. The purpose of CTS 4.8.1.1.2.d.6.b) is to verify that each DG starts on a loss of offsite power concurrent with an ESF actuation test signal. The requirements of this Surveillance are retained in the ITS as SR 3.8.1.18. This change is acceptable, because it is understood that the CTS 4.8.1.1.2.d.5 required DG start on an ESF actuation test signal is without a loss of offsite power signal. Therefore, it is unnecessary to provide this information in ITS SR 3.8.1.12. This change is designated as administrative, because it does not result in a technical change to the CTS.

A08 CTS 3.0.5 states that it is not applicable in MODE 5 or 6. CTS 3.0.5 has been incorporated into the ACTIONS of ITS 3.8.1. This changes the CTS by incorporating the allowances of CTS 3.0.5 in ITS 3.8.1.

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

<u>MORE RESTRICTIVE CHANGES</u>

M01 CTS 3.8.1.1 ACTION d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of the offsite sources within 24 hours, and if it is not restored within the allowed time, the unit is required to be in at least HOT STANDBY within the next 6 hours. ITS 3.8.1 ACTION ~~E~~ D requires restoration of at least one offsite circuit to OPERABLE status within 24 hours, otherwise ITS 3.8.1 ACTION ~~K~~ G requires the unit to be in MODE 3 within 6 hours and MODE 5 within 36 hours. This changes the CTS by adding the requirement to be in MODE 5 within 36 hours.

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

LA06 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.g.1 requires verification of each DG's capability to reject a load of greater than or equal to 600 kW while maintaining voltage and frequency within specified ranges. ITS SR 3.8.1.9 requires a similar verification, but does not specify the value of the single largest post-accident load to reject. This changes the CTS by moving the detail of the single largest load to the ITS Bases.

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

LESS RESTRICTIVE CHANGES

L01 CTS 3.8.1.1 ACTION a provides actions for one inoperable offsite circuit and allows 72 hours to restore the inoperable offsite circuit to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable and allows 7 days to restore the inoperable DG(s) to OPERABLE status before requiring the unit to be shut down and cooled down.~~ CTS 3.8.1.1 ACTION c provides actions for one inoperable offsite circuit and one inoperable DG and allows 12 hours to restore at least one of the inoperable AC sources to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION d provides actions for two inoperable offsite circuits and allows 24 hours to restore at least one of the inoperable offsite circuits to OPERABLE status before requiring the unit to be shut down. CTS 3.8.1.1 ACTION e provides actions for one or two inoperable DGs in both trains and allows 2 hours to restore the inoperable DG(s) in one train to OPERABLE status before requiring the unit to be shut down and cooled down. CTS 3.8.1.1 ACTION f states LCO 3.0.4.b is not applicable to DGs. The ITS ACTIONS are modified by a Note stating LCO 3.0.4.b is not applicable to DGs.~~ ITS 3.8.1 ACTION A provides actions for one inoperable offsite circuit for reasons other than Condition C, and allows 72 hours to restore the inoperable offsite power source to OPERABLE status. ~~ITS 3.8.1 ACTION B provides actions for one inoperable associated unit's DG or both DGs in one train inoperable, and allows 7 days to restore the inoperable DG(s) to OPERABLE status.~~ ITS 3.8.1 ACTION C provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board, and ~~requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite circuit cannot be~~

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requires: 1) performance of ITS SR 3.8.1.1 for the OPERABLE offsite circuit in 1 hour and once per 8 hours thereafter, 2) declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and 3) restoration of the offsite circuit to OPERABLE status in 7 days.

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

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~~restored to an OPERABLE status. ITS 3.8.1 ACTION D requires declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION E requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 12 hours. Otherwise, one offsite circuit is required to be restored to an OPERABLE status in 24 hours.~~ ITS 3.8.1 ACTION ~~F~~ provides actions for one associated unit's offsite circuit inoperable concurrent with one associated unit's DG inoperable, and allows 12 hours to restore one of the inoperable AC sources to OPERABLE status. ~~ITS ACTION G requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no offsite power available inoperable in 7 days. ITS~~

E

For the condition of one offsite circuit inoperable solely due to an inoperable power source to an opposite unit's 6.9 kV Shutdown Board concurrent with an inoperable DG (similar to CTS 3.8.1.1 Action c), ITS 3.8.1 Conditions B and C would be entered concurrently. ITS 3.8.1 ACTIONS B and C require, in part, restoration of the inoperable AC sources (circuit and DG) to an OPERABLE status in 7 days. This changes the CTS by providing a new ITS 3.8.1 ACTION C to allow 7 days to restore an inoperable offsite circuit to an OPERABLE status, if the offsite circuit is inoperable solely due to an inoperable power source to an opposite unit's Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable).

~~more Train B DGs inoperable and allows 2 hours to restore one Train of DGs to OPERABLE status. ITS 3.8.1 ACTION K requires the unit to be shut down and cooled down if a Required Action and associated Completion Time of Condition A, B, E, F, I, or J is not met. These changes to the CTS provide separate ACTIONS to declare the required features powered from the opposite unit's Class 1E AC Electrical Power Distribution System inoperable as the remedial measures for the inoperable AC sources.~~

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and DGs. The onsite Class 1E AC Electrical Distribution System supplies electrical power to two power trains shared between the two units. The core cooling and containment cooling system loads (e.g., Safety Injection (SI) pumps, Auxiliary Feedwater (AFW) pumps, Residual Heat Removal (RHR) pumps, Centrifugal Charging pumps, Containment Spray pumps, and Air Return System (ARS) fans) are unitized to the respective unit's 6.9 kV Shutdown Boards. However, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVs), and Control Room HVAC (CRACS)) are shared between the units. The AC sources for the shared loads are distributed across both unit's shutdown boards. Therefore, two qualified offsite circuits and four DGs capable of supplying the onsite Class 1E AC Electrical Distribution System are required to be OPERABLE. However, the impacts of an inoperable offsite power source or DG on an opposite unit's 6.9 kV Shutdown Board differ from the impacts of an inoperable offsite power source or DG on an associated unit's 6.9 kV Shutdown Board, due to the loads powered from the respective board.

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For example, with SQN Unit 1 in MODES 1, 2, 3, and 4, 6.9 kV Shutdown Boards 1A-A and 1B-B, and the associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to the ESF systems powered from those boards. Additionally, 6.9 kV Shutdown Boards 2A-A and 2B-B and associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to any required shared components required for Unit 1. If it is necessary to de-energize 6.9 kV Shutdown Board 2A-A or 2B-B, the redundant shared systems can be aligned prior to de-energizing the shutdown board to ensure no loss of safety function will occur. Upon removing the shutdown board from service, the applicable Conditions and Required Actions for the affected shared system LCOs will be entered and tracked and either the offsite power source or the DG is required to be restored to an OPERABLE status in 7 days.

In the event of an unplanned loss of an offsite power source to an opposite unit's 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours , and restoration of the offsite circuit to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite power source cannot be restored to an OPERABLE status. Similarly,~~ In ~~in~~ the event of an ~~unplanned loss of a DG to an opposite unit 6.9 kV Shutdown Board~~, the proposed actions require declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours , and restoration of the DG to OPERABLE status in 7 days. ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status.~~ In both cases, the ACTIONS require performance of SR 3.8.1.1 for the required OPERABLE offsite circuit(s) within 1 hour and once per 8 hours thereafter.

