

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

December 7, 2001

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

Serial No.: 01-654
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)
SECTION 3.3, "INSTRUMENTATION" (TAC Nos. MB 0799 and MB 0800)

This letter transmits our response to the NRC's request for additional information (RAI) regarding 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). The NRC requested additional information regarding ITS 3.3, "Instrumentation," in a NRC letter dated October 16, 2001 (TAC Nos. MB 0799 and MB 0800). This letter also transmits minor changes to ITS Section 3.3, which are a result of internal comments.

The attachment includes each NRC question, the response to each question, and the required revisions to the original ITS license amendment request, based on the response to each question. Following the responses to the NRC's questions is a summary of the changes that are not associated with the NRC's questions, and the affected ITS submittal pages.

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

A001

cc: U.S. Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Suite 23T85
Atlanta, Georgia 30303-8931

Mr. Tommy Le
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mail Stop 12 H4
Rockville, MD 20852-2738

Mr. M. J. Morgan
NRC Senior Resident Inspector
North Anna Power Station

Commissioner (w/o attachments)
Bureau of Radiological Health
1500 East Main Street
Suite 240
Richmond, VA 23218

Mr. J. E. Reasor, Jr. (w/o attachments)
Old Dominion Electric Cooperative
Innsbrook Corporate Center
4201 Dominion Blvd.
Suite 300
Glen Allen, Virginia 23060

Attachment

**Proposed Improved Technical Specifications
Responses to Requests for Additional Information
ITS 3.3, "Instrumentation"**

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

North Anna Power Station Units 1 and 2

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.2 -1 ITS SR 3.3.2.5
STS SR 3.3.2.5
CTS Table 4.3 - 2
DOC N/A

RAI 3.3.2-1, CTS Table 4.3-2, Slave Relay Test Note (4) CTS Table 4.3-2, Note (4) is added to the STS Slave Relay testing (ITS SR 3.3.2.5) requirements. This note eliminates TS requirements to perform quarterly testing on ESFAS Slave Relays if testing could place the ESFAS instrumentation in a condition that would cause an inadvertent RPS or ESFAS actuation, adversely affect one ESF system or components in two or more ESF systems or create a reactivity, thermal or hydraulic transient.

Comment: The staff position is that NUREG-1431 requirements include all the Note 4 to SR 3.3.2.5 remedial allowances for delaying testing of slave relays by establishing appropriate remedial measures and allowed outage times for inoperable equipment (TS 3.3.2), allowances for surveillance test extensions (TS 3.0) and appropriate checks when multiple equipment inoperabilities exist (TS 5.5.15). Thus, the proposed allowance in the Note to SR 3.3.2.5 is not justified. Provide additional information to justify the proposed Note to ITS SR 3.3.2.5 is needed to maintain safety or reduce burden, or is needed due to a unique North Anna instrumentation design.

Response: The Company agrees with the Comment and provides additional information to justify the proposed Note. The Note is an allowance in the CTS requirements that reduces the regulatory burden and ensures unnecessary testing does not compromise nuclear safety.

The NRC, in the SER (TAC Numbers 73236 and 73237) for TS amendments 125 for Unit 1 and 109 for Unit 2 dated February 2, 1990, stated that the licensee has evaluated the frequency of testing and the criteria for on/off line testing. Relays have been tested during on-line quarterly and refueling frequencies. The refueling testing requirements existed previously. The requirements for the system functional testing have remained unchanged. Three criteria justify off-line only testing:

- 1.) A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation,
- 2.) The test will adversely affect two or more components in one ESF system or two or more ESF systems, and
- 3.) The test will create a transient (reactivity, thermal or hydraulic) condition on the RCS.

A relay-by-relay basis for off-line testing was justified by describing the design function, equipment actuated, operational impact and safety significance of testing. Several of the descriptions of the safety significance of testing state that there is no safety significance if the test circuit performs properly. The described impact on safety assumes a worst case scenario of the safeguards test cabinet, a failure of the blocking circuit to actually block actuation of the final equipment.

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

The staff concludes that the relay and subsequent testing evaluations appear to be complete and that the assignment of the slave relays to the three criteria is adequately justified. The proposed change states that only slave relays which do not satisfy the three criteria will be functionally tested on-line. In this analysis the licensee notes that since construction, modifications have been made which added equipment that would be actuated during testing, therefore an adequate design for testing all of the slave relays on-line does not exist.

The analysis confirms that the testing will still include coil continuity tests of the slave relays on a quarterly basis and full testing at refueling. To date, there has not been a failure of a slave relay to perform its safety function. To determine a potential failure rate, the licensee used overall failure rates for slave and auxiliary relays and divided them by the number of ESF slave relays only. The staff agrees with the licensee's conclusion that this appears to be a conservative estimate of ESF slave relay failure rates.

The licensee concluded that:

- 1) The probability of inadvertent RPS or ESF actuation,
- 2) The length of time to perform the test which disables one channel, and
- 3) Performing tests with test equipment, which may be unreliable and abnormal operation modes present a greater risk to overall plant safety than not testing ESF slave relays on-line.

The reliability of the ESF slave relays has been shown to remain high. The staff agrees with the licensee's conclusion.

The staff has concluded that, based on the reasons described above, the TS changes which allow certain ESF slave relays to be exempt from quarterly testing are acceptable. Also, the revised TS definition of the ESF slave relay test is acceptable. Finally, the licensee should continue to improve the test equipment and consider design modifications, which would allow complete testing of all ESF slave relay coils and contacts without undue risk to plant safety.

The Company wishes to maintain the allowance provided by the Note in the CTS that has been converted to the Note in ITS SR 3.3.2.5.

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.2 –2 ITS Function 6.d
STS Function 6.e
CTS Function 6.e
DOC N/A

RAI 3.3.2-2, CTS Table 3.3-3, function 6.e, Station Blackout

CTS require one channel on two buses and an allowable value time delay. ITS Table 3.3.2-1, function 6.d proposes 2 required channels per bus and no time delay on the Allowable Value. The CTS change documentation does not justify this change.

Comment: Provide a justification for the proposed CTS changes.

Response: The Company agrees with the Comment. The ITS submittal is revised to retain the CTS requirement for the number of channels per bus for the subject function. The Company disagrees with the Comment on the allowable value. The CTS does not specify any time delay for the allowable value; therefore no time delay is incorporated into the ITS requirements.

Table 3.3.2-1 (page 4 of 4)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	
6. Auxiliary Feedwater						
a. Automatic Actuation Logic and Actuation Relays	1, 2, 3	2 trains	G	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.5	NA	
b. SG Water Level—Low Low	1, 2, 3	3 per SG	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.8 SR 3.3.2.9	≥ 17%	
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Loss of Offsite Power	1, 2, 3	1 per bus, 2 buses	F	SR 3.3.2.6 SR 3.3.2.8 SR 3.3.2.9	≥ 2184 V	RAI 3.3.2-02 R6
e. Trip of all Main Feedwater Pumps	1, 2	2 per pump	H	SR 3.3.2.7 SR 3.3.2.9	NA	R6
7. Automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.5	NA	
b. Refueling Water Storage Tank (RWST) Level—Low Low	1, 2, 3, 4	4	I	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.8 SR 3.3.2.9	≥ 18.4% and ≤ 20.4%	
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
8. ESFAS Interlocks						
a. Reactor Trip, P-4	1, 2, 3	1 per train, 2 trains	F	SR 3.3.2.10	NA	
b. Pressurizer Pressure, P-11	1, 2, 3	3	J	SR 3.3.2.1 SR 3.3.2.8	≤ 2010 psig	R6
c. T _{avg} —Low Low, P-12	1, 2, 3	1 per loop	J	SR 3.3.2.1 SR 3.3.2.8	≤ 545°F	R6

Table 3.3.2-1 (page 7 of 8)
Engineered Safety Feature Actuation System Instrumentation

CTS

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT (a)
6. Auxiliary Feedwater (continued)						
(c) Safety Injection				Refer to Function 1 (Safety Injection) for all initiation functions and requirements.		
(d) Loss of Offsite Power	1,2,3	(1) per bus / 2 buses	F	SR 3.3.2.7 SR 3.3.2.8 SR 3.3.2.9	≥ 218.4 V with ≤ 0.8 sec time delay	≥ [2975] V with ≤ 0.8 sec time delay
f. Undervoltage Reactor Coolant Pump	1,2	(3) per bus	I	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	≥ [69%] bus voltage	≥ [70%] bus voltage
(e) Trip of all Main Feedwater Pumps	1,2	(2) per pump	J	SR 3.3.2.8 SR 3.3.2.9 SR 3.3.2.10	N/A ≥ [] psig	≥ [] psig
h. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	(2)	F	SR 3.3.2.1 SR 3.3.2.7 SR 3.3.2.9	≥ [20.53] [psia]	≥ [] [psia]
7. Automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.4	NA	NA
b. Refueling Water Storage Tank (RWST) Level - Low	1,2,3,4	4	I	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.4	≥ 18.4% and ≤ 20.4%	≥ [] and ≤ []
Coincident with Safety Injection				Refer to Function 1 (Safety Injection) for all initiation functions and requirements.		

bd

be

bf

New

RAI
3.3.2-2

R6

R6

(continued)

(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

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North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.2 –3 ITS Function 5 a. & b.
STS Function 5 a. & b.
CTS Table 3.3 – 3
DOC N/A

RAI 3.3.2-3, CTS Table 3.3-3, function 5.a & b, Turbine Trip and Feedwater Isolation CTS Applicable mode requirements are Modes 1, 2 and Mode 3 ###. Note ### states “Except when all MFIVs [main feedwater isolation valves], MFRVs [main feedwater regulation valves], and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” Note ### becomes ITS Table 3.3.2-1, Note (d). ITS functions 5.a and 5.b apply Note (d) to Mode 2. The CTS change documentation does not justify this change.

Comment: Provide a justification for the proposed addition of Note (e) to Mode 2.

Response: The Company agrees with the Comment. DOC A.17 has been constructed to address the CTS change.

A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

ITS

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Amendment No. 32, 221

Rev. 6

FUNCTIONAL UNIT	Required TOTAL NO OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	CONDITION ACTION	A.5
5. TURBINE TRIP & FEEDWATER ISOLATION						
5b a. Steam Generator Water Level - High-High	3/loop	2/loop	2/loop	1, 2, 3	(A.7) (D)	(M.4)
5a b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3	(A.7) (G)	(A.1)
5c c. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					
6. AUXILIARY FEEDWATER PUMP START						
a. Manual Initiation	2	1	2	1, 2, 3	(A.7)	(L.1)
6a b. Automatic Actuation Logic	2	1	2	1, 2, 3	(A.7) (G)	(A.1)
6b c. Steam Generator Water Level Low-Low	3/stm. gen.	2/stm. gen.	2/stm. gen.	1, 2, 3	(A.7) (D)	(M.4)
6c d. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					
6d e. Station Blackout	1/bus on 2 busses	1/bus on 2 busses	1/bus on 2 busses	1, 2, 3	(A.7) (F)	(A.1)
6e f. Main Feed Pump Trip	2/pump	1/pump	1/pump	1, 2	(A.7) (H)	(A.1)

RAI 3.3.2-8 R6

Proposed Note c 1, 2, 3 (A.17)

Proposed Note c 1, 2, 3 (A.17)

LA.12

LA.12

RAI 3.3.2-8 R6

RAI 3.3.2-3 R6

ITS 3.3.2 03-05-00

A.1

ITS 3.3.2

03-09-00

RAI
3.3.2-3
R6

TABLE 3.3-3 (Continued)

TABLE NOTATION

- * Trip function may be blocked in this MODE below the P-11 setpoint. ^{ABOVE}
- ** Trip function may be blocked in this MODE below the P-12 setpoint. ^{ABOVE}
- Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.
- * The provisions of Specification 3.0.4 are not applicable. ^{or all MFW pump discharge valves}

A.11
A.4
A.17
A.7
L.6 | R6

ACTION STATEMENTS

ITS
Note a
Note b
Note e

Action C

Action D

Action E

Note d

- ACTION 13 - ^{Note} With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1. ^{Provided the other train is OPERABLE}
- ACTION 14 - ^{Note} With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:
 - a. The inoperable channel is placed in the tripped condition within 72 hours.
 - b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.1.^{INSERT PROPOSED REQUIRED ACTION D.2}
- ACTION 15 - Deleted
- ACTION 16 - ^{Note} With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the blocked condition within 72 hours; one additional channel may be blocked for up to 12 hours for surveillance testing per Specification 4.3.2.1.1. ^{INSERT PROPOSED REQUIRED ACTION E.2}
- ^{INSERT PROPOSED NOTE d}

RAI
3.3.2-4
R6
A.18

M.4

M.5

L.2

A.1

RAI
3.3.2-8
R6

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 2

DIS

FUNCTIONAL UNIT	Required TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	or other Specified Modes APPLICABLE MODES	Condition ACTION	A.5
5. TURBINE TRIP & FEEDWATER ISOLATION						LA.12
5b a. Steam Generator Water Level - High-High	3/loop	2/loop	2/loop	Proposed note e 1, 2, 3 A.17	A.7 D	M.4
5a b. Automatic Actuation Logic and Actuation Relays	2	1	2	Proposed note e 1, 2, 3 A.17	B	A.1
5c c. Safety Injection (SI)		See #1 above (All SI initiating functions and requirements)				RAI 3.3.2-3 R6
6. AUXILIARY FEEDWATER PUMP START						
a. Manual Initiation	2	1	2	1, 2, 3	21	L.1
6a b. Automatic Actuation Logic	2	1	2	1, 2, 3	G	A.1
6b c. Steam Generator Water Level Low-Low	3/stm. gen.	2/stm. gen.	2/stm. gen.	1, 2, 3	D	M.4
6c d. Safety Injection (SI)		See #1 above (All SI initiating functions and requirements)			A.7	LA.12
6d e. Station Blackout	1/bus on 2 busses	1/bus on 2 busses	1/bus on 2 busses	1, 2, 3	F	A.1
6e f. Main Feed Pump Trip	2/pump	1/pump	1/pump	1, 2	H	A.1
						LA.12

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Rev 6

ITS
3.3.2
03-09-00

A.1

TABLE 3.3-3(Continued)

TABLE NOTATION

* Trip function may be blocked in this MODE below the P-11 setpoint. ^{ABOVE}

Trip function may be blocked in this MODE below the P-12 setpoint. ^{ABOVE}

Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.

* The provisions of Specification 3.0.4 are not applicable.

or all MFW pump discharge valves

ACTION STATEMENTS

RAI
3.3.2-3
R6

A.11

A.4

A.12

A.7

L.6 | R6

RAI
3.3.2-4
R6

A.18

M.4

M.5

L.2

ITS

Note a
Note b
Note c

Action C

Action D

Action E

Note d

ACTION 13 -

Note

With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1. ^{provided the other train is OPERABLE}

ACTION 14 -

Note

With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:
a. The inoperable channel is placed in the tripped condition within 72 hours.
b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.

ACTION 15 -

Deleted

INSERT PROPOSED Required Action D.2

ACTION 16 -

Note

With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the blocked condition within 72 hours; one additional channel may be blocked for up to 12 hours for surveillance testing per Specification 4.3.2.1.1.

