VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

March 26, 2002

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No.: 01- 560E
CM/RAB R0
Docket Nos.: 50-338
50-339
License Nos.: NPF-4
NPF-7

Gentlemen:

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)**
**NORTH ANNA POWER STATION UNITS 1 AND 2**
**PROPOSED IMPROVED TECHNICAL SPECIFICATIONS**
**REQUEST FOR ADDITIONAL INFORMATION (RAI)**
**ISTS 3.7.7 BEYOND SCOPE ISSUE (TAC Nos. MB1439 and MB1440)**

This letter transmits a revision to the North Anna Power Station (NAPS) Units 1 and 2 proposed Improved Technical Specifications (ITS). The North Anna ITS license amendment request was submitted to the NRC in a December 11, 2000 letter (Serial No. 00-606). In one letter dated September 6, 2001, and in several telephone conferences over the past seven months, the NRC has requested additional information on the relocation of the Component Cooling (CC) specification to the Technical Requirements Manual (TRM) (TAC Nos. MB1439 and MB1440). Dominion responded to the NRC's RAIs during the telephone conferences and in letters dated November 19, 2001, January 25, 2002, February 18, 2002, March 7, 2002, and March 22, 2002 (Serial Nos. 01-560 through 01-560D).

In a telephone conference on March 21, 2002, the NRC informed Dominion that their review to support relocating the CC specification could not be completed in the time frame established by Dominion for ITS implementation. Therefore, Dominion decided to withdraw the request to relocate the CC system, add the current CC Technical Specification requirements for Modes 1 through 4, and pursue relocation of the CC system at a later date. With these revisions to the ITS submittal, the NRC stated that they would issue the ITS amendment the week of April 8, 2002.

This letter transmits the revised pages of the submittal, and the revised pages of the Discussions of Changes tables.

A001

If you have any further questions or require additional information, please contact us.

Very truly yours,

Leslie N. Hartz
Vice President - Nuclear Engineering

Attachment

Commitments made in this letter: None

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SN: 01-560E
Docket Nos.: 50-338/339
Subject: ITS RAI – ISTS 3.7.7

COMMONWEALTH OF VIRGINIA )
)
COUNTY OF HENRICO )

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Leslie N. Hartz, who is Vice President - Nuclear Engineering, of Virginia Electric and Power Company. She has affirmed before me that she is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of her knowledge and belief.

Acknowledged before me this 26th day of March, 2002.

My Commission Expires: March 31, 2002.

Notary Public

(SEAL)

**Attachment**

**Proposed Improved Technical Specifications**
**Beyond Scope Issue TAC Nos. MB1439 and MB1440**
**ITS 3.7.19, "Component Cooling"**

**Virginia Electric and Power Company**
**(Dominion)**

**North Anna Power Station Units 1 and 2**

**North Anna Improved Technical Specifications (ITS) Request for Additional Information**
**Component Cooling Water (CC) System**
**(TAC Nos. MB1439, MB1440)**

In a telephone conference on March 21, 2002, the NRC informed Dominion that their review to support relocating the Component Cooling Water (CC) System specification could not be completed in the time frame established by Dominion for Improved Technical Specification (ITS) implementation. Therefore, Dominion decided to withdraw the request to relocate the CC system, add the current Technical Specification (CTS) CC requirements for Modes 1 through 4 to the ITS, and pursue relocation of the CC system at a later date. In accordance with the NRC's recommendation, we have adopted the CTS requirements for CC with the minimum number of changes required to be consistent with the ITS.

The decision to not pursue relocation of the CC LCO at this time resulted in a number of changes to the ITS submittal:

- A new specification, ITS 3.7.19, "Component Cooling Water (CC) System," is added to the Section 3.7 of the ITS. Corresponding Bases are also added. This results in the addition of Justification for Deviations (JFDs) for the Improved Standard Technical Specifications (ISTS) and Bases, markup of Unit 1 and Unit 2 CTS 3.7.3.1, and associated Discussion of Changes (DOCs).

- The existing Unit 1 and Unit 2 CTS markup and DOC for the relocation of CTS 3.7.3.1 is deleted.

- The addition of CC to the ITS, a system shared by Units 1 and 2, requires its addition to the discussion of shared systems in the Bases of ITS 3.3.5, 3.8.1, 3.8.4, and 3.8.9. This affects the typed ITS Bases and the ISTS Bases markup. In addition, those JFDs and DOCs which discuss the shared systems are also affected: ITS 3.8.1, JFD 12 and ITS 3.8.1 DOCs A.2, A.9, A.19, and L.11, and ITS 3.8.9 DOC A.5.

# ADDITION OF SPECIFICATION 3.7.19

3.7 PLANT SYSTEMS

3.7.19 Component Cooling Water (CC) System

LCO 3.7.19 Three CC subsystems shall be OPERABLE.

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

ACTIONS

| CONDITION | REQUIRED ACTION | | COMPLETION TIME |
|---|---|---|---|
| A. One required CC subsystem inoperable. | A.1 | Restore required CC subsystem to OPERABLE status. | 7 days |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 | Be in MODE 3. | 6 hours |
| | AND | | |
| | B.2 | Be in MODE 5. | 30 hours |
| C. Two required CC subsystems inoperable. | C.1 | Be in MODE 4. | 12 hours |
| | AND | | |
| | C.2 | Initiate actions to be in MODE 5. | 13 hours |
| D. No CC water available to supply the residual heat removal heat exchangers. | D.1 | Be in MODE 4. | 12 hours |
| | AND | | |
| | D.2 | Implement an alternate means of decay heat removal. | Immediately |
| | AND | | |
| | D.3 | Initiate actions to be in MODE 5. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.19.1 | Verify each CC manual, power operated, and automatic valve in the flow path servicing the residual heat removal system, that is not locked, sealed, or otherwise secured in position, is in the correct position. | 31 days |

B 3.7 PLANT SYSTEMS

B 3.7.19 Component Cooling Water (CC) System

BASES

BACKGROUND

The CC System provides a heat sink for the removal of process and operating heat from components during normal operation. The CC System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Service Water System, and thus to the environment.

The CC System consists of four subsystems shared between units. Each subsystem consists of one pump and one heat exchanger. The design basis of the CC System is a fast cooldown of one unit while maintaining normal loads on the other unit. Three CC subsystems are required to accomplish this function. With only two CC subsystems available, a slow cooldown of one unit while maintaining normal loads on the other unit can be accomplished. The removal of normal operating heat loads (including common systems) requires two CC subsystems. During normal operation, the CC subsystems are cross connected between the units with two CC pumps and four CC heat exchangers in operation. Two pumps are normally running, with the other two in standby. A vented surge tank common to all four pumps ensures that sufficient net positive suction head is available.

The CC System serves no accident mitigation function and is not a system which functions to mitigate the failure of or presents a challenge to the integrity of a fission product barrier. The CC System is not designed to withstand a single failure. The CC System supports the Residual Heat Removal (RHR) System. The RHR system does not perform a design basis accident mitigation function.

Additional information on the design and operation of the system, along with a list of the components served, is presented in the UFSAR, Section 9.2.2 (Ref. 1). The principal function of the CC System is the removal of decay heat from the reactor via the Residual Heat Removal (RHR) System.

BASES

APPLICABLE SAFETY ANALYSES

The CC System serves no accident mitigation function. The CC System functions to cool the unit from RHR entry conditions ($T_{cold}$ < 350°F), to $T_{cold}$ < 140°F. The time required to cool from 350°F to 140°F is a function of the number of CC and RHR trains operating. The CC System is designed to reduce the temperature of the reactor coolant from 350°F to 140°F within 16 hours based on a service water temperature of 95°F and having two CC subsystems in service for the unit being cooled down.

The CC System has been identified in the probabilistic safety assessment as significant to public health and safety. The CC System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

LCO

Should the need arise to cooldown one unit quickly while the other unit is operating, three CC subsystems would be needed - two to support the quick cooldown of one unit and one to support the normal heat loads of the operating unit. To ensure this function can be performed a total of three CC subsystems shared with the other unit are required to be OPERABLE.

A CC subsystem is considered OPERABLE when:

a. The pump and common surge tank are OPERABLE; and

b. The associated piping, valves, heat exchanger, and instrumentation and controls required to perform the function are OPERABLE.

Each CC subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

APPLICABILITY

In MODES 1, 2, 3, and 4, the CC System is a normally operating system. In MODE 4 the CC System must be prepared to perform its RCS heat removal function, which is achieved by cooling the RHR heat exchanger.

In MODE 5 or 6, the OPERABILITY requirements of the CC System are determined by the systems it supports.

BASES

ACTIONS

A.1

If one required CC subsystem is inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CC subsystems are adequate to perform the heat removal function. The 7 day Completion Time is reasonable, based on the redundant capabilities afforded by the OPERABLE subsystems.

B.1 and B.2

If the required CC subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 30 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

C.1 and C.2

If two required CC subsystems are inoperable, action must be taken to cool the unit to MODE 4 within 12 hours. Action must be initiated to place the unit in MODE 5, where the LCO does not apply, within 13 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1 and D.2

With no CC water available to supply the residual heat removal heat exchangers, action must be taken to cool the unit to MODE 4 within 12 hours. Alternate means to cool the unit must be found and the unit placed in MODE 5, where the LCO does not apply. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.19.1

Verifying the correct alignment for manual, power operated, and automatic valves in the CC flow path to the RHR heat exchangers provides assurance that the proper flow paths exist for CC operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

REFERENCES

1. UFSAR, Section 9.2.2.

CTS

CCW System 3.7

3.7 PLANT SYSTEMS

3.7 Component Cooling Water (CCW) System

3.7.3.1 LCO 3.7. Two CCW trains shall be OPERABLE.

Three

subsystems

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

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| Action a A. One CCW train inoperable. (required, subsystem) | A.1 --------NOTE--------- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops – MODE 4." for residual heat removal loops made inoperable by CCW. --------- Restore CCW train to OPERABLE status. | 72 hours (7 days) |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Be in MODE 3. AND B.2 Be in MODE 5. | 6 hours 36 hours (30) |

Actions b & c Insert

R19

**INSERT**

| | | | | |
|---|---|---|---|---|
| C. | Two required CC subsystems inoperable. | C.1 | Be in MODE 4. | 12 hours |
| | | AND | | |
| | | C.2 | Initiate actions to be in MODE 5. | 13 hours |
| D. | No CC water available to supply the residual heat removal heat exchangers. | D.1 | Be in MODE 4. | 12 hours |
| | | AND | | |
| | | D.2 | Implement an alternate means of decay heat removal. | Immediately |
| | | AND | | |
| | | D.3 | Initiate actions to be in MODE 5. | Immediately |

R19

CTS

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.0.1 | ----------NOTE---------- Isolation of CCW flow to individual components does not render the CCW System inoperable. ---------- | |
| | Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position. | 31 days |
| SR 3.7.7.2 | Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. | [18] months |
| SR 3.7.7.3 | Verify each CCW pump starts automatically on an actual or simulated actuation signal. | [18] months |

servicing the residual heat removal system

4.7.3.1.a

## JUSTIFICATION FOR DEVIATIONS
## ITS 3.7.19, COMPONENT COOLING WATER SYSTEM

1. The CTS requires three of the four CC subsystems to be OPERABLE. The CC System at North Anna does not perform any accident mitigation functions. Its primary safety function is to provide cooling water to the Residual Heat Removal (RHR) heat exchangers and three CC subsystems are required to support a quick cooldown on one unit and normal operating heat loads on the other unit. The ISTS has been changed to reflect the CTS requirements.

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

3. The ISTS allows 72 hours to restore an inoperable CC train. The CTS allows 7 days to restore one inoperable CC subsystem. The CTS Completion Time is adopted for the ITS. The Completion Time is appropriate because the two remaining OPERABLE subsystems are capable of removing the normal operating heat loads of two units and can support a slow cooldown of one or both units.