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The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair inoperable features. If the necessary repairs cannot be made within the established Completion Time, ITS 3.8.1 ACTION G is entered and the unit is required to be shut down to MODE 3 in 6 hours and MODE 5 in 36 hours. ~~the associated required features are declared inoperable and the applicable Conditions and Required Actions for the affected shared system LCOs are entered and tracked~~. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's ~~AC sources~~ offsite circuit commensurate with the importance of maintaining these ~~AC sources~~ offsite circuit capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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L02 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION b requires with DG set(s) 1A-A and/or 2A-A or 1B-B and/or 2B-B inoperable, determination that OPERABLE DGs are not inoperable due to common cause failure or through performance of CTS 4.8.1.1.2.a.4. This ACTION is modified by Note #, requiring completion of the required action once the ACTION is entered. ITS 3.8.1

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ITS 3.8.1, AC SOURCES - OPERATING

ACTION B requires that with ~~an associated unit's DG inoperable (or with both~~ any DGs in a train inoperable~~)~~, determination that OPERABLE DGs are not inoperable due to common cause failure or through performance of SR 3.8.1.2. However, ITS does not specify completion of the ACTIONS if the Condition is exited. This changes the CTS by removing a requirement to complete the ACTIONS once the ACTION is entered.

The purpose of CTS 3.8.1.1 ACTION b is to provide compensatory measures to be taken in response to inoperable DG set(s), including demonstration that the OPERABLE DGs are not inoperable. The Note requiring completion of the actions to verify the remaining DGs are OPERABLE once the ACTION is entered was added to the CTS with License Amendments 205 (Unit 1) and 195 (Unit 2), dated June 29, 1995 (ADAMS Accession No. ML013320017). TVA license amendment request TS 94-19, submitted on April 6, 1995, stated that the addition of this Note was being made to align with the requirements contained in NUREG-1431, LCO 3.8.1. On April 7, 1995, NUREG-1431, Rev. 1 was issued. The Note modifying LCO 3.8.1 ACTION B that required completion of Required Actions B.3.1 and B.3.2 (demonstration of DG OPERABILITY) was removed from NUREG-1431 in Revision 1. The requirement to complete the actions to demonstrate the OPERABLE DGs are not inoperable is an exception to ITS LCO 3.0.2 (CTS LCO 3.0.2). Completing the ACTIONS to verify the OPERABILITY of the remaining OPERABLE DGs is not required to restore compliance with the LCO. This change is acceptable because completion of the ACTIONS to evaluate the possibility of a DG common cause failure will be tracked as an item in the corrective action program. This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable. ACTION b is modified by Note * stating that no more than one DG may be made simultaneously inoperable on a pre-planned basis for maintenance, modifications, or surveillance testing. ITS SR 3.8.1.3 verifies each DG can be started, synchronized, loaded, and operated for at least 60 minutes. SR 3.8.1.3 is modified by Note 3 stating the Surveillance shall be conducted on only one DG at a time. This changes the CTS by deleting the restriction for not making more than one DG simultaneously inoperable on a pre-planned basis, with the exception of the performance of SR 3.8.1.3.

The purpose of CTS 3.8.1.1 ACTION b is to provide required actions for one or both DGs in a train inoperable. The purpose of Note * is to ensure pre-planned activities that may result in an inoperable DG (i.e., maintenance, modifications, or surveillance testing) are not performed on both DGs in a train at the same time. The proposed required actions do not include the restriction for limiting pre-planned activities to one DG at a time. The control of pre-planned maintenance, modifications, or surveillance testing is an issue for procedures and scheduling. This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L04 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.1.1 ACTION b requires, in part, with one or both DG(s) in a train inoperable to demonstrate the

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OPERABILITY of the remaining DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours. CTS 3.8.1.1 ACTION c requires, in part, with one offsite circuit and one DG inoperable to demonstrate the OPERABILITY of the remaining DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours. ITS 3.8.1 ACTION B requires with one or both DG(s) in a train inoperable to perform SR 3.8.1.2 for OPERABLE DGs within 24 hours. This changes the CTS by extending the time allowed to demonstrate the OPERABILITY of the OPERABLE DGs with one offsite circuit and one DG inoperable from 8 hours to 24 hours.

The purpose of the CTS 3.8.1.1 ACTIONS b and c is to ensure that the OPERABLE DGs are not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). CTS 3.0.1 states that upon failure to meet an LCO, the associated ACTION requirements shall be met. In the instance of one offsite circuit and one DG inoperable, the condition of one inoperable DG also exists. Therefore, in addition to meeting the requirements of CTS 3.8.1.1 ACTION c, the requirements of CTS 3.8.1.1 ACTION b are required to be met. However, this results in conflicting time requirements for performing CTS 4.8.1.1.2.a.4 on the OPERABLE DGs. A 24 hour Completion Time for performing DG common mode failure checks is consistent with the guidance provided in Generic Letter 84-15. This change is acceptable, since the vast majority of DG start tests demonstrate that the DG is OPERABLE. This change is designated as less restrictive, because additional time is allowed to demonstrate the OPERABILITY of the OPERABLE DGs for the condition of one offsite circuit and one DG inoperable under the ITS than under the CTS.

L05 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 ACTION d states, in part, with two offsite circuits inoperable demonstrate the OPERABILITY of the DGs by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the DGs are already operating. CTS 4.8.1.1.2.a.4 requires verification that each DG starts and achieves voltage and frequency within established ranges within 10 seconds. ITS 3.8.1 ACTION ~~E~~ D does not contain this requirement. This changes the CTS by deleting the requirement to test each DG when two offsite circuits are inoperable.

The purpose of the CTS 4.8.1.1.2.a.4 requirement in CTS 3.8.1.1 ACTION c is to ensure that the DGs are OPERABLE in the case of a loss of offsite power. Since the DGs are tested on monthly basis, there is no reason to suspect that they would not perform their intended safety function. Furthermore, the inoperability of two offsite circuits does not affect the OPERABILITY of the DGs, since the DGs are independent of the offsite circuits. Therefore, there is no need to subject the DGs to additional testing. This change is designated as less restrictive because the CTS requirement to perform testing on the DGs when both offsite circuits are inoperable is not being retained in the ITS.

L06 *(Category 8 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.1.b requires the demonstration of a manual and automatic transfer of the power supply to each 6.9 kV Unit Board from the normal to alternate once per 18 months. Note # specifies that the Surveillance shall not be performed on the associated unit's 6.9 kV Unit Boards in MODES 1 and 2. This test has been incorporated in ITS SR 3.8.1.8. ITS SR 3.8.1.8 includes a

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L19 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.g.4 requires demonstration of a DG hot restart and verification following energization that steady state voltage and frequency are maintained ≥ 6800 volts and ≤ 7260 volts and ≥ 58.8 Hz and ≤ 61.2 Hz during this test. ITS SR 3.8.1.15 requires demonstration of a DG hot restart and requires verification that within 10 seconds, voltage ≥ 6800 V and frequency ≥ 58.8 Hz, and steady state voltage ≥ 6800 V and ≤ 7260 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range.

