FEB 1 8 1988

Docket Nos. 50-325 and 324

Mr. E. E. Utley Senior Executive Vice President Power Supply and Engineering & Construction Carolina Power & Light Company Raleigh, North Carolina 27602

SUBJECT: ISSUANCE OF CORRECT TECHNICAL SPECIFICATION PAGES (TAC NOS. 60281 AND 60282)

Dear Mr. Utley:

Enclosed are the correct Technical Specification (TS) pages for Operating License Nos. DPR-71 and DPR-62 for Amendment Nos. 114/141 and for Amendment Nos. 115/142. The Amendment Nos., as listed in the lower right hand corner of the pages, were incorrect on some of the pages. All pages are being reissued.

Sincerely,

Ernest D. Sylvester, Project Manager Project Directorate II-1 Division of Reactor Projects I/II

Enclosures:

- 1. Corrected TS pages to Amendment Nos. 114/141
- 2. Corrected TS pages to Amendment Nos. 115/142

cc w/enclosures: See next page

:DRPR JHayes:pda 2/12/88



PM:PD21:DRPR ESylvester 2/10/88

D:PD21:DRPR EAdensam 2/ /88

8802230382 880218 PDR ADOCK 05000324 PDR

Mr. E. E. Utley Carolina Power & Light Company

cc:

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Docket No. 50-325 Docket No. 50-324 NRC PDR Local PDR PD21 r/f S. Varga G. Lainas P. Anderson E. Sylvester OGC-OWF D. Hagan E. Jordan J. Partlow T. Barnhart (4) Wanda Jones E. Butcher H. Shaw ACRS (10) GPA/PA ARM/LFMB

ATTACHMENT TO LICENSE AMENDMENT NO. 114

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 4-1	3/4 4-1
-	3/4 4-1a
-	3/4 4-1b
B 3/4 4-1	B 3/4 4-1

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3/4.4 REACTOR COOLANT STEM

3/4.4.1 RECIRCULATION SYSTEM

RECIRCULATION LOOPS

LIMITING CONDITION FOR OPERATION

3.4.1.1 Two reactor coolant recirculation loops shall be in operation with the cross-tie valve closed, the pump discharge valves OPERABLE, and the pump discharge bypass valves OPERABLE or closed and

- a. Total core flow shall be greater than or equal to 35 million lbs/hr, or
- b. THERMAL POWER shall be less than or equal to the limit specified in Figure 3.4.1.1-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1* and 2*.

ACTION:

- a. With both reactor coolant system recirculation loops not in operation, immediately initiate an orderly reduction of THERMAL POWER so that it is less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours, and restore both loops to operation within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- b. With one reactor coolant system recirculation loop not in operation, immediately initiate either an orderly reduction of THERMAL POWER so that it is less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours or increase core flow so that it is greater than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours, and restore both loops to operation within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- c. With two reactor coolant system recirculation loops in operation and total core flow less than 35 million lbs/hr and THERMAL POWER greater than the limit specified in Figure 3.4.1,1-1:
 - 1. Immediately initiate action to reduce THERMAL POWER so that it is less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours, or
 - 2. Immediately initiate action to increase core flow so that it is greater than 35 million lbs/hr within 2 hours, or
 - 3. Determine the APRM and LPRM neutron flux noise levels within 2 hours, and:
 - a) If the APRM and LPRM neutron flux noise levels are less than three times their established baseline levels or less than 5Z peak-to-peak, continue to determine the noise levels at least once per 24 hours and within 1 hour after the completion of a THERMAL POWER increase of at least 5Z of RATED THERMAL POWER, or
 - b) If the APRM or LPRM neutron flux noise levels are greater than or equal to three times their established baseline levels and greater than 52 peak-to-peak, immediately initiate corrective action and restore the noise levels to within the required limits within 2 hours by increasing coré flow to greater than 35 million lbs/hr and/or by initiating an orderly reduction of

*See Special Test Exception 3.10.4.

BRUNSWICK - UNIT 1

3/4.4 REACTOR COOLANT SYS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

THERMAL POWER to less than or equal to the limit specified in Figure 3.4.1.1-1.

SURVEILLANCE REQUIREMENTS

4.4.1.1.1 Each pump discharge valve and bypass valve shall be demonstrated OPERABLE by cycling each valve through at least one complete cycle of full travel during each COLD SHUTDOWN which exceeds 48 hours, if not performed in the previous 31 days.