INSERT PROPOSED Required Action E.2

INSERT PROPOSED Note d

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

The purpose of deleting the RTT for these ESFAS Functions is to set the proper testing requirements for functions. The ITS test requirements are the appropriate testing requirements for these ESFAS Functions. The test requirements of the CTS are the same as the ITS test requirements for RTT. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

RAI
3.3.2-11
RL

- A.17 CTS Table 3.3-3 for Functional Units 5.a and 5.b, Turbine Trip and Feedwater Isolation on Steam Generator (SG) Water Level – High-High and Automatic Actuation Logic and Actuation Relays, requires for each an applicability of MODES 1, 2, and 3^{###}. Notation ^{###} states, “Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” ITS Table 3.3.2 – 1 for Function 5, Turbine Trip and Feedwater Isolation, requires that Functions 5.a and 5.b, Automatic Actuation Logic and Actuation Relays and SG Water Level – High High, be OPERABLE in MODES 1, 2^(e), and 3^(e). Note ^(e) states, “Except when all Main Feedwater pump discharge valves or all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” The Main Feedwater pump discharge valves addition is addressed by DOC L.6. This changes the CTS by specifically stating the Functions 5.a and 5.b are not applicable in MODE 2 when appropriate valves are closed and provide the required safety function.

RAI
3.3.2-3
RL

The purpose of the CTS and ITS Notes are to provide an exception to the instrumentation requirements for the Feedwater Isolation function. This change is acceptable because the technical requirements of the CTS are maintained in the ITS format. Both CTS and ITS do not require instrumentation channels to be OPERABLE (i.e., not applicable) when the required equipment is in a state that performs the safety function. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.18 CTS Table 3.3-3 allows one channel of certain functional units to be bypassed for up to 4 hours to perform surveillance testing. A Note for ITS 3.3.2 Required Action C states, “One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE.” This changes the CTS by specifically stating that surveillance testing can only be performed when the remaining train is OPERABLE.

RAI
3.3.2-4
RL

The purpose of the ITS Note phrase, “provided the other train is OPERABLE,” is to remind the SR performer that there are only two trains of Automatic Actuation Logic and Actuation Relays for SI, Containment Spray, and Containment Isolation. With one train inoperable, testing the other train would disable the safety function. This change is acceptable because it restates the CTS requirements in more clearly defined terms. The CTS requirements are maintained in ITS format. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.2 –4 ITS Action C Note
STS Action C Note
CTS Action 13
DOC N/A

RAI 3.3.2-4, CTS Table 3.3-3, Action 13 CTS Action 13 states “however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1.” The ITS adds an additional restriction “provided the other train is OPERABLE.” The CTS change documentation does not justify this change.

Comment: Provide a justification for the proposed CTS changes.

Response: The Company agrees with the Comment. An administrative DOC A.18 has been constructed to justify the CTS change.

A.1

ITS 3.3.2 RAI
03-09-00 3.3.2-3
R6

TABLE 3.3-3 (Continued)

TABLE NOTATION

* Trip function may be blocked in this MODE below the P-11 setpoint.

** Trip function may be blocked in this MODE below the P-12 setpoint.

Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.

* The provisions of Specification 3.0.4 are not applicable

or all MFW pump discharge valves

ACTION STATEMENTS

ACTION 13 -

Note
With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1. (Provided the other train is OPERABLE)

ACTION 14 -

Note
With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:
a. The inoperable channel is placed in the tripped condition within 72 hours.
b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.1.

ACTION 15 - Deleted

ACTION 16 -

Note
With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the blocked condition within 72 hours; one additional channel may be blocked for up to 12 hours for surveillance testing per Specification 4.3.2.1.1.

INSERT PROPOSED REQUIRED ACTION E.2

Note d

INSERT PROPOSED NOTE d

A.11
A.4
A.17
A.7
L.6 | R6
RAI
3.3.2-4
R6
A.18

M.4

M.5

L.2

ITS
Note a
Note b
Note e

Action C

Action D

Action E

(A,1)

TABLE 3.3-3(Continued)

TABLE NOTATION

- * Trip function may be blocked in this MODE below the P-11 setpoint. ^{Above}
- ** Trip function may be blocked in this MODE below the P-12 setpoint. ^{Above}
- *** Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.
- * The provisions of Specification 3.0.4 are not applicable. ^{or all MFW pump discharge valves}

RAI
3.3.2-3
R6

(A.11)

(A.4)

(A.17)

(A.7)

(L.6) | R6

ACTION STATEMENTS

ITS
Note a
Note b
Note c

Action C

Action D

Action E

ACTION 13 - ^{Note} With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1. ^{provided the other train is OPERABLE}

RAI
3.3.2-4
R6

(A.18)

ACTION 14 - ^{Note} With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:

- a. The inoperable channel is placed in the tripped condition within 72 hours.
- b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.

(M.4)

ACTION 15 - Deleted ^{INSERT PROPOSED Required Action D.2}

ACTION 16 - ^{Note} With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the blocked condition within 72 hours; one additional channel may be blocked for up to 12 hours for surveillance testing per Specification 4.3.2.1.1.

(M.5)

^{INSERT PROPOSED Required Action E.2}

Note d

^{INSERT PROPOSED Note d}

(L.2)

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

The purpose of deleting the RTT for these ESFAS Functions is to set the proper testing requirements for functions. The ITS test requirements are the appropriate testing requirements for these ESFAS Functions. The test requirements of the CTS are the same as the ITS test requirements for RTT. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

RAI
3.3.2-11
RL

- A.17 CTS Table 3.3-3 for Functional Units 5.a and 5.b, Turbine Trip and Feedwater Isolation on Steam Generator (SG) Water Level – High-High and Automatic Actuation Logic and Actuation Relays, requires for each an applicability of MODES 1, 2, and 3^{###}. Notation ^{###} states, “Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” ITS Table 3.3.2 – 1 for Function 5, Turbine Trip and Feedwater Isolation, requires that Functions 5.a and 5.b, Automatic Actuation Logic and Actuation Relays and SG Water Level – High High, be OPERABLE in MODES 1, 2^(e), and 3^(e). Note ^(e) states, “Except when all Main Feedwater pump discharge valves or all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” The Main Feedwater pump discharge valves addition is addressed by DOC L.6. This changes the CTS by specifically stating the Functions 5.a and 5.b are not applicable in MODE 2 when appropriate valves are closed and provide the required safety function.

RAI
3.3.2-3
RL

The purpose of the CTS and ITS Notes are to provide an exception to the instrumentation requirements for the Feedwater Isolation function. This change is acceptable because the technical requirements of the CTS are maintained in the ITS format. Both CTS and ITS do not require instrumentation channels to be OPERABLE (i.e., not applicable) when the required equipment is in a state that performs the safety function. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.18 CTS Table 3.3-3 allows one channel of certain functional units to be bypassed for up to 4 hours to perform surveillance testing. A Note for ITS 3.3.2 Required Action C states, “One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE.” This changes the CTS by specifically stating that surveillance testing can only be performed when the remaining train is OPERABLE.

RAI
3.3.2-4
RL

The purpose of the ITS Note phrase, “provided the other train is OPERABLE,” is to remind the SR performer that there are only two trains of Automatic Actuation Logic and Actuation Relays for SI, Containment Spray, and Containment Isolation. With one train inoperable, testing the other train would disable the safety function. This change is acceptable because it restates the CTS requirements in more clearly defined terms. The CTS requirements are maintained in ITS format. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.2 -5 ITS

STS

CTS Table 4.3 - 2

DOC N/A

RAI 3.3.2-5, CTS Table 4.3-2, Table Note (2) CTS Table Note (2) includes details for performing train or logic functional testing, which are proposed to be relocated to the TS Bases. The note includes a 31 day test frequency. In the ITS, the functional test required by Note (2) is applied as either an Actuation Logic Test (ALT) or a Master Relay Test (MRT). In the ITS, the ALT or MRT is performed on a Staggered Test Basis. The Staggered Test Basis test frequency is a change to the CTS that is not evaluated.

Comment: Provide a justification for the proposed CTS changes.

Response: The Company agrees with the Comment. CTS Note (2) states "Each train or logic channel shall be functionally tested at least every other 31 days . . ." DOC A.19 has been constructed to justify the CTS change.

(A.1)

ITS
3.3.2
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RAI
3.3.2-9
RG

RAI
3.3.2-5
RG

TABLE 4.3-2 (Continued)

TABLE NOTATION

ITS

Note
e

- # Except when all MFIVs, MFRVs and associated bypass valves are closed and deactivated or isolated by a closed manual valve.
- (1) Manual actuation switches shall be tested at least once per 18 months during shutdown. (A.8, L.4, A.12, A.19)
 - (2) Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays. (LA.2)
 - (3) The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter. (LA.6)
 - (4) Only slave relays that do not satisfy any of the following criteria will be functionally tested:
 1. A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation.
 2. The test will adversely affect two or more components in one ESF system or two or more ESF systems. (Note in SR 3.3.2.5)
 3. The test will create a transient (reactivity, thermal, or hydraulic) condition on the RCS.
 - (5) Each train or logic channel shall be functionally tested up to and including input coil continuity testing to the ESF slave relays. (see ITS 3.3.5)

A.11

ITS 3.3.2
03-09-00

RAI
3.3.2-5
RG

RAI
3.3.2-9
RG

TABLE 4.3-2 (Continued)
TABLE NOTATION

ITS
Note
e

- # Except when all MFIVs, MFRVs and associated bypass valves are closed and deactivated or isolated by a closed manual valve.
- (1) ~~Manual actuation switches shall be tested at least once per 18 months during shutdown.~~
- (2) ~~Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays.~~
- (3) ~~The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter.~~
- (4) Only slave relays that do not satisfy any of the following criteria will be functionally tested:
 1. A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation.
 2. The test will adversely affect two or more components in one ESF system or two or more ESF systems.
 3. The test will create a transient (reactivity, thermal, or hydraulic) condition on the RCS.
- (5) ~~Each train or logic channel shall be functionally tested up to and including input coil continuity testing to the ESF slave relays.~~

A.8
L.4
A.12
A.19
LA.2
LA.6

NOTE IN
§2.3.3.2.5

SEE ITS 3.3.5

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

A.19 CTS Table 4.3 – 2 Functional Units 1.b, 2.b, 3.b.1, 3.b.2, 4.b, 5.b, and 6.b1, the Automatic Actuation Logic for SI, Containment Spray, Containment Isolation (Phases A and B), Steam Line Isolation, Turbine Trip and Feedwater Isolation, AFW pump, and the Automatic Actuation Logic and Actuation Relays for Steam Line Isolation require a monthly CHANNEL FUNCTIONAL TEST to be performed. The surveillance frequency is modified by Note (2) that states, “Each train or logic channel shall be functionally tested at least every other 31 days . . .” ITS Surveillance Requirements (SR) for the Automatic Actuation Logic and Actuation Relays for SI, Containment Spray, Containment Isolation (Phase A Isolation and Phase B Isolation), Steam Line Isolation, Turbine Trip and Feedwater Isolation, and AFW, require SRs 3.3.2.2 and 3.3.2.3 to be performed. ITS SR 3.3.2.2 requires the performance of an ACTUATION LOGIC TEST (ALT) and ITS SR 3.3.2.3 states that a MASTER RELAY TEST (MRT) must be performed. The Frequency of both ITS SRs is “31 days on a STAGGERED TEST BASIS.” This changes the CTS SR Frequency from “every other 31 days” to the ITS requirement of “31 days on a STAGGERED TEST BASIS.” The CTS testing requirements are expressed in ITS terms of ALT and MRT.

RAT
3.3.2-5
RG

The purpose of the phrase “on a STAGGERED TEST BASIS” is to provide standard means of expressing the testing requirement frequency. The testing requirements of ALT and MRT continue to require the appropriate testing requirements for each safety function’s Automatic Actuation Logic and Actuation Relays. This change is acceptable because the CTS testing requirements and frequencies are maintained in the ITS format. The change is designated as administrative change because it does not result in technical changes to the CTS requirements.

MORE RESTRICTIVE CHANGES

M.1 CTS Surveillance requirement 4.3.2.1.2 requires the testing of the ESFAS interlocks to determine OPERABILITY. The two interlocks P-11 and P-12 are required to be OPERABLE. No specific requirement is stated or implied to perform a CHANNEL CHECK for the interlocks. ITS SR 3.3.2.1 is added to the surveillance requirements for the P-11 and P-12 interlocks. This change modifies the CTS requirements for these interlocks and requires a CHANNEL CHECK to be performed every twelve hours.

This change is acceptable because the three pressurizer pressure channels providing the input to P-11 interlock and the three T_{ave} channels providing input to P-12 require a CHANNEL CHECK to be performed once per shift. Verification that the interlock status reflects the current plant conditions is prudent to be performed on a once per shift basis. This change is designated as more restrictive because the CTS do not currently require a CHANNEL CHECK to be performing for these functions.

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ITS Section 3.3, Instrumentation

3.3.2 -6 ITS Function 8.c
STS Function 8.c
CTS Table 4.3 - 2
DOC A.3

RAI 3.3.2-6: CTS Table 4.3-2, function 8.c, Reactor Trip (P-4) includes a requirement to perform a refueling frequency Channel Functional Test. This requirement is proposed to perform a Trip Actuating Device Operational Test "once per reactor trip breaker cycle" in the ITS. The proposed ITS test and test frequency for P-4 are a change to the CTS that is not evaluated.

Comment: Provide a justification for the proposed CTS changes.

Response: The Company agrees with the Comment. DOC M.8 has been constructed that justifies the change to the CTS requirement.

A.1

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NORTH ANNA - UNIT 1

ITS

FUNCTIONAL UNIT

CHANNEL CHECK

CHANNEL CALIBRATION

CHANNEL FUNCTIONAL TEST
A.3

SLAVE RELAY TEST

MODES IN WHICH SURVEILLANCE REQUIRED

A.8

7. LOSS OF POWER
4.16 KV Emergency Bus

a. Loss of Voltage

N.A.

R

Q^(S)

N.A.

1, 2, 3, 4

b. Degraded Voltage

N.A.

R

Q^(S)

N.A.

1, 2, 3, 4

see ITS 3.3.5

8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS

8b a. Pressurizer Pressure, P-11

3.3.2.1
N.A. M.1

3.3.2.8
A.1

R A.13

N.A.

1, 2, 3

8c b. Low - Low T_{avg}, P-12

3.3.2.1
N.A. M.1

3.3.2.8
A.1

R A.13

N.A.

1, 2, 3

8a c. Reactor Trip, P-4

N.A.

N.A.

3.3.2.10
R M.8

N.A.

1, 2, 3

A.8

RAI
3.3.2-6
R6

M.3

7. Insert Proposed SRs for Function 7

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R6

ITS
3.3.2
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A.1

TABLE 4.3-2 (CONTINUED)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NORTH ANNA - UNIT 2

ITS

FUNCTIONAL UNIT

CHANNEL CHECK

CHANNEL CALIBRATION

CHANNEL FUNCTIONAL TEST
A.13 TA00T

SLAVE RELAY TEST

MODES IN WHICH SURVEILLANCE REQUIRED

A.8

7.	LOSS OF POWER 4.16 KV Emergency Bus					
a.	Loss of Voltage	N.A.	R	Q ⁽⁵⁾	N.A.	1, 2, 3, 4
b.	Degraded Voltage	N.A.	R	Q ⁽⁵⁾	N.A.	1, 2, 3, 4

see ITS 3.3.5

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8.	ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
8b	a. Pressurizer Pressure, P-11	3.3.2.1 N.A. M.1		3.3.2.8 A.11	N.A.	1, 2, 3
8c	b. Low-Low T _{avg} , P-12	3.3.2.1 N.A. M.1		3.3.2.8 A.11	N.A.	1, 2, 3
8a	c. Reactor Trip, P-4	N.A.	N.A.	3.3.2.10 M.8	N.A.	1, 2, 3

A.8

RAI
3.3.2-C
RC

M.3

7. Insert proposed SRs for Function 7

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ITS 3.3.2
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DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

at any frequency. The ITS 3.3.2 Function for the start of the AFW pump on Loss of Offsite Power (6.d) requires the performance of SRs 3.3.2.8 (CHANNEL CALIBRATION) and 3.3.2.9 (ESFAS RESPONSE TIMES) every 18 months, and 3.3.2.6 (TADOT) every 92 days. The TADOT is modified by a Note that states, "Verification of relay setpoints not required." This changes the CTS by requiring the TADOT to be performed every 92 days.