The purpose of CTS 4.8.1.1.2.g.4 is to test the ability of each DG to restart on an accident signal under hot conditions and achieve the appropriate voltage and frequency. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range. This effectively allows the upper voltage and frequency limits to be exceeded during DG acceleration and stabilization. As stated above, the proposed Surveillance will require the establishment of the minimum frequency (58.8 Hz) and voltage (6800 V) within the given time frame. The accident analyses require that the DGs be capable of being loaded within 10 seconds. This can be accomplished at 58.8 Hz and 6800 V. While the upper level requirement regarding the frequency and voltage acceptance criterion is being eliminated, the requirement to establish a steady state voltage and frequency has been retained. 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. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L20 *(Category 3 – Relaxation of Completion Time)* CTS 3.0.5 allows a system, subsystem, train, component, or device to be considered OPERABLE with an inoperable emergency or normal power source provided its corresponding normal or emergency power source is OPERABLE and its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE. CTS 3.0.5 requires a unit shut down to start within two hours with these requirements not met. CTS 3.0.5 also provides an explicit time period to be in HOT STANDBY (MODE 3), HOT SHUTDOWN (MODE 4), and COLD SHUTDOWN (MODE 5). ITS 3.8.1 ACTION A (one associated unit offsite source inoperable) ~~requires~~ the

and ACTION C (one opposite unit offsite source inoperable) require

declaration of required feature(s) with no offsite power available inoperable when ~~its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action A.2~~ is 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION B (one ~~associated unit DG~~ or both DGs in a train inoperable) requires the declaration of required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable. The Completion Time allowed by the Required Action B.2 is 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION ~~E~~ D (two offsite circuits inoperable) requires the declaration of required feature(s) inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action ~~E~~ D.1 is 12 hours from discovery of Condition ~~E~~ D concurrent with inoperability of redundant required features. This changes the CTS by allowing more time to restore inoperable equipment and

Required Actions A.2 and C.2

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replaces the explicit times to be in MODE 3, MODE 4, and MODE 5 with a requirement to declare the affected features inoperable (and thus to take the ACTIONS required by the individual system LCO, including possible shut down of the unit).

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. This change allows more time to restore inoperable equipment when required AC Sources are inoperable concurrent with inoperabilities of redundant required features and deletes the explicit times to be in MODE 3, MODE 4, and MODE 5. By declaring the affected supported equipment inoperable, and as a result, taking the Technical Specifications ACTIONS of the affected supported equipment, unit operation is maintained within the bounds of the Technical Specifications and approved ACTIONS. Since the AC Sources support the OPERABILITY of the affected equipment, it is appropriate that the proper action, in this condition, would be to declare that affected supported equipment inoperable. CTS 3.0.5 is overly restrictive, in that if the associated supported equipment were inoperable for other reasons and the redundant equipment was also inoperable, a restoration time is sometimes provided, in other CTS sections. The 24 hour Completion Time when one associated unit offsite circuit is inoperable is acceptable because: a) the redundant counterpart to the inoperable required feature is still OPERABLE although single failure protection may have been lost; b) the capacity and capability of the remaining AC Sources is still available; c) a reasonable time for repairs is provided for restoration before the unit is subjected to transients associated with shut down; and d) the low probability of a DBA occurring during this period. The 12 hour Completion Time when two offsite circuits are inoperable is acceptable because Regulatory Guide 1.93 allows a Completion Time of 24 hours for two 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 ~~associated unit~~ 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 shut down. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC Sources, reasonable time for repairs, and low probability of a DBA occurring during this period. This change is designated as less restrictive because additional time is allowed to restore equipment to OPERABLE status and the change deletes the explicit times to reach MODE 3, MODE 4, and MODE 5.

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CTS

ACTIONS (continued)

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION a		A.3 Restore ~~[required]~~ offsite circuit to OPERABLE status.	72 hours	4
ACTIONS b, c, and e	B. ~~One [required] DG inoperable.~~ INSERT 1 ~~1A-A~~	B.1 Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit~~(s)~~.	1 hour AND Once per 8 hours thereafter	4 ~~5~~
		AND		
DOC L20		B.2 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND		
ACTION b		B.3.1 Determine OPERABLE DG~~(s)~~ ~~is~~ are not inoperable due to common cause failure.	~~[~~24~~]~~ hours	4 1
		OR		
ACTION b ACTION c		B.3.2 Perform SR 3.8.1.2 for OPERABLE DG~~(s)~~.	~~[~~24~~]~~ hours	4 1
		AND		
ACTION b		B.4 Restore ~~[required]~~ DG (s) to OPERABLE status.	~~72 hours~~ 7 days	4 1

INSERT 2 5

~~5~~ 4

INSERT 1

~~DOC L01~~

~~OR~~

~~DG 1B-B inoperable.~~

~~OR~~

~~DGs 1A-A and 2A-A inoperable.~~

One or more Train A DG(s) inoperable.

OR

One or more Train B DG(s) inoperable.

~~OR~~

~~DGs 1B-B and 2B-B inoperable.~~

5

INSERT 2

DOC L01

C. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable.	C.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	C.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to 6.9 kV Shutdown Board 2A-A or 2B-B concurrent with inoperability of redundant required feature(s)
	AND		
	C.3	~~Declare associated required feature(s) inoperable.~~ Restore offsite circuit to OPERABLE status.	7 days

DOC L20

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Insert Page 3.8.1-2a

5

INSERT 2 (Continued)

D. DG 2A-A or 2B-B inoperable.	D.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u>	
	D.2 Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	D.3.1 Determine OPERABLE DGs are not inoperable due to common cause failure.	24 hours
	<u>OR</u>	
	D.3.2 Perform SR 3.8.1.2 for OPERABLE DGs.	24 hours
	<u>AND</u>	
	D.4 Declare associated required feature(s) inoperable.	7 days

Insert Page 3.8.1-2b

CTS

AC Sources - Operating
3.8.1

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
ACTION d DOC L20	~~C~~ ~~E~~ D. Two ~~[required]~~ offsite circuits inoperable.	~~C~~ ~~E~~ D.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ ~~E~~ D concurrent with inoperability of redundant required features 5
		AND	
ACTION d		~~C~~ ~~E~~ D.2 Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours 5 4
ACTION c DOC A03 ACTION c	~~D~~ ~~F~~ E. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C. AND ~~One [required]~~ DG 1A-A or 1B-B inoperable.	-------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition ~~D~~ ~~F~~ E is entered with no AC power source to ~~any train~~ 6.9 kV Shutdown Board 1A-A or 1B-B. --	5
ACTION c		~~D~~ ~~F~~ E.1 Restore ~~[required]~~ offsite circuit to OPERABLE status.	12 hours 4
		OR	
~~INSERT 3~~		~~D~~ ~~F~~ E.2 Restore ~~[required]~~ DG to OPERABLE status.	12 hours 5 4
ACTION e INSERT 4	~~E~~ ~~J~~ F. One or more Train A ~~Two [required]~~ DG(s) inoperable.	~~E~~ ~~J~~ F.1 Restore one train of ~~[required]~~ DG(s) to OPERABLE status.	2 hours 5

5

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5 ~~**INSERT 3**~~

~~DOC L01~~	G. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable. AND DG 1A-A or 1B-B inoperable.	G.1 Declare required feature(s) on associated Unit 2 6.9 kV Shutdown Board inoperable.	7 days
~~DOC L01~~	H. One offsite circuit inoperable for reasons other than Condition C. AND DG 2A-A or 2B-B inoperable.	H.1 Declare required feature(s) on associated Unit 2 6.9 kV Shutdown Board inoperable.	7 days

5 ~~**INSERT 3 (continued)**~~

~~DOC L01~~ I. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B inoperable. AND DG 2A-A or 2B-B inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition I is entered with no AC power source to 6.9 kV Shutdown Board 2A-A or 2B-B. --- I.1 Restore offsite circuit to OPERABLE status. OR I.2 Restore DG to OPERABLE status.	 7 days 7 days

5 **INSERT 4**

ACTION e

AND

One or more Train B DG(s) inoperable.