4.4.1.1.2 Each pump discharge bypass valve, if not OPERABLE, shall be verified to be closed at least once per 31 days.

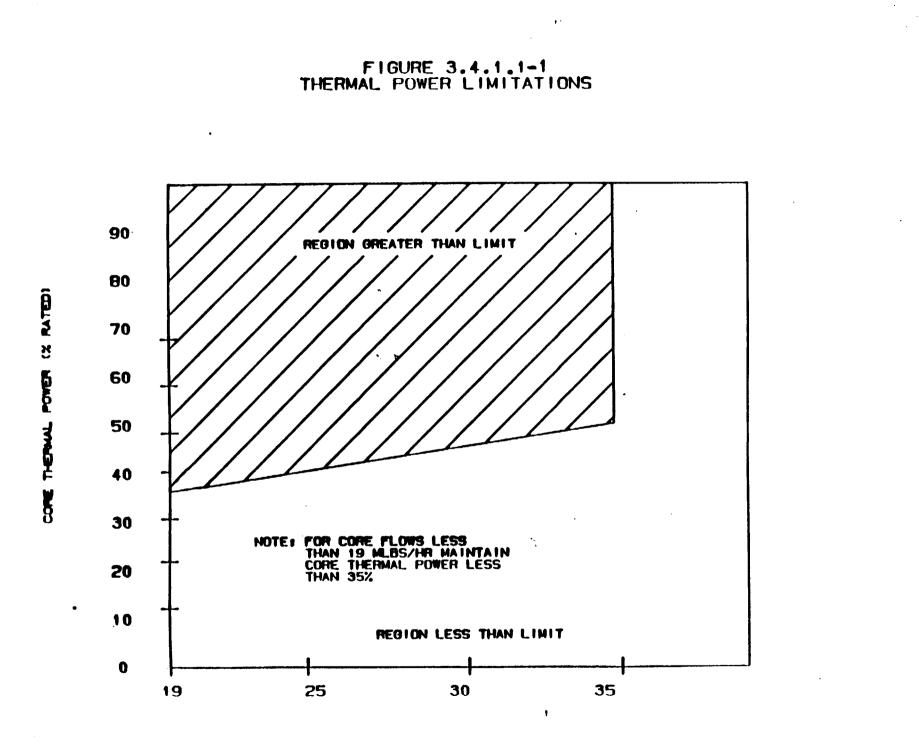
4.4.1.1.3 Establish baseline APRM and LPRM neutron flux noise values at a point below the 100% rated rod line during startup testing following each refueling outage.

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BRUNSWICK - UNIT 1

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CORE FLOW (MLBS/HR)

BIUSTICX - WIT 1

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Amendment No. 114

3/4.4 REACTOR COOLANT SYSTEM

BASES

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3/4.4.1 RECIRCULATION SYSTEM

Operation with a reactor core coolant recirculation loop inoperable is restricted until an evaluation of the performance of the ECCS during one loop operation has been performed, evaluated, and determined to be acceptable.

An inoperable jet pump is not, in itself, a sufficient reason to declare a recirculation loop inoperable, but it does present a hazard in case of a design basis accident by increasing the blowdown area and eliminating the capability of reflooding the core. Thus, the requirement for shutdown of the facility with a jet pump inoperable.

In order to prevent undue stress on the vessel nozzles and bottom head region, the recirculation loop temperatures should be within 50°F of each other prior to start-up of an idle loop.

Since the coolant in the bottom of the vessel is at a lower temperature than the water in the upper regions of the core, undue stress on the vessel would result if the temperature difference were greater than 145°F.

Neutron flux noise limits are established to ensure early detection of limit cycle neutron flux oscillations. BWR cores typically operate with neutron flux noise caused by random boiling and flow noise. Typical neutron flux noise levels of 1 to 12% of rated power (peak-to-peak) have been reported for the range of low to high recirculation loop flow during both single and dual recirculation loop operation. Neutron flux noise levels significantly larger than these values are considered in the thermal/mechanical fuel design and are found to be of negligible consequence. In addition, stability tests at operating BWR's have demonstrated that when stability related neutron flux limit cycle oscillations occur they result in peak-to-peak neutron flux limit cycles 5 to 10 times the typical values. Therefore, actions taken to reduce neutron flux noise levels exceeding three (3) times the typical value are sufficient to ensure early detection of limit cycle neutron flux oscillations.

Data to establish baseline APRM and LPRM neutron flux noise values is obtained at a point below the 100% rated rod line. A minimum of two detectors of one LPRM string per core octant and two detectors of one LPRM string near the center of the core should be monitored. Detectors used for monitoring should be selected to provide core wide representation. Substitutions are permitted for inoperable LPRM detectors.

These specifications are based on the guidance of General Electric SIL \$380, Rev. 1, 2-10-84.