This change is acceptable because the verification that the signal from the Loss of Offsite Power will start the AFW pumps should be periodically tested to ensure OPERABILITY. A testing frequency of 92 days is adequate based on industry operating experience, considering the instrument reliability and operating history. This change is designated as more restrictive because the testing requirements have been increased from the CTS requirements.

- M.7 CTS requirements in Table 3.3-3 list the Allowable Values for ESFAS Functions and Interlocks. The Allowable Values for the following function are stated as: Safety Injection (SI) on Containment Pressure High ≤ 18.5 psia, SI on Pressurizer Pressure Low-Low ≥ 1755 psig, SI on Steam Flow in Two Steam Lines Coincident with T_{ave} Low-Low or Steam Line Pressure Low \leq a ΔP corresponding to 44% of full steam flow increasing to 111.5% at full load, Containment Spray on Containment Pressure High-High ≤ 29.25 psia, Steam Line Isolation on Containment Pressure Intermediate High-High ≤ 19.3 psia, and Steam Line Isolation on Steam Flow in Two Steam Lines Coincident with T_{ave} Low-Low or Steam Line Pressure Low \leq a ΔP corresponding to 44% of full steam flow increasing to 111.5% at full load. ITS requirements in Table 3.3.2-1 lists the Allowable Values for the ESFAS Functions and Interlock as the following: SI on Containment Pressure High ≤ 17.7 psia, SI on Pressurizer Pressure Low-Low ≥ 1770 psig, SI on Steam Flow in Two Steam Lines Coincident with T_{ave} Low-Low or Steam Line Pressure Low \leq a ΔP corresponding to 44% of full steam flow increasing to 111% at full load, Containment Spray on Containment Pressure High-High ≤ 28.45 psia, Steam Line Isolation on Containment Pressure Intermediate High-High ≤ 18.5 psia, and Steam Line Isolation on Steam Flow in Two Steam Lines Coincident with T_{ave} Low-Low or Steam Line Pressure Low \leq a ΔP corresponding to 42 % of full steam flow increasing to 111% at full load. This changes the CTS Allowable Values for these functions to more restrictive values in the ITS Allowable Values. IR6

The purpose of these changes for the listed functions are to align the ITS Allowable Values by using a consistent setpoint methodology. These changes are acceptable because the ITS Allowable Values are consistent with the methodology used for all ESFAS Functions. These changes are designated as more restrictive because the ITS Allowable Values are more restrictive than the CTS Allowable Values.

- M.8 CTS Table 4.3 – 2 for Functional Unit 8.c, Engineered Safety Feature Actuation System Interlock Reactor Trip (P – 4), requires the performance of a CHANNEL RAE
3.3.2-6
R6

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

FUNCTIONAL TEST every refueling (R). ITS Function 8.a, ESFAS Interlock, Reactor Trip (P – 4), requires the performance of SR 3.3.2.10. This SR requires the performance of a TADOT at a frequency of once per reactor trip breaker (RTB) cycle. The SR is modified by a Note that states, "Verification of setpoint not required." This changes the CTS by requiring the performance of the TADOT each time the reactor trip breaker is cycled instead of one per refueling cycle.

RAT
3.3.2-6
R6

The purpose of the ITS SR 3.3.2.10 is to ensure the verification of the P-4 interlock on each cycle of the RTBs. This change is acceptable because verifying the OPERABILITY of the P-4 interlock ensures the proper operation of the Reactor Trip System each time the interlock is required to perform its required function. This change is designated as more restrictive because the testing frequency has been increased from the CTS requirements.

REMOVED DETAIL CHANGES

LA.1 (Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Problems) CTS LCO 3.3.2.1 and Action a contain information about the ESFAS channels and interlocks setpoint requirements. The LCO states the setpoint will be set consistent with the Trip Setpoints listed in Table 3.3-4. Action a requires the setpoint to be set more conservatively than the value listed in the Allowable Value column of the same table in order for the function to be considered OPERABLE. ITS 3.3.2 does not contain this information. This changes the CTS by moving the information from the Specification to the ITS Bases.

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

RAT
3.3.2-14
R6

LA.2 (Type 1 – Removing Details of System Design and System Description, Including Design Limits) CTS Table 4.3-2 specifies a requirement to perform a CHANNEL FUNCTIONAL TEST for the automatic actuation logic on various ESF functions on a monthly basis. The frequency (M) is modified by notation (2) which states, "Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays." ITS SRs 3.3.2.2 and 3.3.2.3 require the performance of the ACTUATION LOGIC TEST and the

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3.3.2 -7 ITS Note b
STS Note c
CTS Table 3.3-2
DOC A.4

RAI 3.3.2-7: Comment: It appears that DOC A.4 should include a discussion of CTS changes to Safety Injection. Delete any reference and discussion to Note (d) and replace the justification paragraph in DOC A.4 with the discussion from DOC A.11.

Response: The Company agrees with the Comment. DOC A.4 has been modified to address the administrative change of the CTS.

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

- A.4 CTS Functional Units 1.f and 4.d of Table 3.3-3 specifies, "Steam Flow in Two Steam Lines – High Coincident with either T_{ave} – Low Low or Steam Line Pressure – Low," for Safety Injection (SI) and Steam Line Isolation (SLI) are required to be OPERABLE in MODES 1, 2, 3^{##}. The notation ^{##} states, "Trip function may be blocked in this MODE below the P-12 setpoint." ITS Table 3.3.2-1 requires the High Steam Flow in Two Steam Lines Coincident with T_{ave} – Low Low function for SI and SLI to be OPERABLE in MODES 1, 2 and 3. MODES 2 and 3 are modified by Note ^(b) that states, "Above the P-12 (T_{ave}-Low Low) interlock." This changes the CTS by providing a clarification for the functional requirements.

RAI
3.3.2-7
R6

This change is acceptable because the ITS requirement states the applicability in the terms of when the function is required to be OPERABLE. CTS stated the requirement in terms of an exception and did not state the specific applicability requirements. The change is designated as administrative change because it does not result in technical changes to the CTS requirements.

- A.5 CTS Table 3.3-3 provides the requirements for the ESFAS instrumentation functions. The table's columns list the name of the function, total number of channels, channels to trip, minimum number of OPERABLE channels, applicable MODES, and associated Actions. ITS Table 3.3.2-1 is constructed from the requirements of CTS Table, but with modifications. The ITS Table requirements list the name of the function, applicable MODES or other specified Conditions, required channels, Conditions, Surveillance Requirements, and Allowable Values. The "Channels to Trip" and "Minimum Channels OPERABLE" columns are addressed by DOC LA.12. A separate DOC addresses any technical change to the CTS Table 3.3-3. This changes the CTS Table by requiring different information in the ITS.

RAI
3.3.2-8
R6

This change is acceptable because it maintains the technical requirements of the CTS with the conversion to the ITS. The required channels' column units incorporates the channel requirements of the instrumentation function formerly provided by the CTS column of total number of channels. This requires a function, with the reactor being operated in specific MODES or specific conditions, to have a number of channels OPERABLE. If the number of OPERABLE channels is less than the required, the ITS Condition (formally the CTS Action) must be entered. The addition of specific conditions in the ITS that were in the CTS are made with notes, which specify modifications to Actions or applicability for a function. With these modifications to the table, it is the intent of this change to not modify any technical requirement, but rather to present the information in a more logical manner. Any technical change to a function is addressed by a separate item DOC. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.6 CTS Table 3.3-3 for Functional Unit 3, Containment Isolation Phase 'A', states the function is initiated from safety injection automatic actuation logic, in addition to manual initiation. ITS requirement in Table 3.3.2-1 states manual, automatic

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ITS Section 3.3, Instrumentation

3.3.2 -8 ITS N/A
STS N/A
CTS Table 3.3 - 2
DOC A.5

RAI 3.3.2-8: Comment: The CTS discussion of "channels to trip" is provided in the TS Bases. Provide an LA-DOC justification for this change to CTS.

Response: The Company agrees with the Comment. A less restrictive removal of details DOC LA.12 justifies the movement of the information to the UFSAR. DOC A.5 has been modified to address the administrative change of the CTS columns.

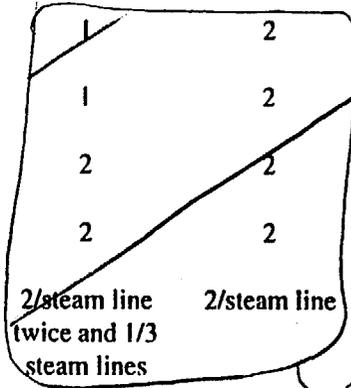
A.1

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

ITS	FUNCTIONAL UNIT	Required TOTAL NO OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES ^{or other specified condition}	Condition ACTION	A.5
1	1. SAFETY INJECTION						
1a	a. Manual Initiation	2	1	2	1, 2, 3, 4	(B) (B)	(A.1)
1b	b. Automatic Actuation	2	1	2	1, 2, 3, 4	(B) (C)	(A.1)
1c	c. Containment Pressure - High	3	2	2	1, 2, 3	(B) (D)	(M.4)
1d	d. Pressurizer Pressure - Low-Low	3	2	2	Proposed Abt. a (A.1) 1, 2, 3	(B) (D)	(M.4)
1e	e. Differential Pressure Between Steam Lines - High	3/steam line	2/steam line twice and 1/3 steam lines	2/steam line	1, 2, 3	(B) (D) (A.7)	(M.4)



LA, 12

RAI
3.3.2-8
R6

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A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

ITS

FUNCTIONAL UNIT

Required
TOTAL NO
OF CHANNELS

CHANNELS
TO TRIP

MINIMUM
CHANNELS
OPERABLE

or other
specified
conditions
APPLICABLE
MODES

Proposed note b
1, 2, 3 (A.4)

Condition
ACTION

A.5

1f/g

f. Steam Flow in Two
Steam Lines - High

2/steam line

1/steam line
any 2 steam
lines

1/steam line

14 D M.4

COINCIDENT WITH EITHER

1f

T_{avg} - Low-Low

1 T_{avg}/loop

1 T_{avg} any 2
loops

1 T_{avg} any 2
loops

Proposed note b
1, 2, 3 (A.4)

14 D M.4

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5

OR, COINCIDENT WITH
Steam Line Pressure - Low

1 pressure/
line

1 pressure
any 2 lines

1 pressure
any 2 lines

Proposed note b
1, 2, 3 (A.4)

14 D M.4

A.7

L4.12

RAI
3.3.2-8
RG

ITS 3.3.2
3.3.2-8

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A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

ITS

FUNCTIONAL UNIT

Required TOTAL NO OF CHANNELS

CHANNELS TO TRIP

MINIMUM CHANNELS OPERABLE

Other Special Condition APPLICABLE MODES

Condition ACTION

A.15

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- 2 2. CONTAINMENT SPRAY
- 2a a. Manual
- 2b b. Automatic Actuation Logic
- 2c c. Containment Pressure - High-High

	EA.11	1 set	2 sets
2a	2 sets / Trans 2 switches/set Trans	1 set	2 sets
2b	2	1	2
2c	4	2	3
3. CONTAINMENT ISOLATION			
3a	a. Phase "A" Isolation		
3a1	1) Manual	1	2
3a2	2) From Safety Injection	1	2
3a3	Automatic Actuation Logic SEE FUNCTION 1 for all initiation function and requirements		
3b	b. Phase "B" Isolation		
3b1	1) Manual see function 2.a for all functions and requirements 2 sets 2 switches/set	1 set	2
3b2	2) Automatic Actuation Logic	1	2
3b3	3) Containment Pressure - High-High see function 2.c for all functions and requirements	2	3

1, 2, 3, 4
1, 2, 3, 4
1, 2, 3

(X) (B) (A.1)
(X) (C) (A.1)
(X) (A.7) (E) (M.5)

1, 2, 3, 4
1, 2, 3, 4

(X) (B) (A.1)
(X) (C) (A.1)

~~1, 2, 3, 4~~ 18

(A.14)

1, 2, 3, 4

(X) (C)

(A.1)

~~1, 2, 3~~ 16

(A.15)

RAI
3.3.2-8
RG

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ITS 3.3.2

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(A.1)

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

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ITS	FUNCTIONAL UNIT	Required TOTAL NO OF CHANNELS	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	Condition ACTION	A.5
4	STEAM LINE ISOLATION					
4a	a. Manual	2/steam line	1/steam line	2/steam line	(L1,2) Proposed noted 1, 2, 3 (L1,2) Proposed noted 1, 2, 3 (L1,2) Proposed noted 1, 2, 3 Proposed noted 1, 2, 3 (L1,2)	(F) (A.1)
4b	b. Automatic Actuation Logic	2	1	2	(L1,2) Proposed noted 1, 2, 3 (L1,2) Proposed noted 1, 2, 3 Proposed noted 1, 2, 3 (L1,2)	(G) (A.1)
4c	c. Containment Pressure - Intermediate High-High	3	2	2	(L1,2) Proposed noted 1, 2, 3 Proposed noted 1, 2, 3 (L1,2)	(D) (M.4)
4d	d. Steam Flow in Two Steam Lines - High	2/steam line	1/steam line any 2 steam lines	1/steam line	(L1,2) Proposed noted 1, 2, 3 (L1,2)	(D) (M.4)
COINCIDENT WITH EITHER						
4d	T _{avg} - Low-Low	1 T _{avg} /loop	1 T _{avg} any 2 loops	1 T _{avg} any 2 loops	(L1,2) Proposed noted 1, 2, 3 (L1,2)	(D) (M.4)
OR, COINCIDENT WITH						
4e	Steam Line Pressure - Low	1 pressure/ line	1 pressure any 2 lines	1 pressure any 2 lines	(L1,2) Proposed noted 1, 2, 3 (L1,2)	(D) (M.4)

RAI
3.3.2-8
R6

R6

ITS 3.3.2
03-09-00

(A.7)

(LA.12)

A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

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FUNCTIONAL UNIT	Required TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES (or other specified conditions)	CONDITION ACTION	A.5
5. TURBINE TRIP & FEEDWATER ISOLATION						
5b a. Steam Generator Water Level - High-High	3/loop	2/loop	2/loop	1, 2, 3	(D)	M.4
5a b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3	(G)	A.1
5c c. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					
6. AUXILIARY FEEDWATER PUMP START						
a. Manual Initiation	2	1	2	1, 2, 3		L.1
6a b. Automatic Actuation Logic	2	1	2	1, 2, 3	(G)	A.1
6b c. Steam Generator Water Level Low-Low	3/stm. gen.	2/stm. gen.	2/stm. gen.	1, 2, 3	(D)	M.4
6c d. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					
6d e. Station Blackout	1/bus on 2 busses	1/bus on 2 busses	1/bus on 2 busses	1, 2, 3	(F)	A.1
6e f. Main Feed Pump Trip	2/pump	1/pump	1/pump	1, 2	(H)	A.1