Insert Page 3.8.1-3b

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~-----REVIEWER'S NOTE----- This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event.~~ ~~-----------------------------------~~ ~~F. [One [required] [automatic load sequencer] inoperable.~~	~~F.1 Restore [required] [automatic load sequencer] to OPERABLE status.~~	~~[12] hours]~~ 3
G ACTIONS a, b, c, d, e ~~G~~ ~~K~~. Required Action and associated Completion Time of Condition ~~A, B, C, D~~, ~~E, or~~ ~~[F]~~ ~~F, I,~~ ~~J~~ not met. A, B, C, D, E, or F DOC M01	~~G~~ ~~K~~ G.1 Be in MODE 3. AND ~~G~~ ~~K~~ G.2 Be in MODE 5.	6 hours 36 hours 3 5
INSERT 5 ~~H. Three or more [required] AC sources inoperable.~~	~~H.1 Enter LCO 3.0.3.~~	~~Immediately~~ 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.1.1 4.8.1.1.1.a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ 4 6 In accordance with the Surveillance Frequency Control Program ~~]~~ 6

5 **INSERT 5**

DOC A04 H ~~L~~. Two offsite circuits inoperable. AND One or more Train A DG(s) inoperable. OR One or more Train B DG(s) inoperable.	H ~~L~~.1 Enter LCO 3.0.3.	Immediately
DOC A04 I ~~M~~. One offsite circuit inoperable. AND One or more Train A DG(s) inoperable. AND One or more Train B DG(s) inoperable.	I ~~M~~.1 Enter LCO 3.0.3.	Immediately

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ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
ACTION a		A.3	Restore ~~[required]~~ offsite circuit to OPERABLE status.	72 hours	4
ACTIONS b, c, and e	B. ~~One [required] DG inoperable.~~ ~~2A-A~~ INSERT 1	B.1	Perform SR 3.8.1.1 for the ~~[required]~~ offsite circuit~~(s)~~.	1 hour AND Once per 8 hours thereafter	4 ~~5~~
		AND			
DOC L20		B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND			
ACTION b		B.3.1	Determine OPERABLE DG~~(s)~~ ~~is~~ are not inoperable due to common cause failure.	~~[~~24~~]~~ hours	4 1
		OR			
ACTION b ACTION c		B.3.2	Perform SR 3.8.1.2 for OPERABLE DG~~(s)~~.	~~[~~24~~]~~ hours	4 1
		AND			
ACTION b		B.4	Restore ~~[required]~~ DG(s) to OPERABLE status.	~~72 hours~~ 7 days	4 1

INSERT 2

5

~~5~~ 4 **INSERT 1**

~~DOC L01~~

~~OR~~

~~DG 2B-B inoperable.~~

~~OR~~

~~DGs 1A-A and 2A-A inoperable.~~

One or more Train A DG(s) inoperable.

OR

One or more Train B DG(s) inoperable.

~~OR~~

~~DGs 1B-B and 2B-B inoperable.~~

5

INSERT 2

DOC L01

DOC L20

VKG027

C. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable.	C.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND	
	C.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to 6.9 kV Shutdown Board 1A-A or 1B-B concurrent with inoperability of redundant required feature(s)
	AND	
	C.3 ~~Declare associated required feature(s) inoperable.~~ Restore offsite circuit to OPERABLE status.	7 days

Insert Page 3.8.1-2a

5

INSERT 2 (Continued)

D. DG 1A-A or 1B-B inoperable.	D.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	D.2	Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND		
	D.3.1	Determine OPERABLE DGs are not inoperable due to common cause failure.	24 hours
	OR		
	D.3.2	Perform SR 3.8.1.2 for OPERABLE DGs.	24 hours
	AND		
	D.4	Declare associated required feature(s) inoperable.	7 days

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
ACTION d DOC L20	~~C~~ ~~E~~ D. Two ~~[required]~~ offsite circuits inoperable.	~~C~~ ~~E~~ D.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition ~~C~~ ~~E~~ D concurrent with inoperability of redundant required features	5
		<u>AND</u>		
ACTION d		~~C~~ ~~E~~ D.2 Restore one ~~[required]~~ offsite circuit to OPERABLE status.	24 hours	5 4
ACTION c DOC A03	~~D~~ ~~F~~ E. One ~~[required]~~ offsite circuit inoperable for reasons other than Condition C. <u>AND</u> ~~One [required]~~ DG 2A-A or 2B-B inoperable.	--------------------NOTE-------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition ~~D~~ ~~F~~ E is entered with no AC power source to ~~any train~~ 6.9 kV Shutdown Board 2A-A or 2B-B. --		5 4
ACTION c		~~D~~ ~~F~~ E.1 Restore ~~[required]~~ offsite circuit to OPERABLE status.	12 hours	
		<u>OR</u>		
ACTION c ~~INSERT 3~~		~~D~~ ~~F~~ E.2 Restore ~~[required]~~ DG to OPERABLE status.	12 hours	5 4
ACTION e	~~E~~ ~~J~~ F. ~~Two [required]~~ One or more Train A DG~~s~~(s) inoperable. INSERT 4	~~E~~ ~~J~~ F.1 Restore one ~~[required]~~ train of DGs to OPERABLE status.	2 hours	5

5

5 ~~INSERT 3~~

~~DOC L01~~	G. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable. AND DG 2A-A or 2B-B inoperable.	G.1	Declare required feature(s) on associated Unit 1 6.9 kV Shutdown Board inoperable.	7 days
~~DOC L01~~	H. One offsite circuit inoperable for reasons other than Condition C. AND DG 1A-A or 1B-B inoperable.	H.1	Declare required feature(s) on associated Unit 1 6.9 kV Shutdown Board inoperable.	7 days

Insert Page 3.8.1-3a

~~5~~ **~~INSERT 3 (continued)~~**

~~DOC L01~~

I. One offsite circuit inoperable solely due to an offsite power source to 6.9 kV Shutdown Board 1A-A or 1B-B inoperable. AND DG 1A-A or 1B-B inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition I is entered with no AC power source to 6.9 kV Shutdown Board 1A-A or 1B-B. --- I.1 Restore offsite circuit to OPERABLE status. OR I.2 Restore DG to OPERABLE status.	 7 days 7 days

5 **INSERT 4**

ACTION e

AND

One or more Train B DG(s) inoperable.

~~Insert Page 3.8.1-3b~~

ACTIONS (continued)

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

ACTIONS a, b, c, d, e

A, B, C, D, E, or F

DOC M01

INSERT 5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.1.1 4.8.1.1.1.a SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each ~~[required]~~ offsite circuit.	~~[7 days~~ ~~OR~~ In accordance with the Surveillance Frequency Control Program ~~]~~ 4 6 6

5 **INSERT 5**

DOC A04 H ~~L~~. Two offsite circuits inoperable. AND One or more Train A DG(s) inoperable. OR One or more Train B DG(s) inoperable.	H ~~L~~.1 Enter LCO 3.0.3.	Immediately
DOC A04 I ~~M~~. One offsite circuit inoperable. AND One or more Train A DG(s) inoperable. AND One or more Train B DG(s) inoperable.	I ~~M~~.1 Enter LCO 3.0.3.	Immediately

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

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

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

3. ISTS LCO 3.8.1.c and ISTS 3.8.1 ACTION F have been deleted since SQN Units 1 and 2 do not use load sequencers. Each load or load block is sequenced with the use of its associated time delay relay. Each major ESF component has individual time delay relays that operate individual components, not all ESF components. Thus, if a single time delay relay fails, only the individual component and the DG could be affected. Subsequent Conditions and Required Actions have been renumbered, as applicable. ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), and ISTS SR 3.8.1.19 (ITS SR 3.8.1.18) have been revised to reflect the use of time delay relays.