4. Two new Conditions are added to the ITS, consistent with the CTS. Condition C is added for two CC subsystems inoperable, consistent with the CTS actions. With two required CC subsystems inoperable, normal operating heat loads cannot be removed for two operating units. Cooldown to MODE 4 is necessary to reduce the operating heat loads. In this condition, one or more RHR trains are inoperable. Therefore, it is necessary to initiate and continue actions to cooldown to a MODE in which the LCO is not applicable. Condition C allows 12 hours to reach MODE 4. Action must be initiated within an additional one hour to implement a method of moving the unit out of the MODES of applicability (i.e., to MODE 5) and Actions must continue until the Applicability is exited. Condition D is added for no CC water available to the RHR heat exchangers. With no CC water available to the RHR heat exchangers, the RHR trains are inoperable. Cooldown to MODE 4 is necessary to reduce the operating heat loads. In addition, it is necessary to implement an alternate decay heat removal mechanism and cooldown to MODE 5, in which the LCO is not applicable. These Conditions are consistent with the CTS. R19

5. The CC System does not contain any automatic valves that actuate to perform a function assumed in the safety analysis. Therefore, this Surveillance is not included in the ITS. This change is consistent with the CTS.

6. The CC pumps do not actuate to perform a function assumed in the safety analysis. Therefore, this Surveillance is not included in the ITS. This change is consistent with the CTS.

7. ISTS 3.7.7 has been renumbered to ITS 3.7.19. An ITS LCO on CC was added after development of the remainder of the ITS. The specification was placed at the end of Section 3.7 to avoid revision to the remainder of the 3.7 specifications.

8. ISTS 3.7.7 allows 36 hours to be in MODE 5 when one inoperable CCW train is not restored to OPERABLE status within the Completion Time. CTS 3.7.3.1 allows 30 hours to be in MODE 5 in the same condition. The CTS Completion Time of 30 hours is adopted in the ITS.

9. ISTS SR 3.7.7.1 requires verification of the CC flow path and contains a Note which states that isolation of CC flow to individual components does not render the CCW system inoperable. CTS Surveillance 4.7.3.1.a requires verification of the CC flow path to the RHR system. ITS SR 3.7.19.1 requires verification of the CC flow path to the RHR system and does not contain the ISTS Note. This is consistent with the CTS and the North Anna design. The primary function of CC is to supply cooling water to the RHR heat exchangers. The SR verifies that function. The ISTS Note would allow CC to be isolated from RHR and CC to still be considered OPERABLE. That is inconsistent with the North Anna design and CTS. R19

10. ISTS 3.7.7, Required Action A.1 is modified by a Note which directs entry into the applicable Conditions and Required Actions of LCO 3.4.6 for RHR loops made inoperable by CC. This Note does not appear in the ITS. ITS Condition D addresses CC unavailability to the RHR system. This is consistent with the CTS.

B 3.7 PLANT SYSTEMS

B 3.7.7 Component Cooling Water (CCW) System

BASES

BACKGROUND

The CCW System provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal operation, the CCW System also provides this function for various nonessential components, as well as the spent fuel storage pool. The CCW System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Service Water System, and thus to the environment.

Insert

A typical CCW System is arranged as two independent, full capacity cooling loops, and has isolatable nonsafety related components. Each safety related train includes a full capacity pump, surge tank, heat exchanger, piping, valves, and instrumentation. Each safety related train is powered from a separate bus. An open surge tank in the system provides pump trip protective functions to ensure that sufficient net positive suction head is available. The pump in each train is automatically started on receipt of a safety injection signal, and all nonessential components are isolated.

Additional information on the design and operation of the system, along with a list of the components served, is presented in the FSAR, Section [9.2.2] (Ref. 1). The principal safety related function of the CCW System is the removal of decay heat from the reactor via the Residual Heat Removal (RHR) System. This may be during a normal or post accident cooldown and shutdown.

APPLICABLE SAFETY ANALYSES

The design basis of the CCW System is for one CCW train to remove the post loss of coolant accident (LOCA) heat load from the containment sump during the recirculation phase, with a maximum CCW temperature of [120]°F (Ref. 2). The Emergency Core Cooling System (ECCS) LOCA and containment OPERABILITY LOCA each model the maximum and minimum performance of the CCW System, respectively. The normal temperature of the CCW is [80]°F, and, during unit cooldown to MODE 5 ($T_{cold}$ < [200]°F), a maximum temperature of 95°F is

(continued)



R19

Rev. 19

**INSERT**

The CC System consists of four subsystems shared between units. Each subsystem consists of one pump and one heat exchanger. The design basis of the CC System is a fast cooldown of one unit while maintaining normal loads on the other unit. Three CC subsystems are required to accomplish this function. With only two CC subsystems available, a slow cooldown of one unit while maintaining normal loads on the other unit can be accomplished. The removal of normal operating heat loads (including common systems) requires two CC subsystems. During normal operation, the CC subsystems are cross connected between the units with two CC pumps and four CC heat exchangers in operation. Two pumps are normally running, with the other two in standby. A vented surge tank common to all four pumps ensures that sufficient net positive suction head is available.

R19

The CC System serves no accident mitigation function and is not a system which functions to mitigate the failure of or presents a challenge to the integrity of a fission product barrier. The CC System is not designed to withstand a single failure. The CC System supports the Residual Heat Removal (RHR) System. The RHR system does not perform a design basis accident mitigation function.

BASES

APPLICABLE SAFETY ANALYSES (continued)

assumed. This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA, and provides a gradual reduction in the temperature of this fluid as it is supplied to the Reactor Coolant System (RCS) by the ECCS pumps.

The CCW System is designed to perform its function with a single failure of any active component, assuming a loss of offsite power.

The CC system serves no accident mitigation function.

The CCW System also functions to cool the unit from RHR entry conditions ($T_{cold}$ < [350]°F), to MODE 5 ($T_{cold}$ < [200]°F), during normal and post accident operations. The time required to cool from [350]°F to [200]°F is a function of the number of CCW and RHR trains operating. One CCW train is sufficient to remove decay heat during subsequent operations with $T_{cold}$ < [200]°F. This assumes a maximum service water temperature of [95]°F occurring simultaneously with the maximum heat loads on the system.

Insert 2: The CCW System satisfies Criterion [3] of the NRC Policy Statement.

Insert 1: (10 CFR 50.36(c)(2)(ii))

LCO

Insert 3: The CCW trains are independent of each other to the degree that each has separate controls and power supplies and the operation of one does not depend on the other. In the event of a DBA, one CCW train is required to provide the minimum heat removal capability assumed in the safety analysis for the systems to which it supplies cooling water. To ensure this requirement is met, two trains of CCW must be OPERABLE. At least one CCW train will operate assuming the worst case single active failure occurs coincident with a loss of offsite power.

A CCW train is considered OPERABLE when:

(subsystem)

a. The pump and associated (common) surge tank are OPERABLE; and

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

Insert 4: The isolation of CCW from other components or systems not required for safety may render those components or systems

(continued)

**INSERT 1**

The CC System is designed to reduce the temperature of the reactor coolant from 350°F to 140°F within 16 hours based on a service water temperature of 95°F and having two CC subsystems in service for the unit being cooled down.

**INSERT 2**

The CC System has been identified in the probabilistic safety assessment as significant to public health and safety.

**INSERT 3**

R19

Should the need arise to cooldown one unit quickly while the other unit is operating, three CC subsystems would be needed - two to support the quick cooldown of one unit and one to support the normal heat loads of the operating unit. To ensure this function can be performed a total of three CC subsystems shared with the other unit are required to be OPERABLE.

**INSERT 4**

Each CC subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and / or manually starting a standby pump.

BASES

LCO (continued)

inoperable but does not affect the OPERABILITY of the CCW System.

APPLICABILITY

In MODES 1, 2, 3, and 4, the CCW System is a normally operating system, which must be prepared to perform its post accident safety functions, primarily RCS heat removal, which is achieved by cooling the RHR heat exchanger.

In MODE 4 the CC system

function

In MODE 5 or 6, the OPERABILITY requirements of the CCW System are determined by the systems it supports.

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops—MODE 4," be entered if an inoperable CCW train results in an inoperable RHR loop. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.

required

subsystem

7 days

If one CCW train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE CCW train is adequate to perform the heat removal function. The 72 hour Completion Time is reasonable, based on the redundant capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this period.

Subsystems are

7 day

subsystems

B.1 and B.2

subsystem

required

If the CCW train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in 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 unit systems.

Insert

R19

(continued)

**INSERT**

C.1 and C.2

If two required CC subsystems are inoperable, action must be taken to cool the unit to MODE 4 within 12 hours. Action must be initiated to place the unit in MODE 5, where the LCO does not apply, within 13 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1 and D.2

With no CC water available to supply the residual heat removal heat exchangers, action must be taken to cool the unit to MODE 4 within 12 hours. Alternate means to cool the unit must be found and the unit placed in MODE 5, where the LCO does not apply. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

R19

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.1

This SR is modified by a Note indicating that the isolation of the CCW flow to individual components may render those components inoperable but does not affect the OPERABILITY of the CCW System.

Verifying the correct alignment for manual, power operated, and automatic valves in the CCW flow path to the RHR heat exchangers provides assurance that the proper flow paths exist for CCW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.7.2

This SR verifies proper automatic operation of the CCW valves on an actual or simulated actuation signal. The CCW System is a normally operating system that cannot be fully actuated as part of routine testing during normal operation. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

R19

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.7.3

This SR verifies proper automatic operation of the CCW pumps on an actual or simulated actuation signal. The CCW System is a normally operating system that cannot be fully actuated as part of routine testing during normal operation. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section [9.2.2].
2. FSAR, Section [6.2].

## JUSTIFICATION FOR DEVIATIONS
## ITS 3.7.19 BASES, COMPONENT COOLING WATER SYSTEM

1. The CC System at North Anna does not perform any accident mitigation functions. Its primary safety function is to provide cooling water to the Residual Heat Removal (RHR) heat exchangers. Three CC subsystems are required to support a quick cooldown on one unit and normal operating heat loads on the other unit. The ISTS Bases have been changed to reflect the plant-specific licensing and design basis.

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

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

4. The CC System at North Anna does not provide any accident mitigation functions. However, the plant-specific probabilistic safety analysis determined that the CC System is significant to public health and safety and the Specification has been retained in the ITS. The criteria of the NRC Final Policy Statement on Technical Specifications Improvements have been included in 10 CFR 50.36(c)(2)(ii). Therefore, references in the ISTS Bases to the NRC Final Policy Statement are revised in the ITS Bases to reference 10 CFR 50.36. The ISTS description that the Specification satisfies Criterion 3 has been changed to specify Criterion 4. R19

5. Changes are made to reflect those changes made to the ISTS. The following requirements are renumbered or revised, where applicable, to reflect the changes.

6. The Bases are modified to eliminate a statement that the CC system is OPERABLE if CC is isolated from other components. This statement is not applicable to the North Anna design nor is it consistent with the North Anna CTS. See ISTS JFD 9. The following statement is added to the Bases, " Each CC subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and / or manually starting a standby pump." This statement is taken from CTS 3.7.3.1, footnote *, and is consistent with the North Anna design.

UNIT 1

R19

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

**LIMITING CONDITION FOR OPERATION**

3.7.3.1 Three component cooling water subsystems (shared with Unit 2) shall be OPERABLE, with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

A.1

ITS 3.7.19

ITS

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PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

**SURVEILLANCE REQUIREMENTS**

4.7.3.1 Three component cooling water subsystems shall be demonstrated OPERABLE:

SR 3.7.19.1

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing in the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

L.1 R19

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

UNIT 2

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ITS 3.7.19

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ITS

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

LA.1 A.3

LCO 3.7.19 3.7.3.1 Three component cooling water subsystems ~~(shared with Unit 1)~~ shall be OPERABLE[*,**] with each subsystem consisting of:

LA.1

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

Appl. APPLICABILITY: ~~Either Unit in~~ MODES 1, 2, 3, or 4. A.2

ACTION:

ACTION A a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or ~~place~~ be both ~~units~~ in ~~HOT STANDBY~~ MODE 3 within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 5 within the following 24 hours. A.1 A.2

ACTION B b. With two required component cooling water subsystems inoperable, ~~place both units~~ be in ~~HOT SHUTDOWN~~ MODE 4 within the next 12 hours, and within the next hour, initiate actions to ~~place both units~~ be in ~~COLD SHUTDOWN~~ MODE 5 and continue until ~~COLD SHUTDOWN~~ is achieved. A.4 A.2

ACTION C c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, ~~place both units~~ be in ~~HOT SHUTDOWN~~ MODE 4 within the next 12 hours and remain in ~~HOT SHUTDOWN~~ MODE 4 until alternate means of decay heat removal can be implemented. Continue actions until ~~both~~ the units are in ~~COLD SHUTDOWN~~ MODE 5. A.1 A.2 A.4

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* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump. LA.1

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable. A.3

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(A.1)

ITS 3.7.19

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PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

**SURVEILLANCE REQUIREMENTS**

SR 3.7.19.1

4.7.3.1 Three component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing in the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

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ADMINISTRATIVE CHANGES

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

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

A.2 CTS 3.7.3.1 states that the CC loops are shared by the units. The Applicability applies when either unit is in MODES 1, 2, 3, or 4. Actions a, b, and c contain requirements on both units. ITS 3.7.19 is written to apply to a single unit. The change to the LCO is described in DOC LA.1. The change to the Applicability and the Actions are administrative changes necessary to be consistent with the change to the LCO. This presentation is also consistent with the presentation used in ITS LCO 3.7.8, Service Water System, which is a similar shared system.