RAI 3.3.2-8 R6

Proposed Note c 1, 2, 3 A.17

Proposed Note c 1, 2, 3 A.17

LA.12

LA.12

RAI 3.3.2-8 R6

RAI 3.3.2-3 R6

ITS 3.3.2 03-05-00

A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 1

ITS

FUNCTIONAL UNIT

Required
TOTAL NO.
OF CHANNELS

CHANNELS
TO TRIP

MINIMUM
CHANNELS
OPERABLE

Or other
Specified
Condition
APPLICABLE
MODES

Condition
ACTION

A.5

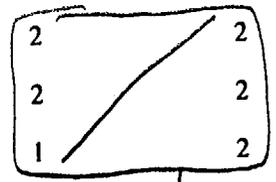
FUNCTIONAL UNIT	Required TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Or other Specified Condition APPLICABLE MODES	Condition ACTION
7. LOSS OF POWER					
a. 4.16 Kv Emergency Bus Undervoltage (Loss of Voltage)	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	19*
b. 4.16 Kv Emergency Bus Undervoltage (Grid Degraded Voltage)	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	19*

<see ITS 3.3.5>

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3/4 3-20a

FUNCTIONAL UNIT	Required TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Or other Specified Condition APPLICABLE MODES	Condition ACTION
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	J A.10
b. Low-Low T _{avg} , P-12	3	2	2	1, 2, 3	J A.10
c. Reactor Trip, P-4	2	1	2	1, 2, 3	F A.1



LA.12

RAI
3.3.2-8
R6

J | A.10
J | A.10
F | A.1

M.3

insert proposed Automatic Swopover to Containment Sump Function

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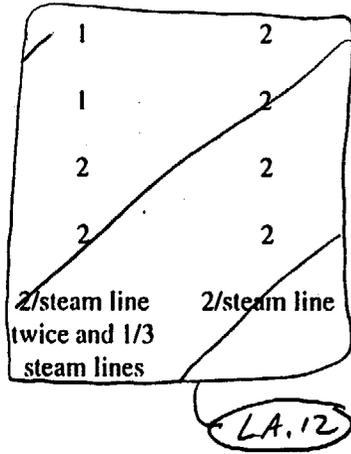
ITS 3.3.2

A.1

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required TOTAL NO OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Other Specified Condition APPLICABLE MODES	Condition ACTION	A.5
1	I. SAFETY INJECTION						
1a	a. Manual Initiation	2	1	2	1, 2, 3, 4	(B)	(A.1)
1b	b. Automatic Actuation	2	1	2	1, 2, 3, 4	(C)	(A.1)
1c	c. Containment Pressure - High	3	2	2	1, 2, 3	(D)	(M.4)
1d	d. Pressurizer Pressure - Low-Low	3	2	2	1, 2, 3 <i>Proposed note A</i>	(D)	(M.4)
1e	e. Differential Pressure Between Steam Lines - High	3/steam line	2/steam line twice and 1/3 steam lines	2/steam line	1, 2, 3	(D) (A.7)	(M.4)



RAI
3.3.2-8
R6

NORTH ANNA - UNIT 2

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ITS 3.3.2
03-09-00

A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 2

FUNCTIONAL UNIT	Required TO A END OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Other Specified Conditions APPLICABLE MODES	Common ACTION	A.5
ITS 14/3 f. Steam Flow in Two Steam Lines - High	2/steam line	1/steam line any 2 steam lines	1/steam line	Proposed Note b 1, 2, 3 A.4	D	M.4
1f COINCIDENT WITH EITHER T _{avg} - Low-Low	1 T _{avg} /loop	1 T _{avg} any 2 loops	1 T _{avg} any 2 loops	Proposed note b 1, 2, 3 A.4	D	M.4
1g OR, COINCIDENT WITH Steam Line Pressure - Low	1 pressure/line	1 pressure any 2 lines	1 pressure any 2 lines	Proposed Note b 1, 2, 3 A.4	D A.17	M.4

LA.12

RAI
3.3.2-8
R6

ITS
3.3.2
03-09-00

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A.1

RAI
3.3.2-8
R6

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 2

ITS

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Amendment No. 202

Rev 10

FUNCTIONAL UNIT	Required TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Other Specified Conditions APPLICABLE MODES	CONDITION ACTION	A.5
2. CONTAINMENT SPRAY						
2a. Manual	2 sets <i>Per train (A.11)</i> 2 switches/set	1 set	2 sets	1, 2, 3, 4	18 B	A.1
2b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13 C	A.1
2c. Containment Pressure - High-High	4	2	3	1, 2, 3	16* E	M.15
3. CONTAINMENT ISOLATION						
3a. Phase "A" Isolation						
3a1. 1) Manual	2	1	2	1, 2, 3, 4	18 B	A.1
3a2. 2) From Safety Injection Automatic Actuation Logic	2 <i>See Function 1 for all initiation function and requirements</i>	1	2	1, 2, 3, 4	13 C	A.1
3b. Phase "B" Isolation						
3b1. 1) Manual	2 sets <i>See Function 2.1a for all function and requirements</i> 2 switches/set	1 set	2	1, 2, 3, 4	18	A.14
3b2. 2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13 C	A.1
3b3. 3) Containment Pressure - High-High	<i>See Function 2E for all functions and requirements</i>	2	3	1, 2, 3	16*	A.15

LA12

3.3.2
03-09-00
ITS

(A.1)

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

NORTH ANNA - UNIT 2

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Rev 6

FUNCTIONAL UNIT	TOTAL NO OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Other specified conditions applicable MODES	CONDITION ACTION	A.5
<u>ITS</u>						
4 4. STEAM LINE ISOLATION						
4a a. Manual	2/steam line	1/steam line	2/steam line	L.2 Proposed noted 1, 2, 3	(2) (E)	(A.1)
4b b. Automatic Actuation Logic	2	1	2	L.2 Proposed noted 1, 2, 3	(2) (G)	(A.1)
4c c. Containment Pressure - Intermediate High-High	3	2	2	L.2 Proposed noted 1, 2, 3	(2) (D)	(M.4)
4d/c d. Steam Flow in Two Steam Lines - High	2/steam line	1/steam line any 2 steam lines	1/steam line	Proposed noted 1, 2, 3 L.2	(2) (D)	(M.4)
COINCIDENT WITH EITHER						
4d T _{avg} - Low-Low	1 T _{avg} /loop	1 T _{avg} any 2 loops	1 T _{avg} any 2 loops	Proposed noted 1, 2, 3 L.2	(2) (D)	(M.4)
OR, COINCIDENT WITH						
4e Steam Line Pressure - Low	1 pressure/line	1 pressures any 2 lines	1 pressure any 2 lines	Proposed noted 1, 2, 3 L.2	(2) (D)	(M.4)

RAI 3.3.2-8 R6

L.2 Proposed noted 1, 2, 3

L.2 Proposed noted 1, 2, 3

L.2 Proposed noted 1, 2, 3

Proposed noted 1, 2, 3 L.2

Proposed noted 1, 2, 3 L.2

Proposed noted 1, 2, 3 L.2

LA.12

R6

03-09-00

ITS 3.3.2

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A.1

RAI 3.3.2-8 R6

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	Required TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	or other Specialized Conditions APPLICABLE MODES	Condition ACTION	A.5
5. TURBINE TRIP & FEEDWATER ISOLATION						LA.12
5b a. Steam Generator Water Level - High-High	3/loop	2/loop	2/loop	Proposed note e 1, 2, 3 A.17	A.7 D	M.4
5a b. Automatic Actuation Logic and Actuation Relays	2	1	2	Proposed note e 1, 2, 3 A.17	20 B	A.1
5c c. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					RAI 3.3.2-3 R6
6. AUXILIARY FEEDWATER PUMP START						
a. Manual Initiation	2	1	2	1, 2, 3	21	L.1
6a b. Automatic Actuation Logic	2	1	2	1, 2, 3	20 G	A.1
6b c. Steam Generator Water Level Low-Low	3/stm. gen.	2/stm. gen.	2/stm. gen.	1, 2, 3	14 D	M.4
6c d. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)				A.7	LA.12
6d e. Station Blackout	1/bus on 2 busses	1/bus on 2 busses	1/bus on 2 busses	1, 2, 3	21 F	A.1
6e f. Main Feed Pump Trip	2/pump	1/pump	1/pump	1, 2	17 H	A.1
						LA.12

(A.1)

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	Required TOTAL NO OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES <small>or other Specified Condition</small>	CONDITION ACTION
-----------------	-------------------------------------	---------------------	---------------------------------	--	---------------------

(A.5)

NORTH ANNA - UNIT 2
ITS

7. LOSS OF POWER

a. 4.16 Kv Emergency Bus Undervoltage (Loss of Voltage)	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	19*
b. 4.16 Kv Emergency Bus Under Voltage (Grid Degraded Voltage)	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	19*

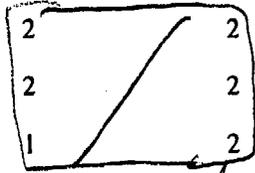
← see ITS 3,3,5

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8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS

8b a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	20 J
8c b. Low-Low T _{avg} , P-12	3	2	2	1, 2, 3	20 J
8a c. Reactor Trip, P-4	2	1	2	1, 2, 3	21 F



20 J | (A.10)
 20 J | (A.10)
 21 F | (A.1)
 LA.12

(M.3)

7. Insert proposed Automatic Swapper to Containment Sump Function

RAI
3.3.2-8
R6

ITS
3.3.2
03-09-00

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DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

- A.4 CTS Functional Units 1.f and 4.d of Table 3.3-3 specifies, "Steam Flow in Two Steam Lines – High Coincident with either T_{ave} – Low Low or Steam Line Pressure – Low," for Safety Injection (SI) and Steam Line Isolation (SLI) are required to be OPERABLE in MODES 1, 2, 3^{##}. The notation ^{##} states, "Trip function may be blocked in this MODE below the P-12 setpoint." ITS Table 3.3.2-1 requires the High Steam Flow in Two Steam Lines Coincident with T_{ave} – Low Low function for SI and SLI to be OPERABLE in MODES 1, 2 and 3. MODES 2 and 3 are modified by Note ^(b) that states, "Above the P-12 (T_{ave} -Low Low) interlock." This changes the CTS by providing a clarification for the functional requirements.

RAI
3.3.2-7
R6

This change is acceptable because the ITS requirement states the applicability in the terms of when the function is required to be OPERABLE. CTS stated the requirement in terms of an exception and did not state the specific applicability requirements. The change is designated as administrative change because it does not result in technical changes to the CTS requirements.

- A.5 CTS Table 3.3-3 provides the requirements for the ESFAS instrumentation functions. The table's columns list the name of the function, total number of channels, channels to trip, minimum number of OPERABLE channels, applicable MODES, and associated Actions. ITS Table 3.3.2-1 is constructed from the requirements of CTS Table, but with modifications. The ITS Table requirements list the name of the function, applicable MODES or other specified Conditions, required channels, Conditions, Surveillance Requirements, and Allowable Values. The "Channels to Trip" and "Minimum Channels OPERABLE" columns are addressed by DOC LA.12. A separate DOC addresses any technical change to the CTS Table 3.3-3. This changes the CTS Table by requiring different information in the ITS.

RAI
3.3.2-8
R6

This change is acceptable because it maintains the technical requirements of the CTS with the conversion to the ITS. The required channels' column units incorporates the channel requirements of the instrumentation function formerly provided by the CTS column of total number of channels. This requires a function, with the reactor being operated in specific MODES or specific conditions, to have a number of channels OPERABLE. If the number of OPERABLE channels is less than the required, the ITS Condition (formally the CTS Action) must be entered. The addition of specific conditions in the ITS that were in the CTS are made with notes, which specify modifications to Actions or applicability for a function. With these modifications to the table, it is the intent of this change to not modify any technical requirement, but rather to present the information in a more logical manner. Any technical change to a function is addressed by a separate item DOC. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.6 CTS Table 3.3-3 for Functional Unit 3, Containment Isolation Phase 'A', states the function is initiated from safety injection automatic actuation logic, in addition to manual initiation. ITS requirement in Table 3.3.2-1 states manual, automatic

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

3.3.2-1 for function 2.a, Containment Spray Manual Actuation, states the channel requirements as 2 per train/2 trains. This changes the CTS by moving the information from the Specification to the ITS Bases.

This change 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 channel requirements to ensure the function remains OPERABLE. All necessary channel requirements for the function remain in the Technical Specifications. Changes to the Bases are controlled by the Technical Specification Bases Control Program, described in Chapter 5 of the ITS. This requirement provides for control of changes to the Bases and will ensure that any changes to the Bases are properly evaluated. This change is categorized as less restrictive removal of details because information has been moved from the Technical Specifications to the Bases.

LA.12 (*Type 1 – Removing Details of System Design and System Description, Including Design Limits*) CTS Table 3.3-3 for Engineered Safety Feature Actuation System Instrumentation has three columns stating various requirements for each function. These columns are labeled, "TOTAL NO. OF CHANNELS," "CHANNELS TO TRIP," and "MINIMUM CHANNELS OPERABLE." ITS Table 3.3.2-1 states the channel requirement for each ESFAS function as, "REQUIRED CHANNELS." This changes the CTS by stating all of the channel requirements for each function as the required channels and moving the information of the number of channels to trip and the minimum channels needed to maintain the function OPERABLE to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the number of required channels and the appropriate Condition to be entered if a required channel becomes inoperable. This change is acceptable because the removed information will be adequately controlled in the UFSAR. The UFSAR is controlled under 10 CFR 50.59 which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

RAT
3.3.2-8
R6

LESS RESTRICTIVE CHANGES

L.1 (*Category 1 – Relaxation of LCO Requirements*) CTS 3.3.2.1 requires the ESFAS instrumentation channels shown in Table 3.3-3 to be OPERABLE. Table 3.3-3 states for function 6(a), Auxiliary Feedwater Pump starts on manual initiation that the total number of channels is 2. The function is required to be OPERABLE in MODES 1, 2, and 3. For an inoperable channel, Action 21 must be entered. ITS 3.3.2 in Table 3.3.2-1 does not require the manual initiation function for AFW pump starts. This

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.2 -9 ITS N/A
STS N/A
CTS Table 4.3 - 2
DOC A.12

RAI 3.3.2-9: Comment: The CTS requirements to perform required testing during shutdown is deleted. This change represents a less restrictive change to CTS. Provide a safety basis discussion for this change.

Response: The Company agrees with the Comment. A less restrictive DOC L.4 has been constructed that justifies the deletion of the "during shutdown" of the CTS. DOC A.12 has been modified to address the administrative change of the CTS surveillance requirements.