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

5. ~~Changes were made to ISTS LCO 3.8.1 to ensure the appropriate AC power sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4 to satisfy the design requirements. This modification was necessary due to shared systems between Units 1 and 2. This is an exception that is intended to allow taking the ACTIONS associated with inoperable shared equipment in lieu of requiring the opposite unit AC sources to be restored to OPERABLE status within a specified Completion Time. This exception is acceptable since, with the opposite unit equipment inoperable and the associated ACTIONS entered, the opposite unit AC Sources provide no additional assurance of meeting the safety criteria of the given unit's AC power sources.~~ INSERT JFD 5

   SR Notes associated with ISTS SR 3.8.1.8 (ITS SR 3.8.1.8), ISTS SR 3.8.1.9 (ITS SR 3.8.1.9), ISTS SR 3.8.1.10 (ITS SR 3.8.1.10), ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.13 (ITS SR 3.8.1.13), ISTS SR 3.8.1.14 (ITS SR 3.8.1.14), ISTS SR 3.8.1.16 (ITS SR 3.8.1.16), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), and ISTS SR 3.8.1.19 (ITS SR 3.8.1.18) have been revised to allow performance of the affected SR on opposite unit shutdown board or DGs when the given unit is in a restricted MODE.

6. ISTS SR 3.8.1.1 (ITS SR 3.8.1.1), ISTS SR 3.8.1.2 (ITS SR 3.8.1.2), ISTS SR 3.8.1.3 (ITS SR 3.8.1.3), ISTS SR 3.8.1.4 (ITS SR 3.8.1.4), ISTS SR 3.8.1.5 (ITS SR 3.8.1.5), ISTS SR 3.8.1.6 (ITS SR 3.8.1.6), ISTS SR 3.8.1.7 (ITS SR 3.8.1.7), ISTS SR 3.8.1.8 (ITS SR 3.8.1.8), ISTS SR 3.8.1.9 (ITS SR 3.8.1.9), ISTS SR 3.8.1.10 (ITS SR 3.8.1.10), ISTS SR 3.8.1.11 (ITS SR 3.8.1.11), ISTS SR 3.8.1.12 (ITS SR 3.8.1.12), ISTS SR 3.8.1.13 (ITS SR 3.8.1.13), ISTS SR 3.8.1.14 (ITS SR 3.8.1.14), ISTS SR 3.8.1.15 (ITS SR 3.8.1.15), ISTS SR 3.8.1.16 (ITS SR 3.8.1.16), ISTS SR 3.8.1.18 (ITS SR 3.8.1.17), ISTS SR 3.8.1.19 (ITS SR 3.8.1.18), and ISTS SR 3.8.1.20 (ITS SR 3.8.1.19) provide two options for controlling the Frequencies of Surveillance Requirements. SQN is proposing to control the

INSERT JFD 5

Changes were made to the ISTS to reflect the interaction between an operating unit's AC power sources and those credited features needing AC power from the opposite unit's associated AC power sources. ITS 3.8.1 ACTION C has been added to address the condition when the offsite circuit is inoperable solely due to an inoperable power source to the opposite unit's 6.9 kV Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable), and requires, in part, restoration of the inoperable offsite circuit within 7 days. ISTS 3.8.1 ACTIONS A and D have been revised to address conditions when the offsite circuit is inoperable for reasons other than ITS 3.8.1 Condition C. ITS 3.8.1 ACTION A requires restoration of the inoperable offsite circuit in 72 hours. ITS 3.8.1 ACTION E requires restoration of an inoperable AC source in 12 hours. This change reflects a restoration Completion Time commensurate with the importance of maintaining the AC power source capable of supporting the affected shared systems. With the addition of ITS 3.8.1 ACTION C, subsequent ISTS ACTIONS have been renumbered.

VKG027

BASES

APPLICABILITY

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

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

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

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

ACTIONS

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

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable ~~,~~ for reasons other than Condition C, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~ ~~E~~ D, for two offsite circuits inoperable, is entered. 5 5

~~REVIEWER'S NOTE~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~

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. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. 1

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

B.1

To ensure a highly reliable power source remains with ~~an~~ INSERT 9 inoperable ~~DG~~, it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. 5

~~REVIEWER'S NOTE~~ 6

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

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG(s) is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG(s). 5

5

5 **INSERT 9**

~~DG 1A-A, DG 1B-B, DGs 1A-A and 2A-A, or DGs 1B-B and 2B-B~~

one or more Train A DGs, or one or more Train B DGs

BASES

ACTIONS (continued)

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

a. An inoperable DG exists and

b. A required feature on the other train ~~(Train A or Train B)~~ is inoperable. 5

If at any time during the existence of this Condition (one or more DGs in a train ~~DG~~ inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked. 5

Discovering one or more DGs in a train ~~required DG~~ inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is Acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 5 4

In this Condition, the remaining OPERABLE DGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1 5

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(s)~~, the other DG~~(s)~~ would be declared inoperable upon discovery and Condition F ~~E~~ of LCO 3.8.1 would be entered. INSERT 10 Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(s)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG. 5

5 **INSERT 10**

if one or more DG(s) in Train A and Train B are inoperable

ACTIONS (continued)

(s)

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

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

B.4

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

(s) AC Electrical Power

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The ~~72 hour~~ 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

INSERT 11 5

~~C~~ ~~E~~ D.1 and ~~C~~ ~~E~~ D.2 5

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

5

INSERT 11

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

Condition C is entered for an offsite circuit inoperable solely due to an inoperable power source to 6.9 kV Shutdown Board 2A-A or 2B-B. Required Action C.1 verifies the OPERABILITY of the remaining offsite circuit within an hour of the inoperability and every 8 hours thereafter. Since the Required Action only specifies "perform," a failure of the SR 3.8.1.1 acceptance criteria does not result in a Required Action not met.

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

a. 6.9 kV Shutdown Board 2A-A or 2B-B has no offsite power; and
b. A required feature on the other train is inoperable.

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

A Completion Time of 24 hours is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE offsite circuit and DGs are adequate to support these functions. The Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

Operation may continue in Condition C for a period of 7 days. With one offsite circuit inoperable, the reliability of the functions is degraded. The potential for the loss of offsite power to the redundant feature(s) is increased, with the attendant potential for a challenge to their safety functions.

The required offsite circuit must be returned to OPERABLE status within 7 days~~, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered~~. The 7 days Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

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5

INSERT 11 (Continued)

D.1, D.2, D.3 and D.4

To ensure a highly reliable power source remains with an inoperable DG to a Unit 2 6.9 kV Shutdown Board, it is necessary to verify the availability of the 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 a Required Action being not met. Required Action D.1 verifies the OPERABILITY of the required offsite sources within an hour of the inoperability and every 8 hours thereafter. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must be entered.

Required Action D.2 is intended to provide assurance that a loss of offsite power, during the period that an LCO 3.8.1.d DG is inoperable, does not result in a complete loss of the safety functions.

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

a. An inoperable DG to 6.9 kV Shutdown Board 2A-A or 2B-B exists; and
b. A redundant feature in the same system is inoperable.