This change is acceptable because both units are required to follow the Technical Specifications and CC is a shared system. If a required CC subsystem is inoperable, both units are affected. The CC applies to each unit that is in the Applicability, so if either unit is in MODE 1, 2, 3, or 4, the CC System is required to be OPERABLE. If one or more CC subsystems are inoperable, ACTIONS must be entered on both units if both are in the Applicable MODES. Therefore, eliminating the cross-unit references is an administrative change. This change is designated as administrative because it does not result in technical changes to the CTS. R19

A.3 CTS 3.7.3.1 includes footnote "**" which allows a temporary exception to the CC LCO for service water system upgrades. ITS 3.7.19 does not contain that temporary exception.

This change is acceptable because the temporary exception was only allowed to be used two times (once per SW loop). The temporary exception has been used and is no longer valid. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.7.3.1 Actions refer to CTS MODE names, "Hot Standby," "Hot Shutdown," and "Cold Shutdown." ITS 3.7.19 uses the corresponding ITS MODE numbers, "MODE 3," "MODE 4," and "MODE 5." This changes the CTS by utilizing MODE numbers instead of MODE names. Any technical changes associated with the differences in CTS MODES and ITS MODES are discussed in Chapter 1.0.

This change is acceptable because the ITS uses MODE numbers instead of MODE names. Any technical changes associated with the differences in CTS MODES and

ITS MODES are discussed in Chapter 1.0. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.7.3.1 states that three CC subsystems, shared with the other unit, shall be OPERABLE and contains a description of what constitutes an OPERABLE subsystem. Footnote "*" provides further details on what constitutes an operable subsystem. ITS 3.7.19 requires three CC subsystems to be OPERABLE. This changes CTS by moving the details of what constitutes an OPERABLE subsystem, including that the subsystems are shared between the units, to the Bases. R19

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 have three OPERABLE CC subsystems and this requirement is sufficient to ensure the CC System can perform its required functions. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.3.1.b requires each component cooling water pump to be tested in accordance with Specification 4.0.5. ITS 3.7.19 does not contain this Surveillance. This changes the CTS by deleting a Surveillance Requirement.

The purpose of CTS Specification 4.0.5 is to require inservice testing in accordance with 10 CFR 50.55a. The purpose of inservice testing of the CC pumps is to detect gross degradation caused by impeller structural damage or other hydraulic component problems. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. This change is acceptable because it is not necessary to perform inservice testing of the CC pumps to determine if the pumps are OPERABLE as the pumps are run routinely. Significant degradation of the CC pumps would be indicated by the CC System flow and temperature instrumentation in the Control Room. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

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# ELIMINATION OF RELOCATION OF CTS 3.7.3.1

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CTS 3.7.3.1

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PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

**LIMITING CONDITION FOR OPERATION**

3.7.3.1 Three component cooling water subsystems (shared with Unit 2) shall be OPERABLE*, ** with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

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* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

CTS 3.7.3.1

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PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

**SURVEILLANCE REQUIREMENTS**

4.7.3.1 Three component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing in the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

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UNIT 2

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CTS 3.7.3.1

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PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

3.7.3.1 Three component cooling water subsystems (shared with Unit 1) shall be OPERABLE*, ** with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

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* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

CTS 3.7.3.1

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PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

**SURVEILLANCE REQUIREMENTS**

4.7.3.1 Three component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing in the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

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RELOCATED SPECIFICATIONS

R.1 CTS 3.7.3.1 states that three component cooling (CC) water system loops shall be OPERABLE. It is applicable when either unit is in MODES 1, 2, 3, or 4. The primary function of the CC System is to provide cooling water to the Residual Heat Removal (RHR) heat exchangers. Unlike other Westinghouse plants, the RHR at North Anna Power Station (NAPS) does not share components with the Emergency Core Cooling System (ECCS), and thus does not play a role in DBA mitigation. At NAPS, this post-accident heat removal function is provided primarily by the Recirculation Spray System and the Low Head Safety Injection pumps. For this reason, CC is not required for DBA mitigation, and, like RHR, does not meet Criterion 3 of 10 CFR 50.36(c)(2)(ii) for retention in the Technical Specifications for MODES 1, 2, 3, and 4. Other plants use CC for DBA mitigation functions other than ECCS, such as containment cooling, but the CC system at NAPS does not. This makes the CC System at NAPS different from the CC System described in the ISTS, and retaining the CC requirement for supporting RHR or any other components not assumed in DBA analysis is inappropriate. This LCO does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual.

This change is acceptable because CTS 3.7.3.1 does not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

R19

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. The CC System is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The CC System does not meet criterion 1.

2. The CC System is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or Transient Analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The CC System does not meet criterion 2.

3. The CC System is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The CC System in MODES 1, 2, 3, or 4 was evaluated in WCAP-11618 for the generic Westinghouse plant. WCAP-11618 assumed that the CC System served as a support system to various systems which are assumed to function to mitigate various DBAs. However, at NAPS, the CC System is not assumed to function to mitigate any DBAs. The CC System does not meet criterion 3.

4. The CC System is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to

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public health and safety. An evaluation performed by the Company determined that the CC System in MODES 1, 2, 3, or 4 is a non-significant risk contributor to core damage frequency and offsite releases. The CC System is not important for any scenarios modeled for MODES 1, 2, 3, or 4 in the NAPS site-specific PRAs. The CC System in MODES 1, 2, 3, or 4 does not meet criterion 4.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Component Cooling Subsystem - Operating LCO and associated Applicability, Actions, and Surveillances may be relocated out of the Technical Specifications. The Component Cooling Subsystem - Operating specification will be relocated to the Technical Requirements Manual (TRM). Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as relocation because the LCO did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

R19

# REVISION TO
# ITS 3.3.5, 3.8.1, 3.8.4, AND 3.8.9
# TO INCORPORATE REFERENCES
# TO NEW SHARED SYSTEM, CC

B 3.3 INSTRUMENTATION

B 3.3.5 Loss of Power (LOP) Emergency Diesel Generator (EDG) Start Instrumentation

BASES

BACKGROUND

The EDGs provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe unit operation. Undervoltage protection will generate an LOP start if a loss of voltage or degraded voltage condition occurs on the emergency buses. There are two required LOP start signals for each 4.16 kV emergency bus.

Undervoltage relays are provided on each 4160 V Class 1E bus for detecting a loss of bus voltage or a sustained degraded voltage condition. The relays are combined in a two-out-of-three logic to generate a LOP signal. A loss of voltage start of the EDG is initiated when the voltage is less than 74% of rated voltage and lasts for approximately 2 seconds. A degraded voltage start of the EDG is produced when the voltage is less than 90% of rated voltage sustained for approximately 56 seconds. The time delay for the degraded voltage start signal is reduced to approximately 7.5 seconds with the presence of a Safety Injection signal for the H and J bus on this unit. RAI 3.3.5-01 R6

One 4160 VAC bus from the other unit is needed to support operation of each required Service Water (SW) pump, Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) fan, Auxiliary Building central exhaust fan, and Component Cooling Water (CC) pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems. R19

The Allowable Value in conjunction with the trip setpoint and LCO establishes the threshold for Engineered Safety Features Actuation System (ESFAS) action to prevent exceeding acceptable limits such that the consequences of Design Basis Accidents (DBAs) will be acceptable. The Allowable Value is considered a limiting value such that a channel is OPERABLE if the setpoint is found not to exceed the Allowable Value during the CHANNEL CALIBRATION. Note that, although a channel is OPERABLE under these circumstances, the setpoint must be left adjusted to within the established calibration tolerance band of the setpoint

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

EDG loading, which does not explicitly account for each individual component of loss of power detection and subsequent actions.

The required channels of LOP EDG start instrumentation, in conjunction with the ESF systems powered from the EDGs, provide unit protection in the event of any of the analyzed accidents discussed in Reference 5, in which a loss of offsite power is assumed. RAI 3.3.5-05 R6

The delay times assumed in the safety analysis for the ESF equipment include the 10 second EDG start delay, and the appropriate sequencing delay, if applicable. The response times for ESFAS actuated equipment in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," include the appropriate EDG loading and sequencing delay if applicable. RAI 3.3.5-01 R6

The LOP EDG start instrumentation channels satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO for LOP EDG start instrumentation requires that three channels per bus of both the loss of voltage and degraded voltage Functions shall be OPERABLE in MODES 1, 2, 3, and 4 when the LOP EDG start instrumentation supports safety systems associated with the ESFAS. This is associated with the requirement of LCO 3.3.5.a for this unit's H and J buses. LCO 3.3.5.b specifies that for a required H and/or J bus on the other unit that is needed to support a required shared component for this unit, the LOP EDG start instrumentation for the required bus must be OPERABLE. The other unit's required H and/or J bus are required to be OPERABLE to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust, and CC functions needed for this unit. These Functions share components, pumps, or fans, which are electrically powered from both units. A channel is OPERABLE with a trip setpoint value outside its calibration tolerance band provided the trip setpoint "as-found" value does not exceed its associated Allowable Value and provided the trip setpoint "as-left" value is adjusted to a value within the "as-left" calibration tolerance band of the trip setpoint. A trip setpoint may be set more conservative than the trip setpoint specified in the TRM (Ref. 2) as necessary in response to unit conditions. In MODES 5 or 6, the three channels must be OPERABLE whenever the associated EDG is required to be OPERABLE to ensure that the automatic start of

RAI 3.3.5-01 R6
RAI 3.3.5-01 R6
RAI 3.3.5-01 R16 R19
RAI 3.8.2-5 R16

(continued)

**INSERT 1**

Undervoltage relays are provided on each 4160 V Class 1E bus for detecting a loss of bus voltage or a sustained degraded voltage condition. The relays are combined in a two-out-of-three logic to generate a LOP signal. A loss of voltage start of the EDG is initiated when the voltage is less than 74% of rated voltage and lasts for approximately 2 seconds. A degraded voltage start of the EDG is produced when the voltage is less than 90% of rated voltage sustained for approximately 56 seconds. The time delay for the degraded voltage start signal is reduced to approximately 7.5 seconds with the presence of a Safety Injection signal for the H and J bus on this unit.

RAI 3.3.5-1 R6

One 4160 VAC bus from the other unit is needed to support operation of each required Service Water (SW) pump, Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) fan, Auxiliary Building central exhaust fan, and Component Cooling Water (CC) pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust systems and CC are shared systems.

R19

**INSERT 2**

The Allowable Value in conjunction with the trip setpoint and LCO establishes the threshold for Engineered Safety Features Actuation System (ESFAS) action to prevent exceeding acceptable limits such that the consequences of Design Basis Accidents (DBAs) will be acceptable. The Allowable Value is considered a limiting value such that a channel is OPERABLE if the setpoint is found not to exceed the Allowable Value during the CHANNEL CALIBRATION. Note that, although a channel is OPERABLE under these circumstances, the setpoint must be left adjusted to within the established calibration tolerance band of the setpoint in accordance with uncertainty assumptions stated in the referenced setpoint methodology, (as-left-criteria) and confirmed to be operating with the statistical allowances of the uncertainty terms assigned.