ITS

Note
e

(A.1)

TABLE 4.3-2 (Continued)

TABLE NOTATION

ITS
3.3.2
03-09-00

RAI
3.3.2-9
RG

RAI
3.3.2-5
RG

- # Except when all MFIVs, MFRVs and associated bypass valves are closed and deactivated or isolated by a closed manual valve.
- (1) Manual actuation switches shall be tested at least once per 18 months during shutdown. (A.8, L.4, A.12, A.19)
 - (2) Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays. (L.A.2)
 - (3) The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter. (L.A.6)
 - (4) Only slave relays that do not satisfy any of the following criteria will be functionally tested:
 - 1. A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation.
 - 2. The test will adversely affect two or more components in one ESF system or two or more ESF systems. (Note in SR 3.3.2.5)
 - 3. The test will create a transient (reactivity, thermal, or hydraulic) condition on the RCS.
 - (5) Each train or logic channel shall be functionally tested up to and including input coil continuity testing to the ESF slave relays. (see ITS 3.3.5)

ITS

Note
e

A.1

TABLE 4.3-2 (Continued)

TABLE NOTATION

ITS 3.3.2
03-09-00

RAI
3.3.2-9
R6

RAI
3.3.2-5
R6

Except when all MFIVs, MFRVs and associated bypass valves are closed and deactivated or isolated by a closed manual valve.

(1) ~~Manual actuation switches shall be tested at least once per 18 months during shutdown.~~

(2) ~~Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays.~~

(3) ~~The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter.~~

(4) Only slave relays that do not satisfy any of the following criteria will be functionally tested:

1. A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation.
2. The test will adversely affect two or more components in one ESF system or two or more ESF systems.
3. The test will create a transient (reactivity, thermal, or hydraulic) condition on the RCS.

(5) ~~Each train or logic channel shall be functionally tested up to and including input coil continuity testing to the ESF slave relays.~~

A.8

L.4

A.12

A.19

LA.2

LA.6

NOTE IN
§2.3.2.5

SEE ITS 3.3.5

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

- A.12 CTS Table 4.3-2 notation (1) is associated with the manual initiation switches for Safety Injection, Containment Spray, Containment Isolation (Phase A and B), Steam Line Isolation, and the start of the AFW pumps. The notation requires that each manual actuation switch be tested to actuate the required function at least once per 18 months during shutdown. In ITS Table 3.3.2-1, for each of the listed functions, SR 3.3.2.7 states that a TADOT must be performed at a frequency of eighteen months. A Note to SR 3.3.2.7 specifies, "Verification of setpoint not required for manual initiation functions." The deletion of the performance of the surveillance requirement during shutdown is addressed by DOC L.4. This changes the CTS by replacing the wording of testing each required switch with the ITS requirement of performing a TADOT for the required functions and adds the Note to not require verification of setpoint.

This change is acceptable because the required testing maintains the CTS requirements in the ITS format. The CHANNEL FUNCTIONAL TESTING of the manual switches to perform their function continues to be required in the ITS TADOT. The addition of the Note to the SR simply states that setpoints for manual activation do not require the verification of setpoints. A manual activation either provides a function or not. If the function is initiated by the manual actuation, the function is satisfied, and therefore, the setpoint verification is not necessary for any manual initiation. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

- A.13 CTS Table 4.3-2 lists the requirements for the ESFAS Interlocks P-11 and P-12. A CHANNEL FUNCTIONAL TEST (CFT) and a CHANNEL CALIBRATION must be performed for each interlock on a refueling frequency (R). ITS SRs for the P-11 and P-12 interlocks require SR 3.3.2.8 (CHANNEL CALIBRATION) to be performed every 18 months. This changes the CTS by eliminating the CHANNEL FUNCTIONAL TEST requirements.

This change is acceptable because the ITS requirements maintains the CTS technical requirements. The CHANNEL CALIBRATION requirements contain all the requirements of the CFT and therefore, performing a CHANNEL CALIBRATION will satisfy all of the technical requirements of the CFT. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.14 CTS requirements in Table 3.3-3 for ESFAS Function 3.b.1), Containment Isolation Phase B manual, state that 2 sets, 2 switches/set are the total number of channels required. This function is required to be OPERABLE in MODES 1, 2, 3, and 4 with Action 18 to be entered for an inoperable channel. ITS in Table 3.3.2-1 Function 3.b.1, Containment Isolation Phase B on Manual Initiation, states, "Refer to Function 2.a (Containment Spray – Manual Initiation) for all functions and requirements." This changes the CTS by deleting the specific requirements for the Containment

RAI
3.3.2-9
3.3.2-10
R6
↓

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

RTT to be within specific limits. A Note is added to the requirement that provides an exception for the turbine driven AFW pump. The allowance delays the required verification by 24 hours after Main Steam pressure reaches 1005 psig. This changes the CTS by allowing the RTT verification to be delayed for 24 hours after the unit reaches a stable condition for testing.

The purpose of the CTS Surveillance Requirement is to ensure that the AFW system can provide water to the steam generator within the time frames assumed in the safety analyses. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria continues to verify that the equipment used to meet the LCO can perform its required functions. This change provides an allowance for entry into MODE 3 before testing of the steam driven AFW pump to ensure that there is sufficient steam pressure to accurately test the pump. This change will provide consistent test conditions for verification of response time for the steam driven AFW pump. This is part of the required testing to ensure continued OPERABILITY. 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
3.3.2-15
R6

- L.4 (*Category 7 – Relaxation Of Surveillance Frequency*) CTS Table 4.3-2 notation (1) is associated with the manual initiation switches for Safety Injection, Containment Spray, Containment Isolation (Phase A and B), Steam Line Isolation, and the start of the AFW pumps. The notation requires that each manual actuation switch be tested to actuate the required function at least once per 18 months during shutdown. In ITS Table 3.3.2-1, for each of the listed functions, SR 3.3.2.7 states that a TADOT must be performed at a frequency of eighteen months. This changes the CTS by deleting the “during shutdown” requirement and requires the test be performed every 18 months.

RAI
3.3.2-9
R6

This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The Frequency for testing of the manual switches for the various functions has been changed from 18 months “during shutdown” to 18 months. The performance of the testing will continue to be performed in a condition that would not create a transient on the unit. Therefore, the testing will generally will be conducted in MODES 5 and 6 (i.e., during unit shutdown). This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

- L.5 (*Category 1 – Relaxation of LCO Requirements*) CTS 3.3.2.1 requirements listed in Table 3.3-3 for P-11 and P-12 specifies two limits for the Allowable Values for each function. The P-11 function lists allowable values for: ≤ 2010 psig prevents manual block of Safety Injection (SI) on Low Low Pressurizer Pressure; and ≤ 1990 psig allows the manual block of SI on Low Low Pressurizer Pressure. The P-12 function lists allowable values for: ≤ 545 °F prevents manual block of SI actuation of high steam line flow; and ≥ 541 °F allows the manual block of SI on high steam line flow.

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3.3.2-10 ITS N/A
STS N/A
CTS Table 3.3 – 2
DOC A.12

RAI 3.3.2-10: Comment: DOC A.12 states “The addition of the Note to the SR simply states that setpoints for manual activation do not require the verification of setpoints.” Discuss changes to CTS that result when a Channel Functional Test requirement is replaced with a TADOT and a Note in the ITS.

Response: The Company agrees with the comment. DOC A.12 has been modified to address the administrative change of the CTS.

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

- A.12 CTS Table 4.3-2 notation (1) is associated with the manual initiation switches for Safety Injection, Containment Spray, Containment Isolation (Phase A and B), Steam Line Isolation, and the start of the AFW pumps. The notation requires that each manual actuation switch be tested to actuate the required function at least once per 18 months during shutdown. In ITS Table 3.3.2-1, for each of the listed functions, SR 3.3.2.7 states that a TADOT must be performed at a frequency of eighteen months. A Note to SR 3.3.2.7 specifies, "Verification of setpoint not required for manual initiation functions." The deletion of the performance of the surveillance requirement during shutdown is addressed by DOC L.4. This changes the CTS by replacing the wording of testing each required switch with the ITS requirement of performing a TADOT for the required functions and adds the Note to not require verification of setpoint.

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This change is acceptable because the required testing maintains the CTS requirements in the ITS format. The CHANNEL FUNCTIONAL TESTING of the manual switches to perform their function continues to be required in the ITS TADOT. The addition of the Note to the SR simply states that setpoints for manual activation do not require the verification of setpoints. A manual activation either provides a function or not. If the function is initiated by the manual actuation, the function is satisfied, and therefore, the setpoint verification is not necessary for any manual initiation. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

- A.13 CTS Table 4.3-2 lists the requirements for the ESFAS Interlocks P-11 and P-12. A CHANNEL FUNCTIONAL TEST (CFT) and a CHANNEL CALIBRATION must be performed for each interlock on a refueling frequency (R). ITS SRs for the P-11 and P-12 interlocks require SR 3.3.2.8 (CHANNEL CALIBRATION) to be performed every 18 months. This changes the CTS by eliminating the CHANNEL FUNCTIONAL TEST requirements.

This change is acceptable because the ITS requirements maintains the CTS technical requirements. The CHANNEL CALIBRATION requirements contain all the requirements of the CFT and therefore, performing a CHANNEL CALIBRATION will satisfy all of the technical requirements of the CFT. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.14 CTS requirements in Table 3.3-3 for ESFAS Function 3.b.1), Containment Isolation Phase B manual, state that 2 sets, 2 switches/set are the total number of channels required. This function is required to be OPERABLE in MODES 1, 2, 3, and 4 with Action 18 to be entered for an inoperable channel. ITS in Table 3.3.2-1 Function 3.b.1, Containment Isolation Phase B on Manual Initiation, states, "Refer to Function 2.a (Containment Spray – Manual Initiation) for all functions and requirements." This changes the CTS by deleting the specific requirements for the Containment

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3.3.2-11 ITS N/A
STS N/A
CTS SR 4.3.1.2
DOC A.16

RAI 3.3.2-11: Comment: Discuss changes to CTS requirements for not requiring Interlock functions to be response time tested as required by CTS 4.3.1.2.

Response: The Company agrees with the Comment. DOC A.16 has been modified to address the administrative change to the CTS.

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

Isolation Phase B manual requirements and referring the function to the Containment Spray Manual Initiation for the specific requirements.

This change is acceptable because there are no separate switches to initiate the Phase B Containment Isolation function. The Containment Spray manual switches are the only switches that initiate the Phase B Containment Isolation signal. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.15 CTS requirements in Table 3.3-3 for ESFAS Function 3.b.3, Containment Isolation Phase B Containment Pressure High-High state that 4 channels are required. The function is required to be OPERABLE in MODES 1,2,3, and 4 with Action 16* to be entered for an inoperable channel. CTS requirements in Table 3.3-3 for ESFAS Function 2.c, Containment Spray on Containment Pressure High-High state that 4 channels are required. The function is required to be OPERABLE in MODES 1,2,3, and 4 with Action 16* to be entered for an inoperable channel. ITS in Table 3.3.2-1 Function 3.b.3, Containment Isolation Phase B on Containment Pressure High High, states, "Refer to Function 2.c (Containment Spray – Containment Pressure High High) for all functions and requirements." This change the CTS by deleting the specific requirements for the Containment Isolation Phase B on Containment Pressure High High requirements and referring the function to the Containment Spray Containment Pressure High High for the specific requirements.

This change is acceptable because there are no separate signal from Containment Pressure channels to initiate the Phase B Containment Isolation function. The Containment Spray Containment Pressure High High signal is the same signal that initiates the Phase B Containment Isolation signal. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.16 CTS Surveillance Requirement 4.3.2.1.2 requires the Engineered Safety Feature Response Time to be conducted for each ESFAS function. The testing must demonstrate that each function is within its specified limit at a frequency of every 18 months. ITS ESFAS SI, Containment Spray, Containment Isolation, Steam Line Isolation, AFW, and ESFAS Interlock Functions for manual initiation and Automatic Actuation Logic and Actuation Relays do not require that Response Time Testing (RTT) be performed. The Automatic Actuation Logic and Actuation Relays require Actuation Logic Test (SR 3.3.2.2), Master Relay Test (SR 3.3.2.3), and Slave Relay Test (SR 3.3.2.5). Each manual initiation function requires a TADOT (SR 3.3.2.7). The ESFAS P-11 and P-12 interlocks require a CHANNEL CHECK and a CHANNEL CALIBRATION requirement. The P-4 interlock requires the TADOT. This changes the CTS requirements by not requiring RTT to be performed on the above ESFAS Functions.

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DISCUSSION OF CHANGES
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The purpose of deleting the RTT for these ESFAS Functions is to set the proper testing requirements for functions. The ITS test requirements are the appropriate testing requirements for these ESFAS Functions. The test requirements of the CTS are the same as the ITS test requirements for RTT. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

RAI
3.3.2-11
RL

- A.17 CTS Table 3.3-3 for Functional Units 5.a and 5.b, Turbine Trip and Feedwater Isolation on Steam Generator (SG) Water Level – High-High and Automatic Actuation Logic and Actuation Relays, requires for each an applicability of MODES 1, 2, and 3^{###}. Notation ^{###} states, “Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” ITS Table 3.3.2 – 1 for Function 5, Turbine Trip and Feedwater Isolation, requires that Functions 5.a and 5.b, Automatic Actuation Logic and Actuation Relays and SG Water Level – High High, be OPERABLE in MODES 1, 2^(e), and 3^(e). Note ^(e) states, “Except when all Main Feedwater pump discharge valves or all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve.” The Main Feedwater pump discharge valves addition is addressed by DOC L.6. This changes the CTS by specifically stating the Functions 5.a and 5.b are not applicable in MODE 2 when appropriate valves are closed and provide the required safety function.

RAI
3.3.2-3
RL

The purpose of the CTS and ITS Notes are to provide an exception to the instrumentation requirements for the Feedwater Isolation function. This change is acceptable because the technical requirements of the CTS are maintained in the ITS format. Both CTS and ITS do not require instrumentation channels to be OPERABLE (i.e., not applicable) when the required equipment is in a state that performs the safety function. The change is designated as administrative change because it does not result in technical change to the CTS requirements.

- A.18 CTS Table 3.3-3 allows one channel of certain functional units to be bypassed for up to 4 hours to perform surveillance testing. A Note for ITS 3.3.2 Required Action C states, “One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE.” This changes the CTS by specifically stating that surveillance testing can only be performed when the remaining train is OPERABLE.

RAI
3.3.2-4
RL

The purpose of the ITS Note phrase, “provided the other train is OPERABLE,” is to remind the SR performer that there are only two trains of Automatic Actuation Logic and Actuation Relays for SI, Containment Spray, and Containment Isolation. With one train inoperable, testing the other train would disable the safety function. This change is acceptable because it restates the CTS requirements in more clearly defined terms. The CTS requirements are maintained in ITS format. The change is designated as an administrative change because it does not result in technical change to the CTS requirements.

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3.3.2-12 ITS N/A
STS N/A
CTS SR 4.3.1.2
DOC M.3

RAI 3.3.2-12: Comment: Proposed ITS Action I 72 hour allowed outage time to place a channel in bypass and 12 hours for an additional channel to be placed in bypass for testing requires a plant specific staff safety evaluation of WCAP-14333 for North Anna. Revise the submittal to adopt STS or propose the allowances of WCAP-14333 for the North Anna 1 and 2 licensing basis.

Response: The Company agrees with the Comment. Action I is provided for an inoperable RWST Level channel. WCAP-14333 does not evaluate the automatic swapper function from the Level-Low Low signal on the RWST. A site specific PRA has evaluated these allowances and found them to be acceptable. The ITS Bases have been modified to reflect the site specific PRA evaluation for these times. This information has been communicated to the staff in a letter dated 5/30/01 (Serial Number 01-319).