If at any time during the existence of Condition D (one DG to 6.9 kV Shutdown Board 2A-A or 2B-B) a redundant feature in the same system subsequently becomes inoperable, this Completion Time begins to be tracked. The four hour Completion Time is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and DGs are adequate to support the functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

D.3.1 and D.3.2

Required Action D.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on another DG, the other DG would be declared inoperable, and upon discovery, Condition J of LCO 3.8.1 would be entered, if one or more DG(s) in Train A and Train B are inoperable. Otherwise, if the inoperability exists on the other DG in the same train, the other DG would be declared inoperable upon discovery, Condition B would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action D.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DGs, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

5

INSERT 11 (Continued)

~~Operation may continue in Condition D for a period of 7 days. With one Unit 2 DG inoperable, the reliability of the respective function is degraded. The potential for the loss of a DG to the redundant feature(s) is increased, with the attendant potential for a challenge to respective safety function.~~

~~The required DG must be returned to OPERABLE status within 7 days, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.~~

ACTIONS (continued)

The Completion Time for Required Action ~~C~~ E.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: D 5

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition ~~C~~ E (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. D 5

D According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~ E for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 5

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

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

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

With both ~~of the required~~ offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A or Condition C, as applicable. 5

E E F F

~~D~~.1 and ~~D~~.2 5

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition ~~D~~ F are modified by a Note to indicate that when Condition ~~D~~ F is entered with no AC source to ~~any train~~ 6.9 kV Shutdown Board 1A-A or 1B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition ~~D~~ F to provide requirements for the loss of one offsite circuit and one DG to 6.9 kV Shutdown Board 1A-A or 1B-B, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train. E 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~D~~ F for a period that should not exceed 12 hours. E 5

E F E

In Condition ~~D~~ F, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition ~~C~~ E (loss of both ~~required~~ offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. D 5

~~INSERT 12~~

F J

~~E~~.1 5

With ~~Train A and Train B DGs~~ one or more Train A DG(s) and one or more Train B DG(s) inoperable, there are ~~no remaining~~ insufficient standby AC sources available to power an entire load group. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that 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

5 ~~**INSERT 12**~~

G.1 and H.1

In Conditions G and H, individual redundancy is lost in the offsite electrical power system for one unit and the onsite AC electrical power system for the other unit. Since Conditions B and C are entered concurrent with entry into Condition G, and Conditions A and D are entered concurrent with entry into Condition H, the Required Actions of Conditions B and C (or Conditions A and D) provide the appropriate compensatory measures to ensure the onsite and offsite power sources are either restored to an OPERABLE status, or the associated required features are declared inoperable, thereby requiring entry into the appropriate Conditions associated with the associated feature's LCO. The Completion Times of Required Actions G.1 and H.1 are consistent with the Completion Times of Required Actions C.3 and D.4. If, while in Condition G or H, a redundant required feature is determined to be inoperable, the required feature(s) would be declared inoperable at the Completion Times specified in Conditions A, B, C, or D, as applicable.

I.1 and I.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 I are modified by a Note to indicate that when Condition I is entered with no AC source to 6.9 kV Shutdown Board 2A-A or 2B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition I to provide requirements for the loss of one offsite power source and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized 6.9 kV Shutdown Board.

In Condition I, individual redundancy is lost in the offsite electrical power system and the onsite AC electrical power system. Concurrent with entry into Condition I, entry into Condition C (inoperable offsite power source) and Condition D (inoperable DG) are required. The Required Actions of Conditions C and D ensure the remaining offsite circuit and DGs are OPERABLE and that required features with no offsite or onsite power sources are declared inoperable when its redundant required feature is inoperable within the Completion Times of Required Actions C.2 and D.2.

ACTIONS (continued)

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.

In this Condition,

~~According to Reference 6, with both DGs inoperable,~~ operation may continue for a period that should not exceed 2 hours. 5

, consistent with the guidance provided in Reference 6 5

~~[F.1~~ 5

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

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

G ~~K~~ ~~K~~ G

~~G~~.1 and ~~G~~.2 5

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

BASES

ACTIONS (continued)

H

I

L.1 and M.1

~~H.1~~

H and I

s

~~L and M~~

cannot be assured

Condition ~~H~~ correspond~~s~~ 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. 5

SURVEILLANCE REQUIREMENTS

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

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 6210 ~~[3740]~~ V is 90% of the nominal 6900 ~~4160~~ V output voltage. This value, which is specified in ANSI C84.1 (Ref. 10 ~~11~~), allows for voltage drop to the terminals of 6600 ~~4000~~ V motors whose minimum operating voltage is specified as 90% or 5940 ~~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 7260 ~~[4756]~~ V is equal to the maximum operating voltage specified for 6600 ~~4000~~ V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 6600 ~~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). 2 1 1 1 2 1 1

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. ~~[The 7 day Frequency is~~ 7

BASES

APPLICABILITY

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

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

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

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

ACTIONS

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

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable for reasons other than Condition C, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition ~~C~~ ~~E~~ D, for two offsite circuits inoperable, is entered. 5 5

~~-----REVIEWER'S NOTE-----~~ 6
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~
~~-----~~

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. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. 1

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

B.1

To ensure a highly reliable power source remains with ~~an~~ INSERT 9 inoperable ~~DG~~, it is necessary to verify the availability of the offsite circuits on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. 5

~~-----REVIEWER'S NOTE-----~~
~~The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.~~ 6

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG(s) is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG(s). 5 5

5 **INSERT 9**

~~DG 1A-A, DG 1B-B, DGs 1A-A and 2A-A, or DGs 1B-B and 2B-B~~

one or more Train A DGs, or one or more Train B DGs

BASES

ACTIONS (continued)

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

a. An inoperable DG exists and

b. A required feature on the other train ~~(Train A or Train B)~~ is inoperable. 5

If at any time during the existence of this Condition (one or more DGs in a train ~~DG~~ inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked. 5

Discovering one or more DGs in a train ~~required DG~~ inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is Acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. 5 4

In this Condition, the remaining OPERABLE DGs and offsite circuits are adequate to supply electrical power to the onsite Class 1E AC Electrical Power Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 1 5

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(s)~~, the other DG~~(s)~~ would be declared inoperable upon discovery and Condition F J ~~E~~ of LCO 3.8.1 would be entered. INSERT 10 Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(s)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG. 5

5 **INSERT 10**

if one or more DG(s) in Train A and Train B are inoperable

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BASES

ACTIONS (continued)

(s)

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

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

B.4

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

(s) AC Electrical Power

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The 7 day ~~72 hour~~ Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

INSERT 11 5

D D D

~~C~~ ~~E~~ D.1 and ~~C~~ ~~E~~ D.2 5

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

5 **INSERT 11**

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

Condition C is entered for an offsite circuit inoperable solely due to an inoperable power source to 6.9 kV Shutdown Board 1A-A or 1B-B. Required Action C.1 verifies the OPERABILITY of the remaining offsite circuit within an hour of the inoperability and every 8 hours thereafter. Since the Required Action only specifies "perform," a failure of the SR 3.8.1.1 acceptance criteria does not result in a Required Action not met.

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

a. 6.9 kV Shutdown Board 1A-A or 1B-B has no offsite power; and
b. A required feature on the other train is inoperable.

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

A Completion Time of 24 hours is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. The remaining OPERABLE offsite circuit and DGs are adequate to support these functions. The Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

Operation may continue in Condition C for a period of 7 days. With one offsite circuit inoperable, the reliability of the functions is degraded. The potential for the loss of offsite power to the redundant feature(s) is increased, with the attendant potential for a challenge to their safety functions.

The required offsite circuit must be returned to OPERABLE status within 7 days~~, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered~~. The 7 days Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

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INSERT 11 (Continued)

D.1, D.2, D.3, and D.4

To ensure a highly reliable power source remains with an inoperable DG to a Unit 1 6.9 kV Shutdown Board, it is necessary to verify the availability of the 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 a Required Action being not met. Required Action D.1 verifies the OPERABILITY of the required offsite sources within an hour of the inoperability and every 8 hours thereafter. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must be entered.

Required Action D.2 is intended to provide assurance that a loss of offsite power, during the period that an LCO 3.8.1.d DG is inoperable, does not result in a complete loss of the safety functions.

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

a. An inoperable DG to 6.9 kV Shutdown Board 1A-A or 1B-B exists; and
b. A redundant feature in the same system is inoperable.

If at any time during the existence of Condition D (one DG to 6.9 kV Shutdown Board 1A-A or 1B-B) a redundant feature in the same system subsequently becomes inoperable, this Completion Time begins to be tracked. The four hour Completion Time is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and DGs are adequate to support the functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining redundant feature(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period.