RAI 3.8.2-5 R16

**INSERT**

This is associated with the requirement of LCO 3.3.5.a for this unit's H and J buses. LCO 3.3.5.b specifies that for a required H and/or J bus on the other unit that is needed to support a required shared component for this unit, the LOP EDG start instrumentation for the required bus must be OPERABLE. The other unit's required H and/or J bus are required to be OPERABLE to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust and CC functions needed for this unit. These functions share components, pumps or fans, which are electrically powered from both units.

RAI 3.3.5-1 R6

RAI 3.3.5-1 R6

A channel is OPERABLE with a trip setpoint value outside its calibration tolerance band provided the trip setpoint "as-found" value does not exceed its associated Allowable Value and provided the trip setpoint "as-left" value is adjusted to a value within the "as-left" calibration tolerance band of the trip setpoint. A trip setpoint may be set more conservative than the trip setpoint specified in the TRM (Ref. 2) as necessary in response to unit conditions.

RAI 3.8.2-5 R16

# B 3.8 ELECTRICAL POWER SYSTEMS

## B 3.8.1 AC Sources–Operating

BASES

BACKGROUND

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

Additionally, the unit's electrical sources must include electrical sources from the other unit that are required to support the Service Water (SW), Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Emergency Ventilation System (EVS), Auxiliary Building central exhaust system, or Component Cooling Water (CC) safety functions. This requirement could include both of the other unit's offsite circuits and EDGs for this unit. R19

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

Offsite power is supplied to the switchyard from the transmission network by several different transmission lines. From the switchyard, two electrically and physically separated circuits provide AC power, through reserve station service transformers (RSSTs), to the 4.16 kV ESF buses. A detailed description of the offsite power network and the circuits to the Class 1E ESF buses is found in the UFSAR, Chapter 8 (Ref. 2).

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

Certain required unit loads are energized in a predetermined sequence in order to prevent overloading the transformer supplying offsite power to the onsite Class 1E Distribution

(continued)

BASES

LCO (continued)

Offsite circuits consist of 34.5 kV buses 3, 4, and 5 supplying the Reserve Station Service Transformer(s) (RSST) which feed the transfer buses. The D, E, and F transfer buses supply the onsite electrical power to the four emergency buses for the two units. Unit 1 emergency bus H is fed through the F transfer bus from the C RSST. Unit 1 emergency bus J is fed through the D transfer bus from the A RSST. Unit 1 station service bus 1B can be an alternate feed for Unit 1 H emergency bus, while Unit 1 J bus may be fed from Unit 2 station service bus 2B. Unit 2 emergency bus H is fed through the E transfer bus from the B RSST. Unit 2 emergency bus J is fed through the F transfer bus from the C RSST. The RSSTs can be fed by any 34.5 kV bus (3, 4, or 5) provided RSSTs A and B are fed from a different 34.5 kV bus than RSST C. Specific breaker nomenclature for individual circuits may be obtained from drawings in the UFSAR, Chapter 8 (Ref. 2). R11 R11 R11

Each EDG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage or degraded voltage. This will be accomplished within 10 seconds. Each EDG must also be capable of accepting required loads within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as EDG in standby with the engine hot and EDG in standby with the engine at ambient conditions. Additional EDG capabilities must be demonstrated to meet required Surveillances.

Proper sequencing of loads is a required function for EDG OPERABILITY.

The other unit's offsite circuit(s) and EDG(s) are required to be OPERABLE to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust, and CC functions needed for this unit. These functions share components, pump or fans, which are electrically powered from both units. R19

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

For the offsite AC sources, separation and independence are to the extent practical.

BASES

ACTIONS

C.1 and C.2 (continued)

is exited and AOT is restricted by the Completion Time tracked in Condition B. If the AAC DG or one or more of the other unit's EDG(s) becomes inoperable at sometime after the initial EDG inoperability, Condition C requires the restoration of the EDG or the AAC DG and the other unit's EDG(s) within 72 hours or Condition L is required to be entered. RAI 3.8.1-22 R3

The 72 hour Completion Time is considered reasonable and takes into account the assumption in the probabilistic safety analysis (PSA) for potential core damage frequency.

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

Condition D is modified by a Note indicating that separate Condition entry is allowed for each offsite circuit on the other unit that provides electrical power to required shared components.

To provide the necessary electrical power for the SW, MCR/ESGR EVS, Auxiliary Building central exhaust, and CC functions for a unit, AC electrical sources of both units may be required to be OPERABLE. Action D is entered for one or more inoperable offsite circuit(s) on the other unit that is necessary to support required shared components. These shared components are the SW pump(s), MCR/ESGR EVS fan(s), Auxiliary Building central exhaust fan(s), and CC pumps. Required Action D.1 verifies the OPERABILITY of the remaining required offsite sources 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. R19 R19

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. The required shared component has no offsite power; and

b. A required shared component(s) in the same system is inoperable. RAI 3.8.1-35 R3

(continued)

BASES

ACTIONS

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

If at any time during the existence of Condition D (one offsite circuit inoperable on the other unit needed to supply electrical power for a required shared component) another required shared component in the same system subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power on the other unit that supports a required shared component and an additional required shared component in the same system inoperable, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and EDGs that power the required shared components are adequate to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC functions. The 24 hour Completion Time takes into account the component OPERABILITY of the remaining shared component(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period. R19

Operation may continue in Condition D for a period of 72 hours. With one offsite circuit inoperable on the other unit supplying electrical power to a required shared component, the reliability of the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC functions are degraded. The potential for the loss of offsite power to the other required shared components is increased, with the attendant potential for a challenge to SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC functions. R19 R19

The required offsite circuit must be returned to OPERABLE status within 72 hours, or the support function for the associated shared component is considered inoperable. At that time, the required shared component must be declared inoperable and the appropriate Conditions of the LCO 3.7.8, "Service Water System," LCO 3.7.10, "MCR/ESGR Emergency Ventilation System," LCO 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System," and LCO 3.7.19, "Component Cooling Water (CC) System," must be entered. The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources R19

(continued)

BASES

ACTIONS

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

providing electrical power to the required shared components, a reasonable time for repairs and the low probability of a DBA occurring during this period of time.

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

To ensure a highly reliable power source remains with an inoperable EDG, 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 E.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 E.2 is intended to provide assurance that a loss of offsite power, during the period that an EDG is inoperable, does not result in a complete loss of the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, or CC functions. R19

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

a. The required shared component with an inoperable EDG; and

b. A required shared component(s) in the same system is inoperable. RAI 3.8.1-35 R3

If at any time during the existence of Condition E (one EDG inoperable on the other unit needed to supply electrical power for a required shared component) another required shared component subsequently becomes inoperable, this Completion Time begins to be tracked.

(continued)

BASES

ACTIONS

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

Discovering an EDG on the other unit that supports a required shared component and an additional required shared component inoperable, results in starting the Completion Times for the Required Action. Four 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 circuits and EDGs that power the required shared components are adequate to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, or CC functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining shared components, a reasonable time for repairs, and the low probability of a DBA occurring during this period. R19

Operation may continue in Condition E for a period of 14 days. With one EDG inoperable on the other unit supplying electrical power to a required shared component, the reliability of the respective Function is degraded. The potential for the loss of EDGs to the other required shared components is increased, with the attendant potential for a challenge to respective Function.

The required EDG must be returned to OPERABLE status within 14 days, or the support function for the associated shared component is considered inoperable. At that time, the required shared component must be declared inoperable and the appropriate Conditions of the LCOs 3.7.8, 3.7.10, 3.7.12, and 3.7.19 must be entered. The 14 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required shared components, a reasonable time for repairs and the low probability of a DBA occurring during this period of time. R19

F.1 and F.2

To ensure a highly reliable electrical power source remains available when one EDG is inoperable that is required to support a required shared component on the other unit, Condition F is established to monitor the OPERABILITY of the AAC DG and the LCO 3.8.1.b EDGs. Condition F is entered any time an EDG that is required to support a required shared component that receives its electrical power from the other unit becomes inoperable and the Required Actions and

(continued)

BASES

ACTIONS

F.1 and F.2 (continued)

Completion Times are followed. Concurrently, if the AAC DG or one or more of this unit's EDG(s) is inoperable, or become inoperable, in addition to the Required Actions of Condition E, Required Actions F.1 and F.2 limit the time the EDG may be out of service to 72 hours. If the AAC DG or this unit's EDG(s) is inoperable when the other unit's EDG becomes inoperable, the AOT is limited to 72 hours, unless the AAC DG and this unit's EDG(s) are returned to OPERABLE status. If during the 72 hour Completion Time of F.1 or F.2, the AAC DG and this unit's EDG are return to OPERABLE status, Condition F is exited and AOT is restricted by the Completion Time tracked in Condition E. If the AAC DG or one or more of this unit's EDG(s) becomes inoperable at sometime after the initial EDG inoperability, Condition F requires the restoration of the AAC DG and this unit's EDG(s) within 72 hours or the supported shared component must be declared inoperable and LCOs 3.7.8, 3.7.10, 3.7.12, and 3.7.19 provides the appropriate restrictions. |R19

The 72 hour Completion Time is considered reasonable and takes into account the assumption in the probabilistic safety analysis (PSA) for potential core damage frequency.

G.1 and G.2

Required Action G.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.

The Completion Time for Required Action G.1 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows

(continued)

BASES

ACTIONS (continued)

I.1

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

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

J.1

With two LCO 3.8.1.c required EDGs inoperable, as many as two required shared and potentially required components have no remaining standby AC sources. Thus, with an assumed loss of offsite power condition, the required shared components powered from the other unit would be significantly degraded. Therefore, the required shared component would immediately be declared inoperable and LCOs 3.7.8, 3.7.10, 3.7.12, and 3.7.19 would provide the appropriate restrictions. R3 R19

K.1 and K.2

Condition K is modified by a Note indicating that separate Condition entry is allowed for each inoperable sequencing timing relay.

Condition K is entered any time a required sequencing timing relay (STR) becomes inoperable. Required Action K.1 directs the entry into the Required Actions and Completion Times associated for the individual component served by the inoperable relay. The instrumentation signals that provide the actuation are governed by LCO 3.3.2, "Engineered Safety Features Actuation System Instrumentation" for safety

(continued)

BASES

BACKGROUND (continued)

Each 125 VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from the other subsystem to ensure that a single failure in one subsystem does not cause a failure in a redundant subsystem. There is no sharing between redundant Class 1E subsystems, such as batteries, battery chargers, or distribution panels.

The criteria for sizing large lead storage batteries are defined in IEEE-485 (Ref. 5).

Each Train H and Train J DC electrical power subsystem has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads discussed in the UFSAR, Chapter 8 (Ref. 4).

The EDG DC electrical power system consists of the battery, battery charger, and interconnecting cabling to supply the required DC voltage to allow the associated EDG components to perform the required safety function.

For the other unit, control power for breakers and electrical power for solenoid operated valves that are needed to support operation of each required Service Water (SW) pump, Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Emergency Ventilation System (EVS) fan, Auxiliary Building central exhaust fan, and Component Cooling Water (CC) pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems. R19

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 6), and in the UFSAR, Chapter 15 (Ref. 7), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the emergency auxiliaries and control and switching during all MODES of operation.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The OPERABILITY of the DC sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining the DC sources OPERABLE during accident conditions in the event of:

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

b. A worst case single failure.

The OPERABILITY of the EDG DC electrical power system ensures the EDG may perform its required safety function.

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

LCO

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

The EDG DC electrical power system consists of the battery, battery charger, and interconnecting cabling to supply the required DC voltage to allow the associated EDG components to perform the required safety function.

An OPERABLE DC electrical power subsystem requires all required batteries and respective chargers to be operating and connected to the associated DC bus(es).

Additionally, the unit's electrical sources must include DC sources from the other unit that are required to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, or CC safety functions. Control power for breakers and electrical power for solenoid operated valves are examples of support systems required to be OPERABLE that are needed for the operation of each required SW pump, MCR/ESGR EVS fan,

RAI 3.8.4-09 R3 R19

(continued)

BASES

LCO (continued)

Auxiliary Building central exhaust fan, and CC pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems.

RAI 3.8.4-09 R3 R19

APPLICABILITY

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure safe unit operation and to ensure that:

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

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

The EDG DC system is required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure the OPERABILITY of the associated EDG in accordance with LCO 3.8.1. In MODES 5 or 6, the OPERABILITY requirements of the EDG DC system are determined by the EDGs that they support in accordance with LCO 3.8.2.