BRUNSWICK - UNIT 1

ATTACHMENT TO LICENSE AMENDMENT NO. 141

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FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
3/4 4-1	3/4 4-1
-	3/4 4-1a
-	3/4 4-1b
B 3/4 4-1	B 3/4 4-1

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 RECIRCULATION SYSTEM

RECIRCULATION LOOPS

LIMITING CONDITION FOR OPERATION

3.4.1.1 Two reactor coolant recirculation loops shall be in operation with the cross-tie valve closed, the pump discharge valves OPERABLE, the pump discharge bypass valves OPERABLE or closed and

- a. Total core flow shall be greater than or equal to 35 million lbs/hr, or
- b. THERMAL POWER shall be less than or equal to the limit specified in Figure 3.4.1.1-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1* and 2*.

ACTION:

:

- a. With both reactor coolant systèm recirculation loops not in operation, immediately initiate an orderly reduction of THERMAL POWER so that it is less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours, and restore both loops to operation within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- b. With one reactor coolant system recirculation loop not in operation, immediately initiate either an orderly reduction of THERMAL POWER so that it is less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours or increase core flow so that it is greater than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours, and restore both loops to operation within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- c. With two reactor coolant system recirculation loops in operation and total core flow less than 35 million lbs/hr and THERMAL POWER greater than the limit specified in Figure 3.4.1.1-1:
 - 1. Immediately initiate action to reduce THERMAL POWER so that it is less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours, or
 - 2. Immediately initiate action to increase core flow so that it is greater than 35 million 1bs/hr within 2 hours, or
 - 3. Determine the APRM and LPRM neutron flux noise levels within 2 hours, and:
 - a) If the APRM and LPRM neutron flux noise levels are less than three times their established baseline levels or less than 5% peak-to-peak, continue to determine the noise levels at least once per 24 hours and within 1 hour after the completion of a THERMAL POWER increase of at least 5% of RATED THERMAL POWER, cr
 - b) If the APRM or LPRM neutron flux noise levels are greater than or equal to three times their established baseline levels and greater than 5% peak-to-peak, immediately initiate corrective action and restore the noise levels to within the required limits within 2 hours by increasing core flow to greater than 35 million lbs/hr and/or by initiating an orderly reduction of

*See Special Test Exception 3.10.4.

BRUNSWICK - UNIT 2

3/4.4 REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

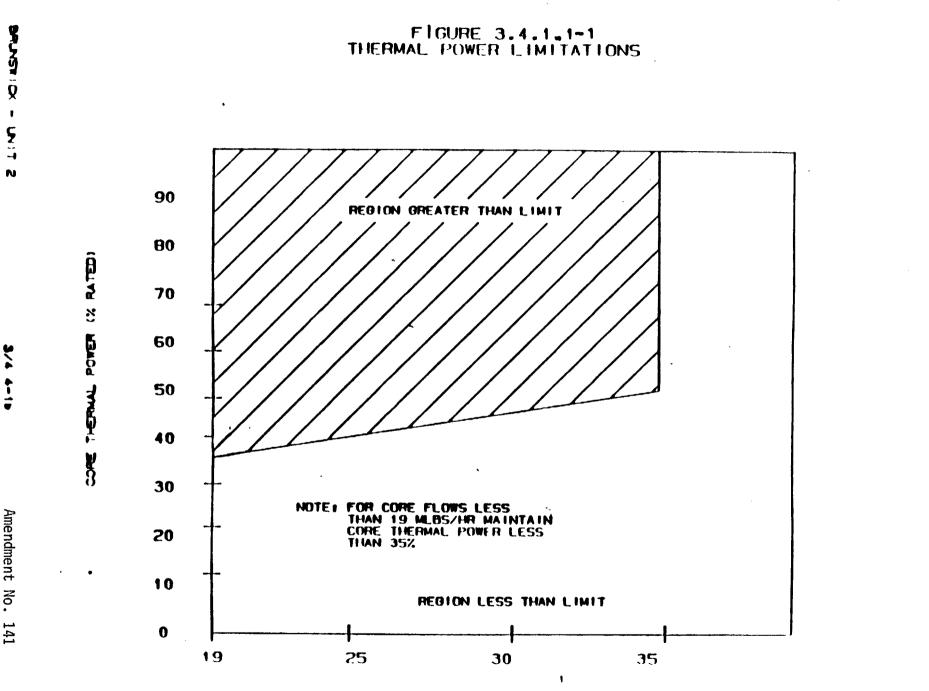
THERMAL POWER to less than or equal to the limit specified in Figure 3.4.1.1-1.

SURVEILLANCE REQUIREMENTS

4.4.1.1.1 Each pump discharge value and bypass value shall be demonstrated OPERABLE by cycling each value through at least one complete cycle of full travel during each COLD SHUTDOWN which exceeds 48 hours, if not performed in the previous 31 days.