BASES

ACTIONS

H.1 and H.2 (continued)

challenging unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above. The allowance of 48 hours to return the train to an OPERABLE status is justified in Reference 8.

I.1, I.2.1, and I.2.2

Condition I applies to:

- RWST Level-Low Low Coincident with Safety Injection.

RWST Level-Low Low Coincident With SI provides actuation of switchover to the containment sump. Note that this Function requires the bistables to energize to perform their required action. The failure of up to two channels will not prevent the operation of this Function. However, placing a failed channel in the tripped condition could result in a premature switchover to the sump, prior to the injection of the minimum volume from the RWST. Placing the inoperable channel in bypass results in a two-out-of-three logic configuration, which satisfies the requirement to allow another failure without disabling actuation of the switchover when required.

Restoring the channel to OPERABLE status or placing the inoperable channel in the bypass condition within 72 hours is sufficient to ensure that the Function remains OPERABLE, and minimizes the time that the Function may be in a partial trip condition (assuming the inoperable channel has failed high). The 72 hour Completion Time is justified in a plant-specific risk assessment, consistent with Reference 8. If the channel cannot be returned to OPERABLE status or placed in the bypass condition within 72 hours, the unit must be brought to MODE 3 within the following 6 hours and MODE 5 within the next 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. In MODE 5, the unit does not have any analyzed transients or conditions that require the explicit use of the protection functions noted above.

The Required Actions are modified by a Note that allows placing a second channel in the bypass condition for up to 12 hours for surveillance testing. The total of 78 hours to
(continued)

RAI
3.3.2-12
R6

BASES

ACTIONS

I.1, I.2.1, and I.2.2 (continued)

reach MODE 3 and 12 hours for a second channel to be bypassed is acceptable based on the results of a plant-specific risk assessment, consistent with Reference 8.

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R6

J.1, J.2.1, and J.2.2

Condition J applies to the P-11 and P-12 interlocks.

With one or more channels inoperable, the operator must verify that the interlock is in the required state for the existing unit condition. The verification that the interlocks are in their proper state may be performed via the Control Room permissive status lights. This action manually accomplishes the function of the interlock. Determination must be made within 1 hour. The 1 hour Completion Time is equal to the time allowed by LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 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. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks.

R6

SURVEILLANCE
REQUIREMENTS

The SRs for each ESFAS Function are identified by the SRs column of Table 3.3.2-1.

A Note has been added to the SR Table to clarify that Table 3.3.2-1 determines which SRs apply to which ESFAS Functions.

Note that each channel of process protection supplies both trains of the ESFAS. When testing channel I, train A and train B must be examined. Similarly, train A and train B must be examined when testing channel II, channel III, and channel IV (if applicable). The CHANNEL CALIBRATION and COTs are performed in a manner that is consistent with the assumptions used in analytically calculating the required channel accuracies.

INSERT 1

a plant-specific risk assessment, consistent with

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INSERT 2

The verification that the interlocks are in their proper state may be performed via the Control Room permissive status lights.

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3.3.2-13 Not used.

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3.3.2-14 ITS N/A
STS N/A
CTS SR 4.3.1.2
DOC LA.1

RAI 3.3.2-14: Comment: The discussion above states in the second paragraph that the proposed relocations are related to system design. Explain how the setpoint requirements items moved out of TS are related to system design.

Response: The Company agrees with the Comment. DOC LA.1 has been modified and classifies the changes as Type 3 – Removing Procedural Details for Meeting TS Requirements.

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

FUNCTIONAL TEST every refueling (R). ITS Function 8.a, ESFAS Interlock, Reactor Trip (P – 4), requires the performance of SR 3.3.2.10. This SR requires the performance of a TADOT at a frequency of once per reactor trip breaker (RTB) cycle. The SR is modified by a Note that states, “Verification of setpoint not required.” This changes the CTS by requiring the performance of the TADOT each time the reactor trip breaker is cycled instead of one per refueling cycle.

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3.3.2-6
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The purpose of the ITS SR 3.3.2.10 is to ensure the verification of the P-4 interlock on each cycle of the RTBs. This change is acceptable because verifying the OPERABILITY of the P-4 interlock ensures the proper operation of the Reactor Trip System each time the interlock is required to perform its required function. This change is designated as more restrictive because the testing frequency has been increased from the CTS requirements.

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Problems)* CTS LCO 3.3.2.1 and Action a contain information about the ESFAS channels and interlocks setpoint requirements. The LCO states the setpoint will be set consistent with the Trip Setpoints listed in Table 3.3-4. Action a requires the setpoint to be set more conservatively than the value listed in the Allowable Value column of the same table in order for the function to be considered OPERABLE. ITS 3.3.2 does not contain this information. This changes the CTS by moving the information from the Specification to the ITS Bases.

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

RAT
3.3.2-14
R6

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 4.3-2 specifies a requirement to perform a CHANNEL FUNCTIONAL TEST for the automatic actuation logic on various ESF functions on a monthly basis. The frequency (M) is modified by notation (2) which states, “Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays.” ITS SRs 3.3.2.2 and 3.3.2.3 require the performance of the ACTUATION LOGIC TEST and the

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3.3.2-15 ITS N/A
STS N/A
CTS SR 4.3.1.2
DOC L.3

RAI 3.3.2-15: Comment: The proposed changes allow a 24 hour delay for RTT verification after the main steam pressure reaches 1005 psig. Provide a safety basis discussion to show that the 24 hour delay time for RTT will not adversely impact safe operation of the plant.

Response: The Company agrees with the Comment. DOC L.3 has been modified and changed from a Category 7 – Relaxation of Surveillance Frequency to a Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria. The modification of DOC L.3 provides additional discussion of how the 24-hour delay does not adversely impact the safe operation of the plant.

DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

changes the CTS by deleting the requirements for manual initiation of AFW pump starts.

The purpose of the CTS is to require the OPERABILITY of the manual initiation of AFW. This change is acceptable because the LCO requirements continue to ensure that structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Manual initiation of AFW system is not assumed in the safety analyses. The automatic functions that would initiate AFW to provide a safety feature will continue to be required. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

- L.2 (*Category 2 – Relaxation of Applicability*) CTS requirement 3.3.2.1 for Steam Line Isolation, Functional Unit 4 in Table 3.3-3, requires the function to be OPERABLE with the capabilities to perform a Main Steam isolation. The isolation may be initiated from Manual, Automatic Actuation Containment Pressure – Intermediate High-High, and Steam Flow in Two Steam Lines – High coincident with either T_{ave} Low-Low or Steam Line Pressure Low. The steam line isolation functions are required to be OPERABLE in MODES 1, 2, and 3^{##}. ITS LCO 3.3.2 in Table 3.3.2-1 lists the requirement for Steam Line Isolation as Function 4. This requires the function to be OPERABLE with initiation by Manual, Automatic Actuation Logic and Actuation Relays, Containment Pressure Intermediate High-High, High Steam Flow in Two Steam Lines with either T_{ave} Low-Low or Steam Line Pressure Low. These initiators are required to be OPERABLE in MODES 1, 2^(d), and 3^(d). Notation ^(d) states, “Except when all MSTVs are closed and de-activated.” This changes the CTS by not requiring the instrumentation channels to be OPERABLE in MODES 2^(d) and 3^(d).

The purpose of the CTS is to ensure that the referenced functions are OPERABLE. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. In MODES 2 and 3, having all MSTVs closed and de-energized accomplishes the safety function of isolating the Main Steam System. Therefore, the instrumentation required to provide the safety function is not required to be OPERABLE. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

- L.3 (*Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria*) CTS SR 4.3.2.1.3 provides for the Response Time Testing (RTT) of the ESF functions. This is applicable to the steam turbine driven pump start requirement of the CTS function 6 for the automatic start requirements. The AFW pumps are required to start on Steam Generator Water Level Low – Low, Loss of Offsite Power, the Trip of all Main Feedwater Pumps, and any SI signals. ITS SR 3.3.2.9 requires the verification of

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3.3.2-15
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DISCUSSION OF CHANGES
ITS 3.3.2, ESFAS

RTT to be within specific limits. A Note is added to the requirement that provides an exception for the turbine driven AFW pump. The allowance delays the required verification by 24 hours after Main Steam pressure reaches 1005 psig. This changes the CTS by allowing the RTT verification to be delayed for 24 hours after the unit reaches a stable condition for testing.

The purpose of the CTS Surveillance Requirement is to ensure that the AFW system can provide water to the steam generator within the time frames assumed in the safety analyses. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria continues to verify that the equipment used to meet the LCO can perform its required functions. This change provides an allowance for entry into MODE 3 before testing of the steam driven AFW pump to ensure that there is sufficient steam pressure to accurately test the pump. This change will provide consistent test conditions for verification of response time for the steam driven AFW pump. This is part of the required testing to ensure continued OPERABILITY. 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
3.3.2-15
R6

- L.4 (*Category 7 – Relaxation Of Surveillance Frequency*) CTS Table 4.3-2 notation (1) is associated with the manual initiation switches for Safety Injection, Containment Spray, Containment Isolation (Phase A and B), Steam Line Isolation, and the start of the AFW pumps. The notation requires that each manual actuation switch be tested to actuate the required function at least once per 18 months during shutdown. In ITS Table 3.3.2-1, for each of the listed functions, SR 3.3.2.7 states that a TADOT must be performed at a frequency of eighteen months. This changes the CTS by deleting the “during shutdown” requirement and requires the test be performed every 18 months.

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3.3.2-9
R6

This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The Frequency for testing of the manual switches for the various functions has been changed from 18 months “during shutdown” to 18 months. The performance of the testing will continue to be performed in a condition that would not create a transient on the unit. Therefore, the testing will generally will be conducted in MODES 5 and 6 (i.e., during unit shutdown). This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

- L.5 (*Category 1 – Relaxation of LCO Requirements*) CTS 3.3.2.1 requirements listed in Table 3.3-3 for P-11 and P-12 specifies two limits for the Allowable Values for each function. The P-11 function lists allowable values for: ≤ 2010 psig prevents manual block of Safety Injection (SI) on Low Low Pressurizer Pressure; and ≤ 1990 psig allows the manual block of SI on Low Low Pressurizer Pressure. The P-12 function lists allowable values for: ≤ 545 °F prevents manual block of SI actuation of high steam line flow; and ≥ 541 °F allows the manual block of SI on high steam line flow.

R6

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3.3.3-1 ITS N/A
STS N/A
CTS 3.6.4.1
DOC N/A

RAI 3.3.3-1; No DOC reference CTS 3.6.4.1, Combustible Gas Control and CTS 3.3.3.6, Accident Monitoring Instrumentation propose inserting ITS Action B.

Comment: Provide a discussion of change evaluation for the proposed CTS changes.

Response: The Company agrees with the Comment. Less restrictive change DOC L.1 does address the ITS Action B requirements to the CTS, but it has been modified to clarify this issue.

DISCUSSION OF CHANGES
ITS 3.3.3, PAM INSTRUMENTATION

LESS RESTRICTIVE CHANGES

- L.1 *(Category 3 – Relaxation of Completion Time)* CTS 3.3.3.6 Action a requires the restoration of PAM instrumentation channels within seven days whenever one required channel is inoperable or the unit to be shutdown within the next 12 hours. CTS 3.6.4.1 Action a requires the restoration of an inoperable hydrogen analyzer within thirty days with one analyzer inoperable. ITS 3.3.3 Conditions A and B require the restoration of post accident instrumentation channels within thirty days or the initiation of a special report. This changes the CTS by deleting the requirements for the unit to be in HOT SHUTDOWN within the next 12 hours with one inoperable channel for a Function that has two required channels, allowing an additional restoration time, and requiring a report to be made in accordance with Specification 5.6.6.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed Completion Time. The allowance to extend the Completion Time from 7 to 30 days is acceptable because of the instrumentation redundancy provided by other functions, which monitor similar parameters. The deletion of requiring the unit to be placed in HOT SHUTDOWN is acceptable because a required PAM channel for a function continues to be OPERABLE and provides the required information. The addition of a report is acceptable to ensure the NRC is officially informed of inoperable equipment. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

RAI
3.3.3-1
R6

- L.2 *(Category 3 – Relaxation of Completion Time)* CTS 3.3.3.6 Action b requires the restoration of inoperable PAM instrumentation channels within forty-eight hours whenever both required channels for a Function are inoperable. CTS 3.6.4.1 Action b. allows 7 days to restore one hydrogen analyzer to OPERABLE status when both are inoperable. ITS 3.3.3 Condition C requires the restoration of inoperable PAM instrumentation channels within seven days. This changes the CTS by allowing an additional five days for restoration of an inoperable instrumentation channel for a Function that has two inoperable channels.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed Completion Time. This change is acceptable based on the low probability of an event requiring an inoperable PAM instrument during the interval and the alternative means available for the operator to obtain the required information. This change is designated as less restrictive because

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3.3.3-2 Not used.

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3.3.3-3 ITS N/A
STS N/A
CTS N/A
DOC LA.1

RAI 3.3.3-3; DOC LA.1 The removal of detail changes described as Type 1 - Removing Details of System Design and System Description, Including Design Limits, states that the details removed are related to system design and are not necessary to be included in TS to provide adequate protection of public health and safety.

Comment: Revise DOC LA.1 to provide additional discussion explaining why hydrogen analyzer heat tracing system design details are not needed to establish TS operability requirements.

Response: The Company agrees with the Comment. DOC LA.1 has been revised to address only the heat trace and provides additional discussion for justification.

DISCUSSION OF CHANGES
ITS 3.3.3, PAM INSTRUMENTATION

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.6.4.1 states two independent containment hydrogen analyzers (shared with the other unit) shall be OPERABLE. Notes to CTS 3.6.4.1 Actions and Surveillance Requirement 4.6 4.1 requires the OPERABILITY of the hydrogen analyzers to include the OPERABILITY of the associated heat tracing system. ITS 3.3.3 PAM Instrumentation requires two channels of hydrogen analyzers to be OPERABLE. This change moves CTS information regarding the hydrogen analyzer heat tracing system from the Specifications to the Technical Requirements Manual (TRM).

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the Hydrogen Analyzers to be OPERABLE in the required MODES. The OPERABILITY of the Hydrogen Analyzers would be evaluated for any inoperable support system, including the heat trace system. Support systems that are required for the OPERABILITY of safety functions are addressed under the defined term “OPERABLE – OPERABILITY.” Generic Letter 91-18 would also require an evaluation to determine the OPERABILITY of a safety function for an inoperable support system. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. Any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

RAI
3.3.3-3
R6

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Problems)* CTS SR 4.6.4.1 states each hydrogen analyzer shall be demonstrated OPERABLE by performing a CHANNEL CALIBRATION using a sample gas containing a specified gas concentration for hydrogen mixed with nitrogen. ITS SR 3.3.3.2 requires the hydrogen analyzers have a CHANNEL CALIBRATION. This change moves the CTS sample gas requirements to the ITS Bases.

The removal of these details for performing Surveillances from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the Hydrogen Analyzers to be OPERABLE in the required MODES. The OPERABILITY of the Hydrogen Analyzers require a CHANNEL CALIBRATION for the function to be considered OPERABLE. The precise percentage of the calibrating gas to perform the CHANNEL CALIBRATION is not required in the specification because it is a procedural detail that would not provide any additional protection of the public health

RAI
3.3.3-4
R6

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.3-4 ITS N/A
STS N/A
CTS N/A
DOC LA.2

RAI 3.3.3-4; DOC LA.2 The removal of detail changes described as Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Problems, states that the details removed are related to details for performing Surveillances from the Technical Specifications which are not necessary to be included in TS to provide adequate protection of public health and safety.