The DC electrical power requirements for MODES 5 and 6 are addressed in the Bases for LCO 3.8.5, "DC Sources–Shutdown."

ACTIONS

A.1

Condition A represents one train with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for complete loss of DC power to the affected train. The 2 hour limit is consistent with the allowed time for an inoperable DC distribution system train.

If one of the required LCO 3.8.4.a DC electrical power subsystems is inoperable (e.g., inoperable battery, inoperable battery charger(s), or inoperable battery charger and associated inoperable battery), the remaining LCO 3.8.4.a DC electrical power subsystem has the capacity to support a safe shutdown and to mitigate an accident condition. For the Station batteries, a spare battery charger may be substituted for the normal charger without

(continued)

BASES

ACTIONS

A.1 (continued)

entry into Condition A. Since a subsequent worst case single failure would, however, result in the complete loss of the remaining 125 VDC electrical power subsystems with attendant loss of ESF functions, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 8) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown.

B.1 and B.2

If the inoperable DC electrical power subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. The Completion Time to bring the unit to MODE 5 is consistent with the time required in Regulatory Guide 1.93 (Ref. 8). R3

C.1

Condition C represents the loss of the ability of the EDG DC system (e.g., inoperable battery charger or inoperable battery) to supply necessary power to the associated EDG. In this condition, the associated EDG is immediately declared inoperable and the associated Conditions or Required Actions of LCO 3.8.1 are followed.

D.1

Condition D represents the loss of one or more required LCO 3.8.4.c DC electrical power subsystem(s) needed to support the operation of required shared components on the other unit. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems. In this condition, the associated required shared components are declared inoperable immediately. The associated Conditions or Required Actions of LCO 3.7.8, "Service Water System," R19

(continued)

BASES

ACTIONS

D.1 (continued)

LCO 3.7.10, "MCR/ESGR Emergency Ventilation Systems," LCO 3.7.12, "Emergency Core Cooling System Pump Room Exhaust Air Cleanup System," and LCO 3.7.19, "Component Cooling Water (CC) System," are followed. R19

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

For Station and EDG batteries, verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the charging system and the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery (or battery cell) and maintain the battery (or a battery cell) in a fully charged state. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is consistent with manufacturer recommendations and IEEE-450 (Ref. 9).

SR 3.8.4.2

Visual inspection of both Station and EDG batteries to detect corrosion of the battery cells and connections, or measurement of the resistance of each intercell, interrack, intertier, and terminal connection, provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance.

The presence of visible corrosion does not necessarily represent a failure of this SR provided visible corrosion is removed during performance of SR 3.8.4.4.

The Surveillance Frequency for these inspections, which can detect conditions that can cause power losses due to resistance heating, is 92 days. This Frequency is considered acceptable based on operating experience related to detecting corrosion trends.

BASES

BACKGROUND (continued)

For the other unit, one AC and DC bus on that unit is needed to support operation of each required Service Water (SW) pump, Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Emergency Ventilation System (EVS) fan, Auxiliary Building central exhaust fan, and Component Cooling Water (CC) pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems. R19

The list of all required distribution buses is presented in Table B 3.8.9-1.

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 1), and in the UFSAR, 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.

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

b. A worst case single failure.

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

LCO

The required power distribution 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

(continued)

BASES

ACTIONS

C.1 (continued)

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

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

The 2 hour Completion Time for DC buses is consistent with Regulatory Guide 1.93 (Ref. 3).

The second Completion Time for Required Action C.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition C is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the DC distribution system. At this time, an AC train could again become inoperable, and DC distribution restored OPERABLE. This could continue indefinitely.

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

D.1

With one or more required LCO 3.8.9.b AC electrical power distribution subsystem(s) inoperable, the shared component(s) on the other unit is not capable of operating. In this condition, the associated shared component is declared inoperable immediately. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems. The associated Conditions or Required Actions of LCO 3.7.8, "Service Water System," LCO 3.7.10, "MCR/ESGR Emergency

R3
R19

(continued)

BASES

ACTIONS

D.1 (continued)

Ventilation System," LCO 3.7.12, "Emergency Core Cooling System Pump Room Exhaust Air Cleanup System," and LCO 3.7.19, "Component Cooling Water (CC) System," are followed. R19

E.1

With one or more required LCO 3.8.9.b DC electrical power distribution subsystem(s) inoperable, the shared component(s) on the other unit is not capable of operating. In this condition, the associated shared component is declared inoperable immediately. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC are shared systems. The associated Conditions or Required Actions of LCO 3.7.8, 3.7.10, 3.7.12, and 3.7.19 are followed. R19 R19

F.1 and F.2

If the inoperable LCO 3.8.9.a 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 unit systems.

G.1

Condition G corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. When more than one inoperable LCO 3.8.9.a electrical power distribution subsystem results in the loss of a required function, the unit 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. R3

7. CTS Surveillance Requirement 4.8.1.1.2.d.10 requires each EDG to be fast started within 5 minutes of shutting down from 2 hours of operation loaded between 2500 and 2600 kW or until the EDG obtains stable operating temperatures. ISTS SR 3.8.1.15 is modified to retain the allowance to operate an EDG until "operating temperatures have stabilized," in the ITS SR 3.8.1.14 Note 1. This change is acceptable because the function of the Note is to ensure the EDG is at normal operating conditions before it is shutdown, and restarted within 10-seconds to the required voltage and frequency.

8. ISTS LCO part c, Action F and SR 3.8.1.18 are constructed for a load sequencer that coordinates supplying electrical power for a train of equipment. The assumed type of sequencer operates differently depending on the source of electrical power for the emergency bus (EDG or offsite circuit). Failure of the sequencer would affect all components powered by the emergency electrical bus. Therefore, a sequencer is typically allowed to be inoperable for only 12 hours, the same Completion Time allowed for a loss of an EDG concurrent with the loss of an offsite circuit. The North Anna electrical design does not utilizes this type of device, but uses individual sequencing timing relays for each component to be loaded onto an emergency bus. The components served by the sequencing timing relays are not dependent on the source of power supplying the emergency bus. The ITS is modified to reflect the North Anna design. An inoperable sequencing timing relay requires entry into the Condition K. ITS Required Action K.1 requires the affected system, subsystem, or component to be declared inoperable immediately, while Required Action K.2.1 requires the component be placed in a condition that inhibits the automatic loading to the emergency bus and K.2.2 allows the associated EDG to be declared inoperable. These Required Actions are appropriate to ensure the electrical bus is protected and degraded safety functions are tracked. ITS SR 3.8.1.16 verifies each sequenced load is within design tolerance for each sequencing timing relay every 18 months. This change is acceptable because a sequencing timing relay can affect an individual function and the emergency bus.

9. ISTS SR 3.8.1.10 requires verification every 18 months that each EDG will not trip and will maintain voltage within a maximum limit on a full load rejection test. A full load rejection test is not required by the CTS requirements, and is not included in the ITS requirements. Each EDG will continue to perform the largest post-accident load rejection test every 18 months. This change is acceptable because the North Anna electrical design utilizes a higher current trip on the EDG output breaker than from individual loads. The SRs following ISTS SR 3.8.1.10 are re-numbered to reflect this deletion.

RAI 3.8.1-02 R3

10. Not used.

11. Not used.

R19

12. CTS electrical source requirements for Service Water (SW) and Component Cooling (CC) pumps, Main Control Room/Emergency Switchgear Room fans, and Auxiliary Building central exhaust fans (shared components) are incorporated into the ITS 3.8.1 requirements. The electrical requirements for a unit's shared functions may include

**INSERT 1**

Additionally, the unit's electrical sources must include electrical sources from the other unit that are required to support the Service Water (SW), Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Emergency Ventilation System (EVS), Auxiliary Building central exhaust system or Component Cooling Water (CC) safety functions. This requirement could include both of the other unit's offsite circuits and EDGs for this unit. R19

**INSERT 2**

permanently connected loads and all automatically connected loads, via the load sequencing timing relays, needed to recover the unit or maintain it in a safe condition are energized.

**INSERT**

The other unit's offsite circuit(s) and EDG(s) are required to be OPERABLE to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust and CC functions needed for this unit. These functions share components, pumps or fans, which are electrically powered from both units. | R19

**INSERT**

C.1 and C.2

To ensure a highly reliable electrical power source remains available when one EDG is inoperable, Condition C is established to monitor the OPERABILITY of the AAC DG and the other unit's EDGs. Condition B is entered any time an EDG becomes inoperable and the Required Actions and Completion Times are followed. Concurrently, if the AAC DG or one or more of the other unit's EDG(s) is inoperable, or become inoperable, in addition to the Required Actions of Condition B, Required Actions C.1 and C.2 limit the time the EDG may be out of service to 72 hours. If the AAC DG or the other unit's EDG(s) is inoperable when the EDG becomes inoperable, the allowed outage time (AOT) is limited to 72 hours, unless the AAC DG and the other unit's EDG(s) are returned to OPERABLE status. If during the 72 hour Completion Time of C.1 or C.2, the AAC DG and the other unit's EDG(s) are return to OPERABLE status, Condition C is exited and AOT is restricted by the Completion Time tracked in Condition B. If the AAC DG or one or more of the other unit's EDG(s) becomes inoperable at sometime after the initial EDG inoperability, Condition C requires the restoration of the AAC DG and the other unit's EDG(s) within 72 hours or Condition L is required to be entered.

The 72 hour Completion Time is considered reasonable and takes into account the assumption in the probabilistic safety analysis (PSA) for potential core damage frequency.

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

Condition D is modified by a Note indicating that separate Condition entry is allowed for each offsite circuit on the other unit that provides electrical power to required shared components.

To provide the necessary electrical power for the SW, MCR/ESGR EVS, Auxiliary Building central exhaust and CC functions for a unit, AC electrical sources of both units may be required to be OPERABLE. Action D is entered for one or more inoperable offsite circuit(s) on the other unit that is necessary to support required shared components. These shared components are the SW pump(s), MCR/ESGR EVS fan(s), Auxiliary Building central exhaust fan(s), and CC pumps. Required Action D.1 verifies the OPERABILITY of the remaining required offsite sources 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. | RA | R19

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. The required shared component has no offsite power; and

b. A required shared component(s) in the same system is inoperable. | RAI 3.8.1-35 R3

**INSERT (continued)**

If at any time during the existence of Condition D (one offsite circuit inoperable on the other unit needed to supply electrical power for a required shared component) another required shared component in the same system subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power on the other unit that supports a required shared component and an additional required shared component in the same system inoperable, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuits and EDGs that power the required shared components are adequate to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC functions. The 24 hour Completion Time takes into account the component OPERABILITY of the remaining shared component(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period. | R19

Operation may continue in Condition D for a period of 72 hours. With one offsite circuit inoperable on the other unit supplying electrical power to a required shared component, the reliability of the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC functions are degraded. The potential for the loss of offsite power to the other required shared components is increased, with the attendant potential for a challenge to SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, and CC functions. | R3, R19 | R19

The required offsite circuit must be returned to OPERABLE status within 72 hours, or the support function for the associated shared component is considered inoperable. At that time, the required shared component must be declared inoperable and the appropriate Conditions of the LCO 3.7.8, "Service Water System," LCO 3.7.10, "MCR/ESGR Emergency Ventilation System," LCO 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System," and LCO 3.7.19, "Component Cooling Water (CC) System," must be entered. The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required shared components, a reasonable time for repairs and the low probability of a DBA occurring during this period of time. | R19

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

To ensure a highly reliable power source remains with an inoperable EDG, 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 E.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.

**INSERT (continued)**

Required Action E.2 is intended to provide assurance that a loss of offsite power, during the period that an EDG is inoperable, does not result in a complete loss of the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, or CC functions. | R19

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

a. The required shared component with an inoperable EDG; and

b. A required shared component(s) in the same system is inoperable. | RAI 3.8.1-35 R3

If at any time during the existence of Condition E (one EDG inoperable on the other unit needed to supply electrical power for a required shared component) another required shared component subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering an EDG on the other unit that supports a required shared component and an additional required shared component inoperable, results in starting the Completion Times for the
Required Action. Four 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 circuits and EDGs that power the required shared components are adequate to support the SW, MCR/ESGR EVS, Auxiliary Building central exhaust system, or CC functions. The 4 hour Completion Time takes into account the component OPERABILITY of the remaining shared component(s), a reasonable time for repairs, and the low probability of a DBA occurring during this period. | R19

Operation may continue in Condition E for a period of 14 days. With one EDG inoperable on the other unit supplying electrical power to a required shared component, the reliability of the respective Function is degraded. The potential for the loss of EDGs to the other required shared components is increased, with the attendant potential for a challenge to respective Function.