4.4.1.1.2 Each pump discharge bypass valve, if not OPERABLE, shall be verified to be closed at least once per 31 days.

4.4.1.1.3 Establish baseline APRM and LPRM neutron flux noise values at a point below the 1002 rated rod line during startup testing following each refueling outage.



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CORE FLOW (MLBS/HR)

Amendment No. 141

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BASES

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3/4.4.1 RECIRCULATION SYSTEM

Operation with a reactor core coolant recirculation loop inoperable is restricted until an evaluation of the performance of the ECCS during one loop operation has been performed, evaluated, and determined to be acceptable.

An inoperable jet pump is not, in itself, a sufficient reason to declare a recirculation loop inoperable, but it does present a hazard in case of a design basis accident by increasing the blowdown area and eliminating the capability of reflooding the core. Thus, the requirement for shutdown of the facility with a jet pump inoperable.

In order to prevent undue stress on the vessel nozzles and bottom head region, the recirculation loop temperatures should be within 50° F of each other prior to start-up of an idle loop.

Since the coolant in the bottom of the vessel is at a lower temperature than the water in the upper regions of the core, undue stress on the vessel would result if the temperature difference were greater than 145°F.

Neutron flux noise limits are established to ensure early detection of limit cycle neutron flux oscillations. BWR cores typically operate with neutron flux noise caused by random boiling and flow noise. Typical neutron flux noise levels of 1 to 12% of rated power (peak-to-peak) have been reported for the range of low to high recirculation loop flow during both single and dual recirculation loop operation. Neutron flux noise levels significantly larger than these values are considered in the thermal/mechanical fuel design and are found to be of negligible consequence. In addition, stability tests at operating BWR's have demonstrated that when stability related neutron flux limit cycle oscillations occur they result in peak-to-peak neutron flux limit cycles 5 to 10 times the typical values. Therefore, actions taken to reduce neutron flux noise levels exceeding three (3) times the typical value are sufficient to ensure early detection of limit cycle neutron flux oscillations.

Data to establish baseline APRM and LPRM neutron flux noise values is obtained at a point below the 1002 rated rod line. A minimum of two detectors of one LPRM string per core octant and two detectors of one LPRM string near the center of the core should be monitored. Detectors used for monitoring should be selected to provide core wide representation. Substitutions are permitted for inoperable LPRM detectors.

These specifications are based on the guidance of General Electric SIL #380, Rev. 1, 2-10-84.

BRUNSWICK - UNIT 2

ATTACHMENT TO LICENSE AMENDMENT NO. 115

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove Pages 3/4 3-11 3/4 3-12 3/4 3-13

3/4 3-11 3/4 3-12 3/4 3-13 3/4 3-14 3/4 3-15 3/4 3-16 3/4 3-25 3/4 3-29b

3/4 3-29c

Insert Pages

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TABLE 3.3.2-1

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ISOLATION ACTUATION INSTRUMENTATION

RIP P	PUN	CTION	AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
. <u>P</u> R	RIM	ARY CO	NTAINMENT ISOLATION		:		,
	•	React	tor Vessel Water Level - Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)	2, 6, 7, 8	2	1, 2, 3	20 20
		2.	Low, Level 2 (B21-LT-NO24A-1,B-1, and B21-LT-NO25A-1,B-1)	1, 3	2	1, 2, 3	20
			(B21-LTH-NO24A-1,B-1 and B21-LTH-NO25A-1,B-1)	Ref			20
b	b.	((mell Pressure - High ;71-pt-N002A,B,C,D) ;71-ptH-N002A-1,B-1,C-1,D-1)	2, 6, 7	2	1, 2, 3	20
c	c.	1.	n Steam Line Radiation - High (D12-RH-K603A,B,C,D)	1	2	1, 2, 3	21 22
		2.	Pressure - Low (B21-PT-NO15A,B,C,D) (B21-PTH-NO15A-1,B-1,C-1,D-1)	1	2 2/line	1	22
	•	3.	Flow - High (B21-PDT-NOO6A,B,C,D; B21-PDT-NOO7A,B,C,D; B21-PDT-NOO8A,B,C,D; B21-PDT-NOO9A,B,C,D)	1	271100		
			(B21-PDTH-NOO6A-1,B-1,C-1,D-1) B21-PDTH-NOO7A-1,B-1,C-1,D-1 B21-PDTH-NOO8A-1,B-1,C-1,D-1 B21-PDTH-NOO9A-1,B-1,C-1,D-1	;	,		

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TABLE 3.3.2-1 (Continued)

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ISOLATION ACTUATION INSTRUMENTATION