D.3.1 and D.3.2

Required Action D.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG(s), SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on another DG, the other DG would be declared inoperable, and upon discovery, Condition J of LCO 3.8.1 would be entered, if one or more DG(s) in Train A and Train B are inoperable. Otherwise, if the inoperability exists on the other DG in the same train, the other DG would be declared inoperable upon discovery, Condition B would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action D.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DGs, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

5

INSERT 11 (Continued)

~~Operation may continue in Condition D for a period of 7 days. With one Unit 2 DG inoperable, the reliability of the respective function is degraded. The potential for the loss of a DG to the redundant feature(s) is increased, with the attendant potential for a challenge to respective safety function.~~

~~The required DG must be returned to OPERABLE status within 7 days, or the support function for the associated required feature is considered inoperable. At that time, the required feature must be declared inoperable and the appropriate Conditions must be entered. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required feature(s), a reasonable time for repairs and the low probability of a DBA occurring during this period of time.~~

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BASES

ACTIONS (continued)

The Completion Time for Required Action ~~C~~ E.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: 5

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition ~~C~~ E (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. 5

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition ~~C~~ E for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources. 5

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

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

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

With both ~~of the required~~ offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

BASES

ACTIONS (continued)

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A or Condition C, as applicable. 5

E E

F ~~D~~.1 and F ~~D~~.2 5

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 F ~~D~~ are modified by a Note to indicate that when Condition F ~~D~~ is entered with no AC source to 6.9 kV Shutdown Board 2A-A or 2B-B ~~any train~~, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition F ~~D~~ to provide requirements for the loss of one offsite circuit and one DG to 6.9 kV Shutdown Board 2A-A or 2B-B, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train. E 5

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

E E

In Condition F ~~D~~, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition E ~~C~~ (loss of both ~~required~~ offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period. 5

D

~~INSERT 12~~

F

G ~~E~~.1

With one or more Train A DG(s) and one or more Train B DG(s) ~~Train A and Train B DGs~~ inoperable, there are insufficient ~~no remaining~~ standby AC sources available to power an entire load group. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that 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 5

5 **~~INSERT 12~~**

G.1 and H.1

In Conditions G and H, individual redundancy is lost in the offsite electrical power system for one unit and the onsite AC electrical power system for the other unit. Since Conditions B and C are entered concurrent with entry into Condition G, and Conditions A and D are entered concurrent with entry into Condition H, the Required Actions of Conditions B and C (or Conditions A and D) provide the appropriate compensatory measures to ensure the onsite and offsite power sources are either restored to an OPERABLE status, or the associated required features are declared inoperable, thereby requiring entry into the appropriate Conditions associated with the associated feature's LCO. The Completion Times of Required Actions G.1 and H.1 are consistent with the Completion Times of Required Actions C.3 and D.4. If, while in Condition G or H, a redundant required feature is determined to be inoperable, the required feature(s) would be declared inoperable at the Completion Times specified in Conditions A, B, C, or D, as applicable.

I.1 and I.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 I are modified by a Note to indicate that when Condition I is entered with no AC source to 6.9 kV Shutdown Board 1A-A or 1B-B, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition I to provide requirements for the loss of one offsite power source and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized 6.9 kV Shutdown Board.

In Condition I, individual redundancy is lost in the offsite electrical power system and the onsite AC electrical power system. Concurrent with entry into Condition I, entry into Condition C (inoperable offsite power source) and Condition D (inoperable DG) are required. The Required Actions of Conditions C and D ensure the remaining offsite circuit and DGs are OPERABLE and that required features with no offsite or onsite power sources are declared inoperable when its redundant required feature is inoperable within the Completion Times of Required Actions C.2 and D.2.

ACTIONS (continued)

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.

In this Condition,

~~According to Reference 6, with both DGs inoperable~~, operation may continue for a period that should not exceed 2 hours, 5

, consistent with the guidance provided in Reference 6 5

~~[F.1~~ 5

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

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

G ~~K~~ ~~K~~ G

~~G~~.1 and ~~G~~.2 5

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

BASES

ACTIONS (continued)

H

I

L.1 and M.1

~~H~~.1

H and I

s

L and M

Condition ~~H~~ correspond~~s~~ to a level of degradation in which ~~all~~ redundancy in the AC electrical power supplies cannot be assured ~~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. 5

SURVEILLANCE REQUIREMENTS

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

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 6210 ~~[3740]~~ V is 90% of the nominal 6900 ~~4160~~ V output voltage. This value, which is specified in ANSI C84.1 (Ref. 10 ~~11~~), allows for voltage drop to the terminals of 6600 ~~4000~~ V motors whose minimum operating voltage is specified as 90% or 5940 ~~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 7260 ~~[4756]~~ V is equal to the maximum operating voltage specified for 6600 ~~4000~~ V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 6600 ~~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). 2 1 1 1 2 1 1

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. ~~[The 7 day Frequency is~~ 7

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10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L01

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

CTS 3.8.1.1 ACTION a provides actions for one inoperable offsite circuit and allows 72 hours to restore the inoperable offsite circuit to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION b provides actions for one or both DGs in a train inoperable and allows 7 days to restore the inoperable DG(s) to OPERABLE status before requiring the unit to be shut down and cooled down.~~ CTS 3.8.1.1 ACTION c provides actions for one inoperable offsite circuit and one inoperable DG and allows 12 hours to restore at least one of the inoperable AC sources to OPERABLE status before requiring the unit to be shut down and cooled down. ~~CTS 3.8.1.1 ACTION d provides actions for two inoperable offsite circuits and allows 24 hours to restore at least one of the inoperable offsite circuits to OPERABLE status before requiring the unit to be shut down. CTS 3.8.1.1 ACTION e provides actions for one or two inoperable DGs in both trains and allows 2 hours to restore the inoperable DG(s) in one train to OPERABLE status before requiring the unit to be shut down and cooled down. CTS 3.8.1.1 ACTION f states LCO 3.0.4.b is not applicable to DGs. The ITS ACTIONS are modified by a Note stating LCO 3.0.4.b is not applicable to DGs.~~ ITS 3.8.1 ACTION A provides actions for one inoperable offsite circuit for reasons other than Condition C, and allows 72 hours to restore the inoperable offsite power source to OPERABLE status. ~~ITS 3.8.1 ACTION B provides actions for one inoperable associated unit's DG or both DGs in one train inoperable, and allows 7 days to restore the inoperable DG(s) to OPERABLE status.~~ ITS 3.8.1 ACTION C provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board, and ~~requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite circuit cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION D requires declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the DG cannot be restored to an OPERABLE status. ITS 3.8.1 ACTION E requires declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 12 hours. Otherwise, one offsite circuit is required to be restored to an OPERABLE status in 24 hours.~~ ITS 3.8.1 ACTION F provides actions for one associated unit's offsite circuit inoperable concurrent with one associated unit's DG inoperable, and allows 12 hours to restore one of the inoperable AC sources to OPERABLE status. ~~ITS ACTION G requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no offsite power available inoperable in 7 days. ITS ACTION H requires declaring the required feature(s) on the opposite unit's 6.9 kV Shutdown Board with no DG available inoperable in 7 days. ITS ACTION I provides actions for one offsite circuit inoperable solely due to an inoperable offsite power source to an opposite unit's 6.9 kV Shutdown Board concurrent with one opposite unit's DG inoperable, and allows 7 days~~

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E

requires: 1) performance of ITS SR 3.8.1.1 for the OPERABLE offsite circuit in 1 hour and once per 8 hours thereafter, 2) declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, and 3) restoration of the offsite circuit to OPERABLE status in 7 days.