The required EDG must be returned to OPERABLE status within 14 days, or the support function for the associated shared component is considered inoperable. At that time, the required shared component must be declared inoperable and the appropriate Conditions of the LCOs 3.7.8, 3.7.10, 3.7.12 and 3.7.19 must be entered. The 14 day Completion Time takes into account the capacity and capability of the remaining AC sources providing electrical power to the required shared components, a reasonable time for repairs and the low probability of a DBA occurring during this period of time. | R 19

**INSERT (continued)**

F.1 and F.2

To ensure a highly reliable electrical power source remains available when one EDG is inoperable that is required to support a required shared component on the other unit, Condition F is established to monitor the OPERABILITY of the AAC DG and the LCO 3.8.1.b EDGs. Condition F is entered any time an EDG that is required to support a required shared component that receives its electrical power from the other unit becomes inoperable and the Required Actions and Completion Times are followed. Concurrently, if the AAC DG or one or more of this unit's EDG(s) is inoperable, or become inoperable, in addition to the Required Actions of Condition E, Required Actions F.1 and F.2 limit the time the EDG may be out of service to 72 hours. If the AAC DG or this unit's EDG(s) is inoperable when the other unit's EDG becomes inoperable, the AOT is limited to 72 hours, unless the AAC DG and this unit's EDG(s) are returned to OPERABLE status. If during the 72 hour Completion Time of F.1 or F.2, the AAC DG and this unit's EDG are return to OPERABLE status, Condition F is exited and AOT is restricted by the Completion Time tracked in Condition E. If the AAC DG or one or more of this unit's EDG(s) becomes inoperable at sometime after the initial EDG inoperability, Condition F requires the restoration of the AAC DG and this unit's EDG(s) within 72 hours or the supported shared component must be declared inoperable and LCOs 3.7.8, 3.7.10, 3.7.12 and 3.7.19 provides the appropriate restrictions. | R19

The 72 hour Completion Time is considered reasonable and takes into account the assumption in the probabilistic safety analysis (PSA) for potential core damage frequency.

**INSERT**

J.1

With two LCO 3.8.1.c required EDGs inoperable, as many as two required shared and potentially required components have no remaining standby AC sources. Thus, with an assumed loss of offsite power condition, the required shared components powered from the other unit would be significantly degraded. Therefore, the required shared component would immediately be declared inoperable and LCOs 3.7.8, 3.7.10, 3.7.12 and 3.7.19 would provide the appropriate restrictions. R3, R19

K.1 and K.2

Condition K is modified by a Note indicating that separate Condition entry is allowed for each inoperable sequencing timing relay.

Condition K is entered any time a required sequencing timing relay (STR) becomes inoperable. Required Action K.1 directs the entry into the Required Actions and Completion Times associated for the individual component served by the inoperable relay. The instrumentation signals that provide the actuation are governed by LCO 3.3.2, "Engineered Safety Features Actuation System Instrumentation" for safety injection (SI), Containment Spray (Containment Depressurization Actuation (CDA)) and LCO 3.3.5, "Loss of Power (LOP) Emergency Diesel Generator (EDG) Start Instrumentation" for the LOP.

The STRs provide a time delay for the individual component to close its breaker to the associated emergency electrical bus. Each component is sequenced onto the emergency bus by an initiating signal. Required Action K.2.1 provides for the immediate isolation of the component(s) ability to automatically load on an emergency bus with an inoperable STR. This provides an assurance that the component will not be loaded onto an emergency bus at an incorrect time. Improper loading sequence may cause the emergency bus to become inoperable rendering a component with an inoperable STR incapable of load to the emergency bus prevents a possible overload condition. Required Action K.2.2 provides an alternative option for isolating the component with an inoperable STR from the emergency bus by allowing the associated EDG to be declared inoperable.

**INSERT**

The EDG DC electrical power system consists of the battery, battery charger, and interconnecting cabling to supply the required DC voltage to allow the associated EDG components to perform the required safety function.

For the other unit, control power for breakers and electrical power for solenoid operated valves that are needed to support operation of each required Service Water (SW) pump, Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Emergency Ventilation System (EVS) fan, Auxiliary Building central exhaust fan and Component Cooling Water (CC) pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC are shared systems. R19

**INSERT 1**

The OPERABILITY of the EDG DC electrical power system ensures the EDG may perform its required safety function.

**INSERT 2**

The EDG DC electrical power system consists of the battery, battery charger, and interconnecting cabling to supply the required DC voltage to allow the associated EDG components to perform the required safety function.

**INSERT 3**

RAI 3.8.4-09 R3
| R19

Additionally, the unit's electrical sources must include DC sources from the other unit that are required to support the SW, MCR/ ESGR EVS, Auxiliary Building central exhaust system or CC safety functions. Control power for breakers and electrical power for solenoid operated valves are examples of support systems required to be OPERABLE that are needed for the operation of each required SW pump, MCR/ ESGR EVS fan, Auxiliary Building central exhaust fan and CC pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC are shared systems.

| R19

**INSERT**

C.1

Condition C represents the loss of the ability of the EDG DC system (e.g., inoperable battery charger or inoperable battery) to supply necessary power to the associated EDG. In this condition, the associated EDG is immediately declared inoperable and the associated Conditions or Required Actions of LCO 3.8.1 are followed.

D.1

Condition D represents the loss of one or more required LCO 3.8.4.c DC electrical power subsystem(s) needed to support the operation of required shared components on the other unit. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC are shared systems. In this condition, the associated required shared components are declared inoperable immediately. The associated Conditions or Required Actions of LCO 3.7.8, "Service Water System," LCO 3.7.10, "MCR/ESGR Emergency Ventilation Systems," LCO 3.7.12, "Emergency Core Cooling System Pump Room Exhaust Air Cleanup System," and LCO 3.7.19, "Component Cooling Water (CC) System," are followed. | R19 | R19

**INSERT 1**

RAI 3.8.9-01 R3

Unit 1 has a normal offsite source and an alternate offsite source. Transfer to the alternate offsite source is a manual operation. Unit 2 has a normal offsite source, and no alternate source. In the event of a loss of offsite power, the EDGs for the affected buses will start and load. The EDGs for Unit 1 will continue to run until a) the safety bus is transferred to the alternate offsite source, or b) the normal offsite source is restored. The Unit 2 EDGs will continue to run until the normal offsite source is restored.

**INSERT 2**

For the other unit, one AC and DC bus on that unit is needed to support operation of each required Service Water (SW) pump, Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Emergency Ventilation System (EVS) fan, Auxiliary Building central exhaust fan and Component Cooling Water (CC) pump. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC are shared systems. R19

## INSERT 1

D.1

With one or more required LCO 3.8.9.b AC electrical power distribution subsystem(s) inoperable, the shared component(s) on the other unit is not capable of operating. In this condition, the associated shared component is declared inoperable immediately. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC are shared systems. The associated Conditions or Required Actions of LCO 3.7.8, "Service Water System," LCO 3.7.10, "MCR/ESGR Emergency Ventilation System," LCO 3.7.12, "Emergency Core Cooling System Pump Room Exhaust Air Cleanup System," and LCO 3.7.19, "Component Cooling Water (CC) System," are followed.

R3
R19
R19

E.1

With one or more required LCO 3.8.9.b DC electrical power distribution subsystem(s) inoperable, the shared component(s) on the other unit is not capable of operating. In this condition, the associated shared component is declared inoperable immediately. SW, MCR/ESGR EVS, Auxiliary Building central exhaust system and CC are shared systems. The associated Conditions or Required Actions of LCO 3.7.8, LCO 3.7.10, LCO 3.7.12 and LCO 3.7.19 are followed.

R19

## INSERT 2

Condition G corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. When more than one inoperable LCO 3.8.9.a electrical power distribution subsystem results in the loss of a required function, the unit 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.

R3

ADMINISTRATIVE CHANGES

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

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

A.2 CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path." Each unit's service water system requirements consist of the above requirements for either unit operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the MCR/ESGR and Auxiliary Building exhaust ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS LCO 3.8.1 Action J states, "Two required LCO 3.8.1.c EDGs inoperable, declare shared components inoperable immediately." This changes the CTS by specifically stating the requirement in the ITS Action J. R17 R19

The purpose of the proposed change is to structure the existing electrical requirements for the shared components in the ITS by placing electrical requirements in ITS section 3.8. This change is acceptable because the AC sources requirements for the SW, CC, MCR/ESGR Emergency Habitability System, and ECCS Pump Room Exhaust Cleanup System functions are contained in the electrical requirement section of the unit's Technical Specifications. The additional requirements of the fans in the ventilation specifications are addressed by more restrictive discussion of changes to the CTS requirements. The additional electrical requirements are classified as administrative because of the systems may require electrical power from both units in order to satisfy the individual safety function. This change is designated as administrative because it does not result in a technical change to the CTS. R19

A.3 CTS 3.8.1.1 Actions b.1 and b.2 provide an allowance to have an EDG inoperable for up to 14 days. These Actions require the OPERABILITY of the alternate AC (AAC)

A.7 CTS 3.8.1.1 Action e applies when two EDGs are inoperable and requires one EDG to be restored to OPERABLE status within two hours. This requirement also states, "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." In addition the CTS requires, "Following restoration of one EDG, follow Action Statement b. with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable EDG." ITS Actions B and I are constructed to track the inoperability of one and two EDGs. ITS Action B requires that each inoperable EDG be tracked and ITS Action I applies when both EDGs are inoperable. Therefore, ITS Action B must be entered if one or two EDGs are inoperable and requires the performance of SR 3.8.1.1 within one hour and every eight hours thereafter. This maintains the CTS requirement to demonstrate the OPERABILITY of two offsite AC circuits within an hour and every 8 hours thereafter when one or two EDGs are inoperable.

This change is acceptable because the technical requirements remain the same. The ITS requires multiple condition entry. Therefore, ITS Actions B and I would both be entered if two EDGs were inoperable and Action B would be followed until both EDGs were restored to OPERABLE status. This has the same effect as the CTS requirements. Therefore, the deletion of the wording in CTS 3.8.1.1 Action e does not modify the technical requirements of the CTS and the unit would be required to be in MODE 5 (COLD SHUTDOWN) within 30 hours after reducing to MODE 3 (HOT STANDBY). This change is designated as administrative because it does not result in a technical change to the CTS.

A.8 CTS LCO 3.8.1.1 does not contain an Action for more than two sources of either offsite circuits or EDGs inoperable. Having more than two sources inoperable requires entering CTS LCO 3.0.3. ITS 3.8.1, Action M, requires entering LCO 3.0.3 immediately if three or more AC sources are inoperable.

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

A.9 CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path." Each unit's service water system specification applies when either unit is operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. R19

This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS LCO 3.8.1, "AC Sources," part c states, "One qualified circuit between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System and one EDG capable of supplying the onsite Class 1E AC power distribution subsystem on the other unit for each required shared component; and." This change maintains the CTS requirements for AC sources in the ITS format. | R19

The purpose of the proposed change is to structure the existing electrical requirements for the shared components in the ITS by placing electrical requirements in ITS Section 3.8. This change is acceptable because the AC sources requirements for the SW, CC, MCR/ESGR Emergency Habitability System, and ECCS Pump Room Exhaust Cleanup System functions are moved to the electrical requirement section of the unit's Technical Specifications. The additional requirements of the fans in the ventilation specifications are addressed by more restrictive discussion of changes to the CTS requirements. The movement of the electrical requirements is classified as administrative because of the systems may require electrical power from both units in order to satisfy the individual safety function. This change is designated as administrative because it does not result in a technical change to the CTS. | R19

A.10. CTS SR 4.8.1.1.2.a.4 states "Verifying the EDG can start ** and voltage and frequency at 4160 ± 420 volts and 60 ± 0.5 Hz." The note ** states, "This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations." ITS SR 3.8.1.2 states, "Verify each EDG starts from standby conditions and achieves steady state voltage of ≥ 3740 V to ≤ 4580 V, and the frequency from ≥ 59.5 Hz to ≤ 60.5 Hz." Two Notes modify SR 3.8.1.2. Note 1 states, "All EDG starts may be preceded by an engine prelube period and followed by a warm up period prior to loading." Note 2 states, "A modified EDG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When a modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met." This changes the CTS by specifically stating the requirements and allowances in the ITS format.