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TRIP FU	NCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)	APPLICABLE OPERATIONAL (c) CONDITION	ACTION		
PRIMARY	CONTAINMENT ISOLATION (Continued)					•	
d.	Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D;	÷ 1	2(d)	1, 2, 3	21	1	(
	B21-TS-NO11A,B,C,D; B21-TS-NO12A,B,C,D; B21-TS-NO13A,B,C,D)	4	2	1, 2 ^(e)	21	I	
e.	Condenser Vacuum - Low (B21-PT-N056A,B,C,D) (B21-PTM-N056A-1,B-1,C-1,D-1)	1	2			1	
f.	Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D;	1	4(d)	1, 2, 3	21	ł	
	B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)		• • • •				

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BRUNSWICK - UNIT 1

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TABLE 3.3.2-1 (Continued)

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ISOLATION ACTUATION INSTRUMENTATION

TRIP	FUNC	TION AND INSTRUMENT NUMBER	VALVE GROUPS Operated by Signal(a)	MINIMUN NUMBER Operable Channels Per Trip System(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
2. 5	FCON	IDARY CONTAINMENT ISOLATION Reactor Building Exhaust Radiation - High	6	1	1, 2, 3, 5, and*	23
1	Ь.	(D12-RM-N010A,B) Drywell Pressure - High (C71-PT-N002A,B,C,D) (C71-PTH-N002A-1,B-1,C-1,D-1)	2, 6, 7	2	1, 2, 3	23
	c.	Reactor Vessel Water Level - Low, Level 2 (B21-LT-NO24A-1,B-1 and B21-LT-NO25A-1,B-1)	1, 3	2	1, 2, 3	23
		(B21-LTM-NO24A-1,B-1 and B21-LTM-NO25K-1,B-1)				
3.	READ	TOR WATER CLEANUP SYSTEM ISOLATION			1, 2, 3	24
	4.	& Flow - High (G31-dFS-N603-1A,1B)	3	- - -	1, 2, 3	24
	ь.	Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	3	2	1, 2, 3	24
	c.	Area Ventilation A Temp High (C31-TS-N602A,B,C;D,E,F)	3 3 (f)	- NA	1, 2, 3	24
	d.	SLCS Initiation (C41A-S1)	J			
	e.	Reactor Vessel Water Level - Low, Level 2 (B21-LT-NO24 A-1,B-1 and B21-LT-NO25 A-1,B-1)	1, 3	, 2	1, 2, 3	24
		(B21-LTH-NO24 A-1,B-1 and Hall TTM-NO25 A-1 B-1)				

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		ISOLATIO	N ACTUATION INST	TRUMENTATION		
IP PUN	CTION	AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINTMUN NUMBER Operable Channels Per Trip System(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
	STAN	DBY COOLING SYSTEMS ISOLATION	m Isolation 4	1	1, 2, 3	25
		(E41-PDTS-N004-2; E41-PDTS-N005-2)				
	2.	HPCI Steam Line High Flow Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA	1	1, 2, 3	25 25
	3.	HPCI Steam Supply Pressure - Lo (E41-PSL-N001A,B,C,D)	w 4	2	xy -y -	
	4.	HPCI Steam Line Tunnel Temperature - High (E41-TS-3315; E41-TS-3315; E41-TS-3316; E41-TS-3316; E41-TS-3318; E41-TS-3354;	•	2	1, 2, 3	25
	5.	E41-TS-3488; E41-TS-3489) Bus Power Monitor	NA(g)	1/bu s	1, 2, 3	26
	5.	(E41-K55 and E41-K56)	4	2	1, 2, 3	25

TABLE 3.3.2-1 (Continued) SOLATION ACTUATION INSTRUMENTATION

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BRUNSWICK - UNIT 1

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Amendment No. £9, 115

TABLE 3.3.2-1

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ISOLATION ACTUATION INSTRUMENTATION

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	ON ACTUATION INST VALVE CROUPS OPERATED BY SIGNAL(4)	MINIMUM NUMBER Operable Channels Per <u>Trip System(b)(c)</u>	APPLICABLE OPERATIONAL CONDITION	ACTION	
IP FUNCTION AND INSTRUMENT NUMBER	NA (g)	1/bus	1, 2, 3	26	
5. Bus Power Monitor (E51-K42 and E51-K43)	•	2	1, 2, 3	25	
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-NO12A,B,C,D)	5	•	1, 2, 3	25	
7. RCIC Steam Line Ambient Temp -	N. S.	1	1, 2, 5		
ligh /==1_TS=N603A.B)	u:	1	1, 2, 3	25	
B. RCIC Steam Line Area & Temp - 1 (E51-dTS-N604A,B)	ur Bro		1, 2, 3	25	
9. RCIC Equipment Room Ambient Temp - High (E51-TS-N602A,B)	5	1	1, 2, 3	25	
(ESI-IS-NOOLA, B) 10. RCIC Equipment Room & Temp - H (ESI-dTS-N601A, B)	tigh 5	·. ·			
5. SHUTDOWN COOLING SYSTEM ISOLATION			1	27	
a. Reactor Vessel Water Level -	2, 6, 7, 8	2	1, 2, 3		
Low, Level 1 (B21-LT-NO17A-1,B-1,C-1,D-1) (B21-LTM-NO17A-1,B-1,C-1,D-1)	7, 8	۱	1, 2, 3	27	
b. Reactor Steam Dome Pressure- High (B32-PS-NO18A,B)		١	1		