Comment: Revise DOC LA.2 to provide additional discussion explaining why sample gas requirements are not needed to establish TS operability requirements.

Response: The Company agrees with the Comment. DOC LA.2 has been revised and provides additional discussion.

DISCUSSION OF CHANGES
ITS 3.3.3, PAM INSTRUMENTATION

REMOVED DETAIL CHANGES

- LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.6.4.1 states two independent containment hydrogen analyzers (shared with the other unit) shall be OPERABLE. Notes to CTS 3.6.4.1 Actions and Surveillance Requirement 4.6 4.1 requires the OPERABILITY of the hydrogen analyzers to include the OPERABILITY of the associated heat tracing system. ITS 3.3.3 PAM Instrumentation requires two channels of hydrogen analyzers to be OPERABLE. This change moves CTS information regarding the hydrogen analyzer heat tracing system from the Specifications to the Technical Requirements Manual (TRM).

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the Hydrogen Analyzers to be OPERABLE in the required MODES. The OPERABILITY of the Hydrogen Analyzers would be evaluated for any inoperable support system, including the heat trace system. Support systems that are required for the OPERABILITY of safety functions are addressed under the defined term “OPERABLE – OPERABILITY.” Generic Letter 91-18 would also require an evaluation to determine the OPERABILITY of a safety function for an inoperable support system. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. Any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

RAI
3.3.3-3
RL

- LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Problems)* CTS SR 4.6.4.1 states each hydrogen analyzer shall be demonstrated OPERABLE by performing a CHANNEL CALIBRATION using a sample gas containing a specified gas concentration for hydrogen mixed with nitrogen. ITS SR 3.3.3.2 requires the hydrogen analyzers have a CHANNEL CALIBRATION. This change moves the CTS sample gas requirements to the ITS Bases.

The removal of these details for performing Surveillances from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the Hydrogen Analyzers to be OPERABLE in the required MODES. The OPERABILITY of the Hydrogen Analyzers require a CHANNEL CALIBRATION for the function to be considered OPERABLE. The precise percentage of the calibrating gas to perform the CHANNEL CALIBRATION is not required in the specification because it is a procedural detail that would not provide any additional protection of the public health

RAI
3.3.3-4
RL

DISCUSSION OF CHANGES
ITS 3.3.3, PAM INSTRUMENTATION

and safety. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

RAI
3.3.3-4
R6

- LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.6.4.1 states two independent containment hydrogen analyzers (shared with the other unit) shall be OPERABLE. ITS 3.3.3 PAM Instrumentation requires two channels of hydrogen analyzers to be OPERABLE. This change moves CTS information regarding the hydrogen analyzer being shared between units from the Specifications to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the Hydrogen Analyzers to be OPERABLE in the required MODES. 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.

R6

- LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 3.3-6 Radiation Monitoring Instrumentation list the alarm/trip setpoint and measurement range for the High Range Area Monitors. ITS 3.3.3 PAM Instrumentation requires two channels of High Range Area monitors but does not state the measuring range or alarm/trip setpoint. This change moves the measurement range and alarm/trip setpoint from the Specifications to the Technical Requirements Manual (TRM).

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for 2 channels of the High Range Containment High Range Area monitor to be OPERABLE in MODES 1, 2, and 3. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. Any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

RAI
3.3.3-6
R6

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.3-5 ITS N/A
STS N/A
CTS N/A
DOC L.3

RAI 3.3.3-5; DOC L.3 The less restrictive TS change described as Category 5 – Deletion of Surveillance Requirement, allows an additional 92 days between calibrations of hydrogen analyzer channels.

Comment: Revise DOC L.3 to provide additional justification for the surveillance test interval extension. Use operational data to support conclusions that testing at the less frequent interval will not affect channel availability.

Response: The Company agrees with the Comment. DOC L.3 classification has been revised to Category 7 Relaxation Of Surveillance Frequency to address the elimination of STAGGERED TEST BASIS requirement. Deleting the 6-month frequency and retaining the CTS SR frequency of 92 days for the CHANNEL CALIBRATION has modified DOC L.6, the Specification and Bases.

SURVEILLANCE REQUIREMENTS

----- NOTE -----
 SR 3.3.3.1 and SR 3.3.3.3 apply to each PAM instrumentation Function in Table 3.3.3-1 except SR 3.3.3.3 does not apply to Items 10 and 12. SR 3.3.3.2 applies only to Item 12. SR 3.3.3.4 applies only to Item 10.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.3.2	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.3.3	-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.3.4	Perform TADOT.	18 months

RAI
3.3.3-5
R6

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

indication. SR 3.3.3.2 is required to be performed on the containment hydrogen analyzers. SR 3.3.3.4 is required for the containment isolation valve position indication.

SR 3.3.3.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross instrumentation failure has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION. The high radiation instrumentation should be compared to similar unit instruments located throughout the unit.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

As specified in the SR, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.3.2

A CHANNEL CALIBRATION is performed on the containment hydrogen analyzers every 92 days and uses a gas solution containing a one volume percent ($\pm 0.25\%$) of hydrogen and a sample of four volume percent ($\pm 0.25\%$) of hydrogen with the balance of each gas sample being nitrogen. The containment hydrogen analyzer heat trace system is verified OPERABLE as a part of this surveillance.

RAT
3.3.3-5
R6

ITS 3.3.3, PAM INSTRUMENTATION

INSERT 1

except SR 3.3.3.3 does not apply to Items 10 and 12. SR 3.3.3.2 applies only to Item 12.
SR 3.3.3.4 applies only to Item 10.

INSERT 2

SR 3.3.3.2	Perform CHANNEL CALIBRATION.	92 days
------------	------------------------------	---------

RAI
3.3.3-5
R6

INSERT 3

SR 3.3.3.4	Perform TADOT.	18 months
------------	----------------	-----------

INSERT 1

SR 3.3.3.2

A CHANNEL CALIBRATION is performed on the containment hydrogen analyzers every 92 days and uses a gas solution containing a one volume percent ($\pm 0.25\%$) of hydrogen and a sample of four volume percent ($\pm 0.25\%$) of hydrogen with the balance of each gas sample being nitrogen. The containment hydrogen analyzer heat trace system is verified OPERABLE as a part of this Surveillance.

RAI
3.3.3-5
R6

INSERT 2

Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the CET sensors is accomplished by an in-place cross calibration that compares the other sensing elements with the recently installed sensing element.

R6

INSERT 3

SR 3.3.3.4

SR 3.3.3.4 is the performance of a TADOT of containment isolation valve position indication. This TADOT is performed every 18 months. The test shall independently verify the OPERABILITY of containment isolation valve position indication against the actual valve position of the valves.

The Frequency is based on the known reliability of the Function and has been shown to be acceptable through operating experience.

ITS
3.3
3.3.3

Instrumentation
Post Accident Monitoring (PAM) Instrumentation

CONTAINMENT SYSTEMS
3/4.6.4 COMBUSTIBLE GAS CONTROL

(A.1)

HYDROGEN ANALYZERS

LIMITING CONDITION FOR OPERATION

LCD 3.3.3
TABLE 3.3.3-1
Item 12

3.6.4.1 Two independent containment hydrogen analyzers (shared with Unit 2) shall be OPERABLE.

(LA.3) | R6

APPLICABILITY: MODES 1 and 2 3

(M.2)

ACTION:

Action A

Insert proposed note.
x. With one hydrogen analyzer inoperable, restore the inoperable analyzer to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

(A.2) | R2

(L.1)

Action C

INSERT proposed Action B.
x. With both hydrogen analyzers inoperable, restore at least one analyzer to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours. AND Be in MODE 4 within 12 hours

(M.2)

Action D

NOTE: OPERABILITY of the hydrogen analyzers includes OPERABILITY of the respective Heat Tracing System.

(LA.1)

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2

4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

(L.3) | RAI
3.3.3-5
R6

- a. One volume percent ($\pm 25\%$) hydrogen, balance nitrogen, and
- b. Four volume percent ($\pm 25\%$) hydrogen, balance nitrogen.

(LA.2)

NOTE: The Channel Calibration Test shall include startup and operation of the Heat Tracing System.

(LA.1)

ITS
3.3
3.3.3

Instrumentation
POST ACCIDENT MONITORING (PAM) Instrumentation

(A.1)

CONTAINMENT SYSTEMS
3/4.6.4 COMBUSTIBLE GAS CONTROL
HYDROGEN ANALYZERS

LIMITING CONDITION FOR OPERATION

LCO 3.3.3
Table 3.3.3-1
Item 12

3.6.4.1 Two independent containment hydrogen analyzers (shared with Unit 1) shall be OPERABLE.

(LA.3) | R6

APPLICABILITY: MODES 1 and (2) (3)

(M.2)

ACTION:

INSERT PROPOSED Note

Action A
Action B
Action C
Action D

a. With one hydrogen analyzer inoperable, restore the inoperable analyzer to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

(A.2)

(L.1)

R2

INSERT proposed Action B

b. With both hydrogen analyzers inoperable, restore at least one analyzer to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours. and be in Mode 4 within 12 hours

(M.2)

NOTE: OPERABILITY of the hydrogen analyzers includes OPERABILITY of the respective Heat Tracing System.

(LA.1)

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2

4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

(L.3) | RAI
3.3.3-5
R6

a. One volume percent (+ .25%) hydrogen, balance nitrogen, and

(LA.2)

b. Four volume percent (+ .25%) hydrogen, balance nitrogen.

NOTE: The Channel Calibration Test shall include startup and operation of the Heat Tracing System.

(LA.1)

DISCUSSION OF CHANGES
ITS 3.3.3, PAM INSTRUMENTATION

additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

- L.3 (*Category 7 – Relaxation Of Surveillance Frequency*) CTS SR 4.6.4.1 states, in part, “Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION.” ITS SR 3.3.3.2 states a CHANNEL CALIBRATION must be performed at a frequency of every 92 days. This changes the CTS for the hydrogen analyzer by eliminating the STAGGERED TEST BASIS (STB) requirement.

RAI
3.3.3-5
R6

The purpose of ITS SR 3.3.3.2 is to ensure that the hydrogen analyzers have a CHANNEL CALIBRATION performed on an acceptable frequency. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The change does not affect the hydrogen analyzer methods of testing or the capability of the instruments to perform their safety function, but simply eliminates the STB requirement. The Hydrogen Analyzer will receive a CHANNEL CALIBRATION on each channel every 92 days. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

- L.4 Not Used

R2

- L.5 (*Category 1 – Relaxation of LCO Requirements*) CTS 3.3.3.6 in Table 3.3-10 requires the following functions to be OPERABLE: 8) Refueling Water Storage Tank, 9) Boric Acid Tank Solution Level, 10) Auxiliary Feedwater Flow Rate, 12) PORV Position Indicator, 13) PORV Block Valve Position Indication, 14) Safety Valve Position Indication, and 16) Containment Water Level. ITS 3.3.3 does not require these functions to be OPERABLE. This changes the CTS by deleting these functions from the post accident monitoring functions.

This change is acceptable because the LCO requirements continue to ensure that the process variables are maintained consistent with the safety analyses and licensing basis. The ITS LCO requirements ensure that the process variables are maintained consistent with the safety analyses and Regulatory Guide 1.97. An evaluation has been performed under the required guidelines which found that these variables are not required to be included in this table. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

- L.6 (*Category 2 – Relaxation of Applicability*) CTS Table 3.3-6 requires 2 channels of the Containment High Range Area Monitors to be OPERABLE in MODES 1, 2, 3, and 4. ITS LCO 3.3.3 Function 11, Containment Area Radiation (High Range), requires 2 channels to be OPERABLE in MODES 1, 2, and 3. This changes the CTS by deleting the function in MODE 4.

RAI
3.3.3-6
R6

North Anna ITS RAIs
ITS Section 3.3, Instrumentation

3.3.3-6 ITS N/A
STS N/A
CTS N/A
DOC L.6

RAI 3.3.3-6, DOC L.6 The less restrictive changes characterizes as Category 1 – Relaxation of LCO Requirements, limits Containment High Range Area Radiation Monitors to Modes 1, 2 and 3, modifies the Required Actions to be taken with one or two inoperable channels, and requires fewer Surveillance Requirements.

Comment: Revise DOC L.6 to provide additional discussion justifying the changes to CTS Modes of Applicability, deleting monthly channel functional testing requirements and modifying Required Action for inoperable channels.

Response: The Company agrees with the Comment. DOC L.6 has been eliminated and a separate DOC addresses each change. DOCs L.6, L.7, L.8 and L.9 address the individual changes to the applicability, completion times, required actions and surveillance requirement and DOC LA.4 addresses the movement of details from the Specifications to the TRM.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

NORTH ANNA - UNIT 1

FUNCTION 11

3/4 3-36

Amendment No. 64

ITS

INSTRUMENT MINIMUM CHANNELS OPERABLE APPLICABLE MODES ALARM/TRIP SETPOINT MEASUREMENT RANGE ACTION

1. AREA MONITORS

a. Fuel Storage Pool Area					
i. Criticality Monitor # 1	1	*	< 15 mR/hr	10 ⁻⁴ - 10 ⁺¹ R/hr	19
b. Containment					
i. Purge & Exhaust Isolation	1	6	< 50 mR/hr	10 ⁻⁴ - 10 ⁺¹ R/hr	22
ii. High Range Area	2	1, 2, 3, 4	< 1.6x10 ⁺⁵ R/hr	10 ⁰ - 10 ⁺¹ R/hr	35

See CTS 3.3.3.1

RAI 3.3.3-6
LA.4
L.6 R.6

2. PROCESS MONITORS

a. Ventilation Vent					
i. Gaseous Gross Activity	1	**	≤ 1 x 10 ⁻⁵ µCi/ml	10 - 10 ⁶ cpm	21
ii. Particulate Gross Activity	1	**	≤ 2 x 10 ⁻⁹ µCi/ml	10 - 10 ⁶ cpm	21
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	< 3.6 x 10 ³ cpm	10 - 10 ⁶ cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10 ⁶ cpm	20
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	< 1 x 10 ⁵ cpm	10 - 10 ⁶ cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10 ⁶ cpm	20

See CTS 3.3.3.1

see ITS 3.4.15

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
Common to Unit 1 and Unit 2

See CTS 3.3.3.1

ITS 3.3.3
6-28-85

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Rev 6

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 19 -

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

See CTS 3.3.3.1

ACTION 20 -

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

See ITS 3.4.15

ACTION 21 -

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

See CTS 3.3.3.1

ACTION 22 -

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

See CTS 3.3.3.1

ACTION 35 -

With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

1. Either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or
2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

L.7

Proposed Condition A

L.8

PROPOSED Condition B

RAF
3.3.3-6
R6

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

RAI
3.3.3-6
R6

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. AREA MONITORS				
a. Fuel Storage Pool Area				
i. Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4

See CTS 3.3.3.1

L.6

L.9

See CTS 3.3.3.1

See ITS 3.4.15

See CTS 3.3.3.1

*With fuel in the storage pool or building
 **With irradiated fuel in the storage pool
 #Common to Unit 1 and Unit 2