This change is acceptable because the requirements of the CTS are maintained in the ITS requirements. ITS Note1 maintains the allowances provided by the CTS note for a prelube and warmup period prior to loading. ITS Note 2 establishes that ITS SR 3.8.1.2 may involve idling and gradual acceleration to synchronous speed and SR 3.8.1.2 may be credited when performing SR 3.8.1.7. This is acceptable because the CTS note allows loading in accordance with loading recommendations and SR 3.8.1.7 meets or exceeds the technical requirements of SR 3.8.1.2. This change is designated as administrative because it does not result in a technical change to the CTS.

Surveillance is only applicable to Unit 1." This changes the CTS by specifically stating that the SR is only to Unit 1. RAI 3.8.1-02 R3

This change is acceptable because SR 4.8.1.1.1.b has been deleted for Unit 2. The purpose of the note is to limit the SR to be required for Unit 1. This change is designated as administrative because the addition of the Note does not result in a technical change to the Unit 1 CTS.

A.18 CTS Surveillance Requirement 4.8.1.1.2.d.5.c requires the verification that all EDG trips, except engine overspeed, generator differential and breaker overcurrent are automatically bypassed on an emergency start. The output breaker overcurrent for the EDG is not a trip for the diesel and should not be included in the exception. ITS SR 3.8.1.12 requires the verification of each EDG's automatic trips are bypassed on an actual or simulated automatic start signal except for engine overspeed and generator differential current. This changes the CTS by eliminating the EDG output breaker overcurrent from the list of EDG trips.

This change is acceptable because the output breaker overcurrent does not provide a trip of the EDG. With the deletion of the output breaker overcurrent, no technical requirement is added or deleted with the conversion of the CTS requirements to the ITS requirements. The output breaker overcurrent should not have been included in the CTS requirements. This change is designated as administrative because it does not result in a technical change to the CTS.

A.19 CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path." Each unit's service water system specification applies when either unit is operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS 3.8.1Action F states if the required offsite circuit and EDG on the other unit that support a required shared components become inoperable, the supported shared components will be declared inoperable immediately. The differences between the requirements for the shared systems of the CTS and the ITS are addressed in ITS LCOs 3.7.8, 3.7.10, 3.7.12, and 3.7.19. This change maintains the CTS requirements in the ITS format. R19 R19

actual SI signal ITS SR 3.8.1.11 does not result in any change in emergency bus voltage or frequency. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.10 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS Surveillance Requirements 4.8.1.1.1 and 4.8.1.1.2 contain requirements to perform various testing "during shutdown." ITS SRs 3.8.1.8, 3.8.1.12, and 3.8.1.13 add a Note that restricts performance of the SRs in MODES 1 and 2. The Note is modified with an allowance that the SR may be performed for the purpose of re-establishing OPERABILITY for inoperable equipment. This changes the CTS by allowing the specified surveillances to be performed in a MODE that is not currently allowed. R11

The purpose of the surveillance Notes is to allow the requirement to be performed without requiring the unit to be shutdown unnecessarily. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change modifies when Surveillance Requirements may be performed. The performances of these SRs with the unit operating at full power will not significantly perturbate the electrical system. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS. RAI 3.8.1-02 R3

L.11 *(Category 4 – Relaxation of Required Action)* CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path . . . ." Each unit's service water system requirements consist of the above requirements for either unit operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS LCO 3.8.1 Actions A, B, and C provide for an evaluation of all safety functions powered by this unit's AC sources and provide 72 hours for an inoperable offsite circuit and up to 14 days for an inoperable EDG. ITS 3.8.1 Action D for one or more offsite circuit(s), and Actions E and F for an inoperable EDG on the other unit that is needed to support a shared components. This changes the CTS by allowing a shared components to be considered OPERABLE for R19 R19

ADMINISTRATIVE CHANGES

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

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

A.2 Not used.

A.3 ITS Action G states that with two trains of inoperable distribution subsystems that result in a loss of safety function, enter LCO 3.0.3 immediately. The CTS does not include this specific requirement. This changes the CTS by specifically requiring entry into LCO 3.0.3 when a loss of function occurs.

This change is acceptable because CTS LCO 3.0.3 would be entered when a LCO is not met and there are no Conditions or Required Actions stated. The loss of more than one bus continues to require the entry into LCO 3.0.3 in the CTS and ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 CTS LCO 3.8.2.1 states that the following AC electrical busses shall be OPERABLE and energized with the tie breakers open between redundant busses. These buses include H and J trains of AC 4160 and 480 volts subsystems. This requirement also includes that each of the four 120-volt AC vital buses is energized from its associated inverter that is powered from an associated 125-volt DC bus. CTS LCO 3.8.2.3 requires the following DC bus trains to be energized and OPERABLE with tie breakers between bus trains open. The trains consists of two 125-volt DC buses, two batteries, and a charger. The makeup of the 4160, 480, and 120 volt AC buses and the DC buses is addressed by DOC LA.2. The requirement that all buses are energized is addressed by DOC LA.1. ITS LCO 3.8.9 requires that the H and J Trains of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE. This changes the CTS by combining the requirements for AC and DC distribution systems into one specification.

This change is acceptable because the technical requirements of the CTS are maintained in the ITS requirements. The CTS and the ITS require the various AC and DC subsystems to be OPERABLE. This change is designated as administrative because it does not result in a technical change to the CTS.

A.5 CTS LCO 3.7.4.1 requires the normal and emergency power supplies to be OPERABLE for the required Service Water pumps. The Control Room ventilation

fans, the Auxiliary Building central exhaust fans, and the Component Cooling Water (CC) pumps may require electrical power from the other unit for the pumps and fans to be considered OPERABLE. ITS LCO 3.8.9, Actions, and Surveillance Requirements are modified to include the electrical distribution systems on the other unit that are required to support shared components that are powered for the other unit. This change maintains the CTS requirements in the ITS format. R19

The change is acceptable because these requirements ensure the electrical distribution systems that are needed to support shared components on the other unit, needed for this unit, are maintained OPERABLE. This is the intent of the CTS requirements in LCO 3.7.4.1 for the required shared components are to ensure all electrical system necessary to power these components. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 3.8.2.1 Action a. states that with one of the required A.C. emergency busses not fully energized, re-energize the bus within 8 hours. Action b. states within one A.C. Vital Bus not energized, re-energize the A. C. Vital bus within 2 hours. CTS 3.8.2.3 Action a states with one 125 VDC bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours. ITS 3.8.9, Action A, states that with one AC subsystem inoperable, restore the subsystem to OPERABLE status within 8 hours and 16 hours from discovery of failure to meet LCO. Action B states that with one AC vital bus inoperable, restore the AC bus to OPERABLE status within 2 hours and 16 hours from discovery of failure to meet LCO. Action C states that with one DC vital bus inoperable restore the DC bus to OPERABLE status within 2 hours and 16 hours from discovery of failure to meet LCO. This changes the CTS by placing a limit of 16 hours for failing to meet the LCO when the CTS does not specify a limit.

This change is acceptable because it provides a reasonable period of time to restore all required subsystems to OPERABLE status, but specifies a finite time the LCO may not be met. This change is designated as more restrictive the ITS imposes a 16-hour Completion Time which the CTS does not impose.

M.2 CTS 4.8.2.1 states the specified A.C. busses shall be determined OPERABLE at least once per 7 days by verifying indicated power availability. CTS 4.8.2.3.1 states that each D.C. bus train shall be demonstrated OPERABLE at least once per 7 days by verifying indicated power availability. ITS SR 3.8.9.1 requires the verification of the correct voltage to required AC, DC, and AC vital buses electrical power distribution subsystems every 7 days. This changes the CTS by requiring the verification of the correct voltages to the required AC, DC, and AC vital buses electrical power distribution subsystems, where the CTS only requires verification of indicated power.

The purpose of this change is to ensure proper voltage is supplied to the required AC, DC, and AC vital buses electrical power distribution subsystems. This change is

# REVISION OF DOC TABLES FOR SE

| DOC No. | Description of Change | ITS Requirement | CTS Requirement |
|---|---|---|---|
| 3.7.17 A.1 | In the conversion of the North Anna 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. 1, "Standard Technical Specifications-Westinghouse Plants" (ISTS).<br><br>These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS. | Various | Various |
| 3.7.18 A.1 | In the conversion of the North Anna 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. 1, "Standard Technical Specifications-Westinghouse Plants" (ISTS).<br><br>These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS. | Various | Various |
| 3.7.19 A.1 | In the conversion of the North Anna 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. 1, "Standard Technical Specifications-Westinghouse Plants" (ISTS).<br><br>These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS. | Various | Various |
| 3.7.19 A.2 | CTS 3.7.3.1 states that the CC loops are shared by the units. The Applicability applies when either unit is in MODES 1, 2, 3, or 4. Actions a, b, and c contain requirements on both units. ITS 3.7.19 is written to apply to a single unit. The change to the LCO is described in DOC LA.1. The change to the Applicability and the Actions are administrative changes necessary to be consistent with the change to the LCO. This presentation is also consistent with the presentation used in ITS LCO 3.7.8, Service Water System, which is a similar shared system.<br><br>This change is acceptable because both units are required to follow the Technical Specifications and CC is a shared system. If a required CC subsystem is inoperable, both units are affected. The CC applies to each unit that is in the Applicability, so if either unit is in MODE 1, 2, 3, or 4, the CC System is required to be OPERABLE. If one or more CC subsystems are inoperable, ACTIONS must be entered on both units if both are in the Applicable MODES. Therefore, eliminating the cross-unit references is an administrative change. This change is designated as administrative because it does not result in technical changes to the CTS. | LCO 3.7.19 | 3.7.3.1, Actions a, b, and c |

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| DOC No. | Description of Change | ITS Requirement | CTS Requirement |
|---|---|---|---|
| 3.7.19 A.3 | CTS 3.7.3.1 includes footnote "**" which allows a temporary exception to the CC LCO for service water system upgrades. ITS 3.7.19 does not contain that temporary exception.<br><br>This change is acceptable because the temporary exception was only allowed to be used two times (once per SW loop). The temporary exception has been used and is no longer valid. This change is designated as administrative because it does not result in technical changes to the CTS. | None | 3.7.3.1, footnote *** |
| 3.7.19 A.4 | CTS 3.7.3.1 Actions refer to CTS MODE names, "Hot Standby," "Hot Shutdown," and "Cold Shutdown." ITS 3.7.19 uses the corresponding ITS MODE numbers, "MODE 3," "MODE 4," and "MODE 5." This changes the CTS by utilizing MODE numbers instead of MODE names. Any technical changes associated with the differences in CTS MODES and ITS MODES are discussed in Chapter 1.0.<br><br>This change is acceptable because the ITS uses MODE numbers instead of MODE names. Any technical changes associated with the differences in CTS MODES and ITS MODES are discussed in Chapter 1.0. This change is designated as administrative because it does not result in technical changes to the CTS. | ACTIONS A, B, C, and D | 3.7.3.1, Actions a, b, and c |

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Table R – Relocated Specifications and Removed Details
ITS Section 3.7 – Plant Systems

| DOC No. | CTS Requirement | Description of Relocated Requirements | Location | Change Control Process | Change Category |
|---|---|---|---|---|---|
| 3.7.18 None | N/A | N/A | N/A | N/A | N/A |
| 3.7.19 LA.1 | 3.7.3.1 | CTS LCO 3.7.3.1 states that three CC subsystems, shared with the other unit, shall be OPERABLE and contains a description of what constitutes an OPERABLE subsystem. Footnote "*" provides further details on what constitutes an operable subsystem. ITS 3.7.19 requires three CC subsystems to be OPERABLE. This changes CTS by moving the details of what constitutes an OPERABLE subsystem, including that the subsystems are shared between the units, to the Bases. | Bases | ITS 5.5.13, Technical Specifications Bases Control Program | 1 |
| CTS 3.7.1.6 R.1 | 3.7.1.6 | CTS 3.7.1.6 states that the structural integrity of the steam turbine assembly shall be maintained in MODES 1 and 2. The steam turbine assembly is used to provide the motive force for the main electrical generator. This LCO does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual. | Technical Requirements Manual | 10 CFR 50.59 | R |
| CTS 3.7.1.7 R.1 | 3.7.1.7 | CTS 3.7.1.7 states that at least one turbine overspeed protection system shall be OPERABLE in MODES 1, 2, and 3. The turbine overspeed protection system is used to prevent a turbine overspeed condition that could result in turbine damage. The turbine overspeed protection system serves no accident mitigation function in any MODE. This LCO does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual. | Technical Requirements Manual | 10 CFR 50.59 | R |