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TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTIONS

- ACTION 20 Be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 21 Be in at least START-UP with the main steam line isolation values closed within 2 hours or be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the next 30 hours.
- ACTION 22 Be in at least START-UP within 2 hours.
- ACTION 23 Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within one hour.
- ACTION 24 Isolate the reactor water cleanup system.
- ACTION 26 Verify power availability to the bus at least once per 12 hours.
- ACTION 27 ~ Deactivate the shutdown cooling supply and reactor vessel head spray isolation values in the closed position until the reactor steam dome pressure is within the specified limits.

NOTES

- * When handling irradiated fuel in the secondary containment.
- (a) See Specification 3.6.3.1, Table 3.6.3.1-1 for values in each value group.
- (b) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.
- (c) With only one channel per trip system, an inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, the inoperable channel shall be restored to OPERABLE status within 2 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.
- (d) A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE.
- (e) With reactor steam pressure > 500 psig.
- (f) Closes only RWCU outlet isolation valve.
- (g) Alarm only.

TABLE 4.3.2-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

.

TRIP	FUN	ICTION	AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED	
1. 1	PRIM	ARY C	DNTAINMENT ISOLATION					
-		React	tor Vessel Water Level -	-				
		1.	Low, Level 1 (B21-LT-NO17A-1,B-1,C-1,D-1) (B21-LTM-NO17A-1,B-1,C-1,D-1)		NA H	<mark>к</mark> (Б) М	1, 2, 3 1, 2, 3	
		2.	Low, Level 2 (B21-LT-NO24A-1,B-1 and B21-LT-NO25A-1,B-1)	к NA ^(а)	NA	R(P)	1, 2, 3	
			(B21-LTM-NO24A-1,B-1 and B21-LTM-NO25A-1,B-1)	D	м	M	1, 2, 3	
	b.	(0	ell Pressure - High 71-PT-N002A,B;C,D) 71-PTM-N002A-1,B-1,C-1,D-1)	NA ⁽ m) D	NA M	_R (Ъ) Н	1, 2, 3 1, 2, 3	1
	c.	Main 1.	Steam Line Radiation - High (D12-RH-K603A,B,C,D)	D	W	R(d)	1, 2, 3	ł
		2.	Pressure - Low (B21-PT-NO15A,B,C,D) (B21-PTM-NO15A-1,B-1,C-1,D-1)	NA ^(a)) D	NA H	. _R (Ъ) М	1 1	
		3.	Flow - High (B21-PDT-NOO6A,B,C,D; B21-PDT-NOO7A,B,C,D; B21-PDT-NOO8A,B,C,D; B21-PDT-NOO9A,B,C,D)	NA(A)	NA	<mark>қ</mark> (Ъ)	1	
			(B21-PDTM-NOO6A-1,B-1,C-1,D- B21-PDTM-NOO7A-1,B-1,C-1,D- B21-PDTM-NOO8A-1,B-1,C-1,D- B21-PDTM-NOO9A-1,B-1,C-1,D-	1; 1;	н '	м	1	

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TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

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	INCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
	Reactor Vessel Water Level - Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTH-N017A-1,B-1,C-1,D-1)	NA ^(a) D	NA M	R(b) M	1, 2, 3 1, 2, 3
b.	Bone Pressure -	NA S	s/U ^(с) , м	R	1, 2, 3

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TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES

- * When handling irradiated fuel in the secondary containment.
- # When reactor steam pressure > 500 psig.
- (a) The transmitter channel check is satisfied by the trip unit channel check. A separate transmitter check is not required.
- (b) Transmitters are exempted from the monthly channel calibration.

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- (c) If not performed within the previous 31 days.
- (d) Testing shall verify that the mechanical vacuum pump trips and the mechanical vacuum pump line valve closes.