NORTH ANNA - UNIT 1

3/4 3-38

Amendment NO. 57

ITS

Function

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ITS 3

ITS

Function 11

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TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel storage Pool Area Criticality Monitor #	1	*	≤ 15 mR/hr	10 ⁻⁴ - 10 ⁺¹ R/hr	22
b. Containment					
i. Purge & Exhaust Isolation	1	6	≤ 50 mR/hr	10 ⁻⁴ - 10 ⁺¹ R/hr	25
ii. High Range Area	2	1,2,3, & 4	≤ 1.6 x 10 ⁺⁵ R/hr	10 ⁰ - 10 ⁺⁷ R/hr	35
2. PROCESS MONITORS					
a. Ventilation Vent #					
i. Gaseous Gross Activity	1	**	≤ 1 x 10 ⁻⁵ μCi/ml	10 - 10 ⁶ cpm	24
ii. Particulate Gross Activity	1	**	≤ 2 x 10 ⁻⁹ μCi/ml	10 - 10 ⁶ cpm	24
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	≤ 3.6 x 10 ³ cpm	10 - 10 ⁶ cpm	25
b) RCS Leakage Detection	1	1,2,3, & 4	N/A	10 - 10 ⁶ cpm	23
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	≤ 1 x 10 ⁵ cpm	10 - 10 ⁶ cpm	25
b) RCS Leakage Detection	1	1,2,3, & 4	N/A	10 - 10 ⁶ cpm	23

* With fuel in the storage pool or building
 ** With irradiated fuel in the storage pool
 # Common to Unit 1 and Unit 2

See CTS 3.3.3.1

LA.4

L.6

RAI 3.3.3-6 R6

See CTS 3.3.3.1

See ITS 3.4.15

ITS 3.3.3

See CTS 3.3.3.1

Rev 6

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours. *see CTS 3.3.3.1*

ACTION 23 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1. *see ITS 3.4.15*

ACTION 24 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12. *see CTS 3.3.3.1*

ACTION 25 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9. *see CTS 3.3.3.1*

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:
1. Either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or
2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status. *L.7*
Proposed Condition A
Proposed Condition B *L.8*

RAI
3.3.3-6
R6

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NORTH ANNA - UNIT 2

3/4 3-41

Amendment No. 49

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. AREA MONITORS				
a. Fuel Storage Pool Area Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4

* With fuel in the storage pool or building
 ** With irradiated fuel in the storage pool
 # Common to Unit 1 and Unit 2

RAI
3.3.3-6
RG

see
CTS
3.3.3.1

L16
L19

see
CTS
3.3.3.1

see
ITS
3.4.15

see
CTS
3.3.3.1

ITS

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ITS
3.3.3

DISCUSSION OF CHANGES
ITS 3.3.3, PAM INSTRUMENTATION

and safety. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

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- LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.6.4.1 states two independent containment hydrogen analyzers (shared with the other unit) shall be OPERABLE. ITS 3.3.3 PAM Instrumentation requires two channels of hydrogen analyzers to be OPERABLE. This change moves CTS information regarding the hydrogen analyzer being shared between units from the Specifications to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the Hydrogen Analyzers to be OPERABLE in the required MODES. 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.

R6

- LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 3.3-6 Radiation Monitoring Instrumentation list the alarm/trip setpoint and measurement range for the High Range Area Monitors. ITS 3.3.3 PAM Instrumentation requires two channels of High Range Area monitors but does not state the measuring range or alarm/trip setpoint. This change moves the measurement range and alarm/trip setpoint from the Specifications to the Technical Requirements Manual (TRM).

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for 2 channels of the High Range Containment High Range Area monitor to be OPERABLE in MODES 1, 2, and 3. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. Any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

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additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

- L.3 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS SR 4.6.4.1 states, in part, “Each hydrogen analyzer shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION.” ITS SR 3.3.3.2 states a CHANNEL CALIBRATION must be performed at a frequency of every 92 days. This changes the CTS for the hydrogen analyzer by eliminating the STAGGERED TEST BASIS (STB) requirement.

The purpose of ITS SR 3.3.3.2 is to ensure that the hydrogen analyzers have a CHANNEL CALIBRATION performed on an acceptable frequency. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The change does not affect the hydrogen analyzer methods of testing or the capability of the instruments to perform their safety function, but simply eliminates the STB requirement. The Hydrogen Analyzer will receive a CHANNEL CALIBRATION on each channel every 92 days. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

- L.4 Not Used

- L.5 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.3.3.6 in Table 3.3-10 requires the following functions to be OPERABLE: 8) Refueling Water Storage Tank, 9) Boric Acid Tank Solution Level, 10) Auxiliary Feedwater Flow Rate, 12) PORV Position Indicator, 13) PORV Block Valve Position Indication, 14) Safety Valve Position Indication, and 16) Containment Water Level. ITS 3.3.3 does not require these functions to be OPERABLE. This changes the CTS by deleting these functions from the post accident monitoring functions.

This change is acceptable because the LCO requirements continue to ensure that the process variables are maintained consistent with the safety analyses and licensing basis. The ITS LCO requirements ensure that the process variables are maintained consistent with the safety analyses and Regulatory Guide 1.97. An evaluation has been performed under the required guidelines which found that these variables are not required to be included in this table. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

- L.6 *(Category 2 – Relaxation of Applicability)* CTS Table 3.3-6 requires 2 channels of the Containment High Range Area Monitors to be OPERABLE in MODES 1, 2, 3, and 4. ITS LCO 3.3.3 Function 11, Containment Area Radiation (High Range), requires 2 channels to be OPERABLE in MODES 1, 2, and 3. This changes the CTS by deleting the function in MODE 4.

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R2

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This change is acceptable because the requirements continue to ensure that the process variables are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. Containment High Range Area Monitors are required to be OPERABLE in MODES 1, 2, and 3. This is acceptable because in MODES 4, 5, and 6, accidents of the type that would require these instruments are less likely to occur because of reduced temperature and pressure in the RCS and secondary system. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

- L.7 (Category 3 – Relaxation of Completion Time) CTS Table 3.3-6 requires 2 channels of the Containment High Range Area Monitors to be OPERABLE. Table 3.3-6 specifies Action 35 is to be entered when a channel becomes inoperable. This action requires inoperable channels to be returned to OPERABLE within 7 days. ITS LCO 3.3.3 Function 11, Containment Area Radiation (High Range), requires 2 channels to be OPERABLE. ITS Condition A is required to be entered for an inoperable channel for a period of 30 days. This changes the CTS by allowing 23 additional days for one channel of Containment High Range Area Monitors to be inoperable.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The Required Action is acceptable because it provides reasonable measures to mitigate the loss of indication. Radiation level can be monitored by the OPERABLE channel or obtained from locations outside the containment if necessary. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

- L.8 (Category 4 – Relaxation of Required Action) CTS Table 3.3-6 requires 2 channels of the Containment High Range Area Monitors to be OPERABLE. Table 3.3-6 specifies Action 35 is to be entered when a channel becomes inoperable. This action requires inoperable channels to be returned to OPERABLE within 7 days or a special report be made within 14 days. ITS LCO 3.3.3 Function 11, Containment Area Radiation (High Range), requires 2 channels to be OPERABLE in MODES 1, 2, and 3. ITS Condition A allows one channel to be inoperable for a period of 30 days before a report is required. ITS Condition B required with 2 channels inoperable that one channel must be restored to OPERABLE status within 7 days or the plant must be shutdown. This changes the CTS by allowing 2 channels of Containment High Range Area Monitors to be inoperable and providing a period of 7 days to restore one inoperable channel.

This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under

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ITS 3.3.3, PAM INSTRUMENTATION

the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. These Required Actions are acceptable because they provide reasonable measures to mitigate the loss of indication. Radiation level can be obtained from locations outside the containment. The radiation monitors do not provide any automatic or direct action for reactor protection or accident mitigation. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

- L.9 *(Category 5 – Deletion of Surveillance Requirement)* CTS Table 3.3-6 requires 2 channels of the Containment High Range Area Monitors to be OPERABLE. Surveillance Requirements of a CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, CHANNEL CALIBRATION are required to be performed. The ITS includes Surveillance Requirements for a CHANNEL CHECK and a CHANNEL CALIBRATION to be performed. This changes the CTS by eliminating the CHANNEL FUNCTIONAL TEST.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO are consistent with the safety analysis. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the assumptions in the safety analysis. The ITS SRs for the instruments continue to provide sufficient test requirements to ensure the OPERABILITY of the radiation monitors. The elimination of the CTS SR does not affect reactor protection or accident mitigation. The SR are consistent with other PAM channels and ensure the functions remain OPERABLE. 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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3.3.4-1 ITS N/A
STS N/A
CTS N/A
DOC L.1

RAI 3.3.4-1: DOC L.1. The proposed change identified as Category 1 – Relaxation of LCO Requirement states that the Relay Room ventilation pressure does not provide a necessary parameter to ensure the unit is safely maintained in MODE 3.

Comment: Provide a safety analysis explanation for deleting the requirements for this function to be operable as part of the ITS program.

Response: The Company agrees with the Comment. DOC L.1 has been revised to provide a safety analysis explanation for the deletion of the parameter.

DISCUSSION OF CHANGES
ITS 3.3.4, REMOTE SHUTDOWN SYSTEM

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

LESS RESTRICTIVE CHANGES

- L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.3.3.5 states that the auxiliary shutdown panel monitoring instrumentation listed in Table 3.3-9 shall be OPERABLE. Function 9 of the table lists the Relay Room Positive Ventilation requirement. This requires one channel to be OPERABLE and indicate from 0 to 0.5 inches of water pressure. A CHANNEL CHECK is required once a month and a CHANNEL CALIBRATION is required each refueling. ITS 3.3.4 in Table 3.3.4-1 does not require the Relay Room Positive Ventilation instrumentation channel to be OPERABLE. This changes the CTS requirements by eliminating the Relay Room Ventilation pressure from the required channel requirements.

The purpose of ITS 3.3.4 is to require the necessary instrumentation channels to be OPERABLE to safely maintain the unit in MODE 3 from outside the control room when the control room is uninhabitable. This change is acceptable because the LCO requirements continue to ensure that the process variables are maintained consistent with the safety analyses and licensing basis. The Relay Room is a part of the Main Control Room (MCR)/Emergency Switchgear Room (ESGR) envelope. The MCR/ESGR Emergency Ventilation System (EVS) maintains the technical requirements for this area in ITS LCO 3.7.10, "MCR/ESGR EVS." The Relay Room ventilation pressure is a ventilation system requirement and not a remote shutdown instrumentation parameter. It is not required to maintain the unit in MODE 3 from outside the control room. Therefore, the Relay Room Positive Ventilation pressure is not required and is eliminated. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

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- L.2 *(Category 3 – Relaxation of Completion Time)* Unit 2 CTS 3.3.3.5 requires in Action a, that an inoperable channel(s) will either be returned to OPERABLE status within 7 days, or the unit must be shutdown. Unit 1 CTS 3.3.3.5 requires in Action a, that an inoperable channel(s) will either be returned to OPERABLE status within 30 days, or the unit must be shutdown. ITS LCO 3.3.4 Action A states that with one or more required functions inoperable, the required function will be restored to OPERABLE

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3.3.5-1 ITS N/A
STS N/A
CTS N/A
JFD 2

RAI 3.3.5-1 NUREG-1431 markup, JFD 2 ITS propose to add “required” before “bus” in the LCO for loss of power emergency diesel generator start instrumentation, “Three channels per bus...shall be OPERABLE.”

Comment: This proposed change represents a generic deviation from the NUREG and therefore requires an NEI TSTF before it can be used in the North Anna ITS. Alternatively, a specific discussion of the unique design features or licensing basis discussion may be presented for review.

Response: The Company agrees with the Comment. The word “required” is deleted and the format used in ITS LCOs 3.8 for “shared equipment” is adopted. The LCOs in Chapter 3.8 require the EDGs on this unit and the other unit that are needed to support this unit’s safety function(s) to be OPERABLE. This requires the other unit’s EDG to be supported by its LOP EDG Start Instrumentation for this unit’s safety function(s). This modifies the Specification and Bases sections.

3.3 INSTRUMENTATION

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

LC0 3.3.5 Three channels per bus of the loss of voltage Function and three channels per bus of the degraded voltage Function for the following 4160 VAC buses shall be OPERABLE:

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- a. The Train H and Train J buses; and
- b. One bus on the other unit for each required shared component.

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

ACTIONS

----- NOTE -----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel per bus inoperable.	A.1 -----NOTE----- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ----- Place channel in trip.	72 hours
B. One or more Functions with two or more channels per bus inoperable.	B.1 Restore all but one channel to OPERABLE status.	1 hour

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Enter applicable Condition(s) and Required Action(s) for the associated EDG made inoperable by LOP EDG start instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.3.5.1 -----NOTE----- Verification of setpoint is not required. -----</p> <p>Perform TADOT for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p>	<p>92 days</p> <p>R6 RAI 3.3.5-01 R6</p>
<p>SR 3.3.5.2 Perform CHANNEL CALIBRATION with Allowable Values as follows:</p> <p>a. Loss of voltage Allowable Values ≥ 2935 V and ≤ 3225 V with a time delay of ≤ 3.0 seconds for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p> <p>b. Degraded voltage Allowable Values ≥ 3720 V and ≤ 3772 V with:</p> <p>1. A time delay ≤ 9.0 seconds with a Safety Injection (SI) signal for LCO 3.3.5.a Function; and</p> <p>2. A time delay ≤ 63.0 seconds without an SI signal for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p>	<p>18 months</p> <p>RAI 3.3.5-01 R6 RAI 3.3.5-01 R6 RAI 3.3.5-01 R6</p>
<p>SR 3.3.5.3 Verify ESF RESPONSE TIMES are within limit for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p>	<p>18 months on a STAGGERED TEST BASIS</p> <p>RAI 3.3.5-01 R6</p>

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.

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

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

(continued)

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BASES

APPLICABLE
SAFETY ANALYSES
(continued)

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.

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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.

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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. 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. Loss of the LOP EDG Start Instrumentation Function could result in the delay of safety systems initiation when required. This could lead to unacceptable consequences during accidents. During the loss of offsite power the EDG powers the motor driven auxiliary feedwater pumps. Failure of these pumps to start would leave only one turbine driven pump, as well as an increased potential for a loss of decay heat removal through the secondary system.

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BASES

ACTIONS

A.1 (continued)

The specified Completion Time and time allowed for bypassing one channel are reasonable considering the Function remains fully OPERABLE on every bus and the low probability of an event occurring during these intervals.

B.1

Condition B applies when more than one loss of voltage or more than one degraded voltage channel on an emergency bus is inoperable.

Required Action B.1 requires restoring all but one channel to OPERABLE status. The 1 hour Completion Time should allow ample time to repair most failures and takes into account the low probability of an event requiring an LOP start occurring during this interval.

C.1

Condition C applies to each of the LOP EDG start Functions when the Required Action and associated Completion Time for Condition A or B are not met.

In these circumstances the Conditions specified in LCO 3.8.1, "AC Sources-Operating," for the EDG made inoperable by failure of the LOP EDG start instrumentation are required to be entered immediately. The actions of the LCO provide for adequate compensatory actions to assure unit safety.

SURVEILLANCE
REQUIREMENTS

SR 3.3.5.1

SR 3.3.5.1 is the performance of a TADOT for channels required by LCO 3.3.5.a and LCO 3.3.5.b. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at an 18 month frequency with applicable extensions. This test is performed every 92 days. The test checks trip devices that provide actuation signals directly, bypassing the analog process control equipment.

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