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Change Category:
1 - Removing Details of System Design and System Description, Including Design Limits
2 - Removing Descriptions of System Operation
3 - Removing Procedural Details for Meeting TS Requirements and Related Reporting
4 - Removing Performance Requirements for Indication-Only Instrumentation and Alarms
5 - Removal of Cycle-Specific Parameter Limits from the Technical Specifications to the Core Operating Limits Report

Table R – Relocated Specifications and Removed Details
ITS Section 3.7 – Plant Systems

| DOC No. | CTS Requirement | Description of Relocated Requirements | Location | Change Control Process | Change Category |
|---|---|---|---|---|---|
| CTS 3.7.2.1 R.1 | 3.7.2.1 | CTS 3.7.2.1 states that the temperature of both the primary and secondary coolants in the steam generators shall be greater than 70° when the pressure of either coolant in the steam generator is greater than 200 psig at all times. The Steam Generator Pressure/Temperature Limitation serves no accident mitigation function in any MODE. This LCO does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual. | Technical Requirements Manual | 10 CFR 50.59 | R |
| CTS 3.7.3.1 | 3.7.3.1 | Not used. | | | |
| CTS 3.7.3.2 R.1 | 3.7.3.2 | CTS 3.7.3.2 states that two component cooling water system (CC) loops shall be OPERABLE. It is applicable when both units are in MODES 5 or 6. The primary function of the CC System is to provide cooling water to the Residual Heat Removal (RHR) heat exchangers, but does not warrant its own LCO. If insufficient CC is available for RHR, RHR is declared inoperable and the Conditions and Actions for CC in CTS are the same as those for RHR. Unlike other Westinghouse plants, RHR does not share components with the Emergency Core Cooling System (ECCS), and thus does not play a role in DBA mitigation in MODES 1, 2, 3, and 4. Other plants use CC for DBA mitigation functions other than ECCS in MODES 1, 2, 3, and 4, but the CC system at NAPS does not. This makes the CC System at NAPS different from the CC System described in the ISTS, and retaining the CC requirement for MODES 5 and 6 for supporting RHR or any other components not assumed in DBA analysis is inappropriate. This LCO does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual. | Technical Requirements Manual | 10 CFR 50.59 | R |

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Change Category:
1 - Removing Details of System Design and System Description, Including Design Limits
2 - Removing Descriptions of System Operation
3 - Removing Procedural Details for Meeting TS Requirements and Related Reporting
4 - Removing Performance Requirements for Indication-Only Instrumentation and Alarms
5 - Removal of Cycle-Specific Parameter Limits from the Technical Specifications to the Core Operating Limits Report

Table L – Less Restrictive Changes
ITS Section 3.7 – Plant Systems

| DOC No. | Description of Change | ITS Requirement | CTS Requirement | Change Type |
|---|---|---|---|---|
| 3.7.19 L.1 | CTS 4.7.3.1.b requires each component cooling water pump to be tested in accordance with Specification 4.0.5. ITS 3.7.19 does not contain this Surveillance. This changes the CTS by deleting a Surveillance Requirement. | None | 4.7.3.1.b | 5 |

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Change Category:
1 - Relaxation of LCO Requirements
2 - Relaxation of Applicability
3 - Relaxation of Completion Time
4 - Relaxation of Required Action
5 - Deletion of Surveillance Requirement
6 - Relaxation Of Surveillance Requirement Acceptance Criteria
7 - Relaxation Of Surveillance Frequency
8 - Deletion of Reporting Requirements

Note 1 - Certain Less Restrictive changes for Section 3.7 did not fall into the categories used for the other Section. A specific Determination of No Significant Hazards Consideration was written for each non-categorized Less Restrictive Change in Section 3.7.

| DOC No. | Description of Change | ITS Requirement | CTS Requirement |
|---|---|---|---|
| 3.8.1 A.2 | CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path." Each unit's service water system requirements consist of the above requirements for either unit operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the MCR/ESGR and Auxiliary Building exhaust ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS LCO 3.8.1 Action J states, "Two required LCO 3.8.1.c EDGs inoperable, declare shared components inoperable immediately." This changes the CTS by specifically stating the requirement in the ITS Action J.<br><br>The purpose of the proposed change is to structure the existing electrical requirements for the shared components in the ITS by placing electrical requirements in ITS section 3.8. This change is acceptable because the AC sources requirements for the SW, CC, MCR/ESGR Emergency Habitability System, and ECCS Pump Room Exhaust Cleanup System functions are contained in the electrical requirement section of the unit's Technical Specifications. The additional requirements of the fans in the ventilation specifications are addressed by more restrictive discussion of changes to the CTS requirements. The additional electrical requirements are classified as administrative because of the systems may require electrical power from both units in order to satisfy the individual safety function. This change is designated as administrative because it does not result in a technical change to the CTS. | 3.8.1, Required Action J | CTS LCO 3.7.4.1 |

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| DOC No. | Description of Change | ITS Requirement | CTS Requirement |
|---|---|---|---|
| 3.8.1 A.9 | CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path." Each unit's service water system specification applies when either unit is operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS LCO 3.8.1, "AC Sources," part c states, "One qualified circuit between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System and one EDG capable of supplying the onsite Class 1E AC power distribution subsystem on the other unit for each required shared component; and." This change maintains the CTS requirements for AC sources in the ITS format.<br><br>The purpose of the proposed change is to structure the existing electrical requirements for the shared components in the ITS by placing electrical requirements in ITS Section 3.8. This change is acceptable because the AC sources requirements for the SW, CC, MCR/ESGR Emergency Habitability System, and ECCS Pump Room Exhaust Cleanup System functions are moved to the electrical requirement section of the unit's Technical Specifications. The additional requirements of the fans in the ventilation specifications are addressed by more restrictive discussion of changes to the CTS requirements. The movement of the electrical requirements is classified as administrative because of the systems may require electrical power from both units in order to satisfy the individual safety function. This change is designated as administrative because it does not result in a technical change to the CTS. | LCO 3.7.10,<br>LCO 3.7.12,<br>LCO 3.7.19<br>LCO 3.8.1.c | LCO 3.7.4.1 |

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| DOC No. | Description of Change | ITS Requirement | CTS Requirement |
|---|---|---|---|
| 3.8.1 A.19 | CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path." Each unit's service water system specification applies when either unit is operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS 3.8.1Action F states if the required offsite circuit and EDG on the other unit that support a required shared components become inoperable, the supported shared components will be declared inoperable immediately. The differences between the requirements for the shared systems of the CTS and the ITS are addressed in ITS LCOs 3.7.8, 3.7.10, 3.7.12, and 3.7.19. This change maintains the CTS requirements in the ITS format.<br><br>This change is acceptable because the technical requirements of the CTS are maintained in the ITS. If a shared components is required to be OPERABLE for this unit and the pump or fan is powered from the other unit's electrical system, the loss of the normal and emergency AC source would required the pump or fan to be declared inoperable and appropriate Action for the affected system to be entered. This change is designated as administrative because it does not result in a technical change to the CTS. | LCO 3.7.10,<br>LCO 3.7.12<br>LCO 3.7.19<br>3.8.1, Action F | LCO 3.7.4.1 |

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Table A – Administrative Changes
ITS Section 3.8 – Electrical Power Systems

| DOC No. | Description of Change | ITS Requirement | CTS Requirement |
|---|---|---|---|
| 3.8.9 A.5 | CTS LCO 3.7.4.1 requires the normal and emergency power supplies to be OPERABLE for the required Service Water pumps. The Control Room ventilation fans, the Auxiliary Building central exhaust fans, and the Component Cooling Water (CC) pumps may require electrical power from the other unit for the pumps and fans to be considered OPERABLE. ITS LCO 3.8.9, Actions, and Surveillance Requirements are modified to include the electrical distribution systems on the other unit that are required to support shared components that are powered for the other unit. This change maintains the CTS requirements in the ITS format.<br><br>The change is acceptable because these requirements ensure the electrical distribution systems that are needed to support shared components on the other unit, needed for this unit, are maintained OPERABLE. This is the intent of the CTS requirements in LCO 3.7.4.1 for the required shared components are to ensure all electrical system necessary to power these components. This change is designated as administrative because it does not result in a technical change to the CTS. | LCO 3.8.9 | LCO 3.7.4.1 |
| 3.8.10 A.1 | In the conversion of the North Anna 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. 1, "Standard Technical Specifications-Westinghouse Plants" (ISTS).<br><br>These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS. | Various | Various |
| 3.8.10 A.2 | ITS 3.8.10 Required Action A.2.5 states, "Declare associated required residual heat removal subsystem(s) inoperable and not in operation." This is required with a Completion Time of "Immediately." CTS 3.8.2.2 does not specifically state this requirement. This changes the CTS by specifically requiring the RHR subsystem(s) to be declared inoperable with a loss of the associated electrical bus.<br><br>This change is acceptable because the RHR subsystem(s) would be declared inoperable under the CTS requirements. This addition does not change the technical requirements of the CTS but acts as a reminder to enter the Action for the RHR subsystem(s). This change is designated as administrative because it does not result in a technical change to the CTS. | 3.8.10, Required Action A.2.5 | None |

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| DOC No. | Description of Change | ITS Requirement | CTS Requirement | Change Type |
|---|---|---|---|---|
| 3.8.1 L.11 | CTS LCO 3.7.4.1, Service Water System – Operating, states, "Two service water loops (shared with the other unit) shall be OPERABLE with each loop consisting of two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and an OPERABLE flow path . . . ." Each unit's service water system requirements consist of the above requirements for either unit operating in MODES 1, 2, 3, or 4. CTS LCO 3.7.3.1, Component Cooling Water System – Operating, requires three component cooling water subsystems (shared with the other unit) shall be OPERABLE. This requirement must be met with either unit is in MODES 1, 2, 3, or 4. ITS LCO 3.7.10 specifies the requirements for the Main Control Room (MCR) / Emergency Switchgear Room (ESGR) Habitability System. This system requires the MCR and ESGR fans on both units to be OPERABLE in MODES 1, 2, 3, and 4 and during the movement of recently irradiated fuel assemblies. ITS LCO 3.7.12 requires the fans from the Auxiliary Building central exhaust system to be OPERABLE to support the Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System. This could require a fan powered from the other unit to be required for this unit. The SW and CC pumps and the fans from the ventilation systems are components that may be required by either or both units. Therefore, these pumps and fans are classified as "shared components," for the electrical power requirements. ITS LCO 3.8.1 Actions A, B, and C provide for an evaluation of all safety functions powered by this unit's AC sources and provide 72 hours for an inoperable offsite circuit and up to 14 days for an inoperable EDG. ITS 3.8.1 Action D for one or more offsite circuit(s), and Actions E and F for an inoperable EDG on the other unit that is needed to support a shared components. This changes the CTS by allowing a shared components to be considered OPERABLE for up to 72 hours with a required offsite circuit(s) inoperable and up to 14 days for an inoperable EDG on the other unit. | LCO 3.7.10, LCO 3.7.12, LCO 3.7.19, LCO 3.8.1 Actions A, B, C, D, E, and F | 3.7.4.1 | 4 |

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Change Category:
1 - Relaxation of LCO Requirements
2 - Relaxation of Applicability
3 - Relaxation of Completion Time
4 - Relaxation of Required Action
5 - Deletion of Surveillance Requirement
6 - Relaxation Of Surveillance Requirement Acceptance Criteria
7 - Relaxation Of Surveillance Frequency
8 - Deletion of Reporting Requirements