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ATTACHMENT TO LICENSE AMENDMENT NO. 142

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove Pages

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Insert Pages

3/4 3-11 3/4 3-12 3/4 3-13 3/4 3-14 3/4 3-15 3/4 3-16 3/4 3-16a 3/4 3-25
3/4 3-25 3/4 3-29c

TABLE 3.3.2-1

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	ISOLATIO	N ACTUATION INST	RIMENTATION		
RTP FU	NCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTIO
	MARY CONTAINMENT ISOLATION		:		
	Reactor Vessel Water Level - 1. Low, Level 1 (N21-LT-W017A-1.8-1,C-1,D-1)	2, 6, 7, 8	2	1, 2, 3	20
	(B21-LTM-N017A-1,B-1,C-1,D-1)	1, 3	2	1, 2, 3	20
	(B21-LT-NO24A-1,B-1, BAA B21-LT-NO25A-1,B-1)	2			
	(B21-LTM-NO24A-1,B-1, and B21-LTM-NO25A-1,B-1)		•	1, 2, 3	20
b.	Drywell Pressure - High (C72-PT-N002A,B,C,D) (C72-PTM-N002A-1,B-1,C-1,D-1)	2,6,7	2		
c.	Nein Steam Line	1	2	1, 2, 3 ^(h)	21
	1. Rediation - High (D12-RM-K603A,B,C,D)	1	2	1	22
	2. Pressure - Low (B21-PT-N015A,B,C,D) (B21-PTM-N015A-1,B-1,C-1,D-1)	I	• • • • • •	1	22
	J. Flow - High (B21-PDT-N006A,B,C,D; B21-PDT-N007A,B,C,D; B21-PDT-N008A,B,C,D; B21-PDT-N009A,B,C,D)	1	2/line	•	
	(B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1;		, . ,		

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Amendment No. **4**5, **7**8, **3**7, **1**42

		APPLICABLE 3.18A31.199A	HINING MANUER	TZNI NOITAUTDA NOI	1V10\$1
	NOITON	CONDITION OPERATIONAL	DER TRIP SYSTEM(D)(C)	VALVE CROUPS OPERATED BY VALVE CROUPS	ABBRUN THERMUNERS ON AND ENGLAND THE
	17	۲ ک	3	ι	PRIMARY CONTAINMENT 190LATION (Continued) A. Plow - Migh (B21-PDTS-NOO6A-2; (B21-PDTS-NOO78-2; (B21-PDTS-NOO78-2;
	12	1* 5* 3	(P) ^Z	, , ,	d. Main Steam Line Tunnel B21-PDTS-N009C-2; Temperature - High Temperature - High
۱	17	(°) ² (°)	۲.		B21-12-N013V'B'C'D) B21-12-N013V'B'C'D; B21-12-N010V'B'C'D; (B21-12-N010V'B'C'D;
١				ĩ	e. Condenser Vacuum – Low (821-PT-NO56A-1,8-1,C-1,D-1) (821-PT-NO56A-1,8-1,C-1,D-1) (821-PTH-NO56A-1,8-1,C-1,D-1)
1	١٤	٤ '٤ '١	ن خ (P) ^۷	·	Example a filding Area Turbine Building Area Tempersture - High B21-T5-3232A, B,C,D; B21-T5-3232A, B,C,D; B21-T5-3232A, B,C,D; B21-T5-3231A, B,C,D; B21-T5-323A, B

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Amendment No. **A.B. 78, 97**, 142

	1 1	2-1	(Conti	inued)
IADLL		** *		

ISOLATION ACTUATION INSTRUMENTATION

TRIP	PUR	ICTION AND INSTRUMENT NUMBER	VALVE CROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(APPLICABLE OPERATIONAL CONDITION	ACTION
		DWDARY CONTAINMENT ISOLATION		;		
		Reactor Building Exhaust Radiation - High	6	1	1, 2, 3, 5, and*	23
		(D12-RH-W010A,B)	2, 6, 7	2	1, 2, 3	23
	b.	Drywell Pressure - High (C72-PT-N002A,B,C,D) (C72-PTM-N002A-1,B-1,C-1,D-1)	~ 2, 0, 1	:: <u>.</u> ,		
	c.	Reactor Vessel Water Level - Low, Level 2 (B21-LT-W024A-1,B-1, and B21-LT-W025A-1,B-1)	15, 3	2	1, 2, 3	23
		(B21-LTM-N024A-1,B-1, and B21-LTM-N025A-1,B-1)		·		
3.	RE	ACTOR WATER CLEANUP SYSTEM ISOLATION		1	1, 2, 3	24
	e .	(C31-dFS-N603-1A,1B)	3	2	1, 2, 3	24
	Ъ.	(C31-TS-N600A, B, C, D, E, F)	3	2	1, 2, 3	24
	C	Aron Ventilation & Temp High (G31-TS-N602A,B,C,D,E,F)			1, 2, 3	24
	đ	man t-thicking (CAIA-SI)	3(ť)	NA 2	1, 2, 3	24
		Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1, and B21-LT-N025A-1,B-1)	1, 3	1		
		(B21-LTM-NO24A-1,B-1, and B21-LTM-NO25A-1,B-1)				