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~~to restore one of the inoperable AC sources to OPERABLE status. In addition, a Note~~

For the condition of one offsite circuit inoperable solely due to an inoperable power source to an opposite unit's 6.9 kV Shutdown Board concurrent with an inoperable DG (similar to CTS 3.8.1.1 Action c), ITS 3.8.1 Conditions B and C would be entered concurrently. ITS 3.8.1 ACTIONS B and C require, in part, restoration of the inoperable AC sources (circuit and DG) to an OPERABLE status in 7 days. This changes the CTS by providing a new ITS 3.8.1 ACTION C to allow 7 days to restore an inoperable offsite circuit to an OPERABLE status, if the offsite circuit is inoperable solely due to an inoperable power source to an opposite unit's Shutdown Board (e.g., for Unit 1 an offsite power source to 6.9 kV Shutdown Board 2A-A or 2B-B is inoperable).

The purpose of the CTS 3.8.1.1 ACTIONS is to limit the time the unit can remain operating with different combinations of inoperable offsite circuits and DGs. The onsite Class 1E AC Electrical Distribution System supplies electrical power to two power trains shared between the two units. The core cooling and containment cooling system loads (e.g., Safety Injection (SI) pumps, Auxiliary Feedwater (AFW) pumps, Residual Heat Removal (RHR) pumps, Centrifugal Charging pumps, Containment Spray pumps, and Air Return System (ARS) fans) are unitized to the respective unit's 6.9 kV Shutdown Boards. However, some safety-related systems (e.g., Essential Raw Cooling Water (ERCW), Component Cooling (CCS), Emergency Gas Treatment (EGTS), Auxiliary Building Gas Treatment, (ABGTS), Control Room Emergency Ventilation (CREVs), and Control Room HVAC (CRACS)) are shared between the units. The AC sources for the shared loads are distributed across both unit's shutdown boards. Therefore, two qualified offsite circuits and four DGs capable of supplying the onsite Class 1E AC Electrical Distribution System are required to be OPERABLE. However, the impacts of an inoperable offsite power source or DG on an opposite unit's 6.9 kV Shutdown Board differ from the impacts of an inoperable offsite power source or DG on an associated unit's 6.9 kV Shutdown Board, due to the loads powered from the respective board.

For example, with SQN Unit 1 in MODES 1, 2, 3, and 4, 6.9 kV Shutdown Boards 1A-A and 1B-B, and the associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to the ESF systems powered from those boards. Additionally, 6.9 kV Shutdown Boards 2A-A and 2B-B and associated offsite power sources and DGs are required to be OPERABLE to provide electrical power to any required shared components required for Unit 1. If it is necessary to de-energize 6.9 kV Shutdown Board 2A-A or 2B-B, the redundant shared systems can be aligned prior to de-energizing the shutdown board to ensure no loss of safety function will occur. Upon removing the shutdown board from service, the applicable Conditions and Required Actions for the affected shared system LCOs will be entered and tracked and either the offsite power source or the DG is required to be restored to an OPERABLE status in 7 days.

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In the event of an unplanned loss of an offsite power source to an opposite unit's 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no offsite power available are inoperable when its redundant required feature is inoperable in 24 hours, ~~Otherwise, the affected required feature(s) are declared inoperable in 7 days, if the offsite power source cannot be restored to an OPERABLE status. Similarly, in~~ the event of an unplanned loss of a DG to an opposite unit 6.9 kV Shutdown Board, the proposed actions require declaration that the affected required feature(s) with no OPERABLE DG are inoperable when its redundant required feature is inoperable in 4 hours. ~~Otherwise, the affected required feature(s) are declared~~

, and restoration of the offsite circuit to OPERABLE status in 7 days

In

, and restoration of the DG to OPERABLE status in 7 days

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~~inoperable in 7 days, if the DG cannot be restored to an OPERABLE status~~. In both cases, the ACTIONS require performance of SR 3.8.1.1 for the required OPERABLE offsite circuit(s) within 1 hour and once per 8 hours thereafter.

The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These changes are acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation, while providing time to repair inoperable features. If the necessary repairs cannot be made within the established Completion Time, ITS 3.8.1 ACTION G is entered and the unit is required to be shut down to MODE 3 in 6 hours and MODE 5 in 36 hours. ~~the associated required features are declared inoperable and the applicable Conditions and Required Actions for the affected shared system LCOs are entered and tracked~~. This change is acceptable because the provided ACTIONS effect restoration of the opposite unit's offsite circuit ~~AC sources~~ commensurate with the importance of maintaining these offsite circuit ~~AC sources~~ capable of supporting the associated unit's required feature(s). This change is designated as less restrictive, because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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Tennessee Valley Authority (TVA) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. This change will not affect the probability of an accident, since the offsite AC circuits ~~and DGs~~ are not initiators of any accident sequence analyzed in the Updated Final Safety Analysis Report (UFSAR). Rather, offsite AC power sources ~~and DGs~~ support equipment used to mitigate accidents. The consequences of an analyzed accident will not be significantly increased since the minimum requirements for AC power sources will be maintained to ensure the availability of the required power to mitigate accidents assumed in the UFSAR. Operation in accordance with the proposed TS will ensure that sufficient onsite and offsite AC power sources are OPERABLE as required to support the unit's required features. Therefore, the mitigating functions supported by the onsite and offsite AC power sources will continue to provide the protection assumed by the accident analysis. The integrity of fission product barriers, plant configuration, and operating procedures as described in the UFSAR will not be affected by the proposed changes. Thus, the consequences of previously analyzed accidents will not increase by implementing these changes. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. This change will not physically alter the plant (no new or different type of equipment will be installed). The proposed changes will maintain the minimum requirements for AC power sources to ensure the availability of the equipment required to mitigate accidents assumed in the UFSAR. Therefore, operation of the facility in accordance with this proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change relaxes the Required Actions for the opposite unit's offsite AC power sources ~~and DGs~~. The opposite unit's offsite AC power sources ~~and DGs~~ are required to be OPERABLE to support the associated unit's required features. The margin of safety is not affected by this change because the minimum requirements for AC power sources will be maintained to ensure the availability of the required power to shutdown the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Therefore, the proposed changes do not involve a significant reduction in a margin of safety

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Licensee Response/NRC Response/NRC Question Closure

Id	**450**
NRC Question Number	**VKG027**
Select Application	**Licensee Response**
Attachment 1	
Attachment 2	
Response Statement	**Attachment 1 associated with the response to RAI VKG027 contained the same attachment as the response to RAI VKG026. A supplemental response has been provided for RAI VKG026 with a revised Attachment 1. There has been no change to the attachment as it pertains to the information provided in the response to RAI VKG027. However, as a result of the change associated with RAI VKG026, please refer to Attachment 1 for the supplemental response to RAI VKG026 to view all changes to the ITS submittal associated with these two RAIs.**
Response Date/Time	**5/10/2015 12:25 PM**
Closure Statement	
Question Closure Date	
Notification	**Scott Bowman Michelle Conner Vijay Goel Khadijah Hemphill Andrew Hon Lynn Mynatt Ray Schiele**
Added By	**Scott Bowman**
Date Added	**5/10/2015 11:22 AM**
Date Modified	
Modified By	

Licensee Response/NRC Response/NRC Question Closure

Id	**454**
NRC Question Number	**VKG027**
Select Application	**NRC Question Closure**
Attachment 1	
Attachment 2	
Response Statement	
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Question Closure Date	**5/14/2015**
Notification	**Michelle Conner** **Khadijah Hemphill** **Andrew Hon** **Lynn Mynatt** **Ray Schiele** **Roger Scott**
Added By	**Khadijah Hemphill**
Date Added	**5/14/2015 3:12 PM**
Date Modified	
Modified By	