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			T 501.AT10	N ACTUATION INST	RUMENTATION		
11 P	PU	NCT10	N AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTIO
. (0	r st/	NDBY COOLING SYSTEMS ISOLATION		·.		
	-	ui -)	Pressure Coolant Injection System	Isolation	1	1, 2, 3	25
4		1.	HPCI Steem Line Flow - High (E41-PDT-N004;	•	·	1, 1, 5	
			E41-PDT-N005)	**			
			(E41-PDTS-N004-2; E41-PDTS-N005-2)				25
		2.	HPCI Steam Line High Flow Time Delay Relay (E41-TDR-K33)	NA	1	1, 2, 3	
			E41-TDR-K43)	4	2	1, 2, 3	25
			HPCI Steam Supply Pressure - Low (E41-PSL-NO01A,B,C,D)	•			
		4.	HPCI Steam Line Tunnel Temperature - High	4	2	1, 2, 3	25
			(E41-TS-3314; E41-TS-3315;				
			E41-TS-3316; E41-TS-3317; E41-TS-3318;				
		•	E41-TS-3354; E41-TS-3488; E41-TS-3489)		• • •	1, 2, 3	26
		5.		NA ^(g)	1/bus	.,	
		6.	, HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-NO12A,B,C,D)	4	. 7	1, 2, 3	25

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BRUNSWICK - UNIT 2

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		N ACTUATION INST	RUMENTATION		
	N AND INSTRUMENT NIMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTIC
IP FUNCTION AND INSTRUMENT NUMBER		NA ^(g)	1/bus	1, 2, 3	26
5.	Bus Power Honitor (E51-K42 and E51-K43)		:		
6.	RCIC Turbine Exhaust Disphragm Pressure - High	5	2	1, 2, 3	25
	(E51-PS-N012A, B, C, D)				
7.	RCIC Steam Line Ambient Temp	3. 5	1	1, 2, 3	25
	High (E51-TS-N603A,B)	-	::		
8.	RCIC Steam Line Area & Temp Hi (E51-dTS-N604A,B)	8h 5 1 1	1	1, 2, 3	25
9.	RCIC Equipment Room Ambient	5	1	1, 2, 3	25
	Temp High (E51-TS-N602A,B)	-	1	1, 2, 3	25
10.	RCIC Equipment Room & Temp Hig (E51-dTS-N601A,B)	h 5		- • - • -	
SHUTDO	W COOLING SYSTEM ISOLATION				
a. Re	actor Vessel Water Level - E Low, Level 1	2, 6, 7, 8	2	1, 2, 3	27
	(B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)				
b. Re	actor Steam Dome Pressure - High (B32-PS-N018A,B)	7, 8	1	1, 2, 3	27

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TABLE 3.3.2-1 (Continued)

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TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTIONS

- ACTION 20 Be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 21 Be in at least STARTUP with the main steam line isolation valves closed within 2 hours or be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the next 30 hours.
- ACTION 22 Be in at least STARTUP within 2 hours.
- ACTION 23 Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within one hour.
- ACTION 24 Isolate the reactor water cleanup system.
- ACTION 25 Close the affected system isolation valves and declare the affected system inoperable.
- ACTION 26 Verify power availability to the bus at least once per 12 hours.
- ACTION 27 Descrivate the shutdown cooling supply and reactor vessel head spray isolation valves in the closed position until the reactor steam dome pressure is within the specified limits.

NOTES

- When handling irradiated fuel in the secondary containment.
- a. See Specification 3.6.3.1, Table 3.6.3.1-1 for valves in each valve group.
- b. A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.
- c. With only one channel per trip system, an inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to-occur. In these cases, the inoperable channel shall be restored to OPERABLE status within 2 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.
- d. A channel is OPERABLE if 2 of 4 instruments in the channel are OPERABLE.
- e. With reactor steam pressure > 500 psig.
- f. Closes only EWCU outlet isolation walve.
- g. Alarm only.

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Amendment No. 51, 142

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TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTIONS

(h) Within 24 hours prior to the planned start of the hydrogen injection test, with reactor power at greater than 222 of rated thermal power, the normal full-power radiation background level and associated trip setpoints may be changed based on a calulated value of the radiation level expected during the test. The background radiation level and associated trip setpoints may be adjusted during the test program based on either calculations or measurements of actual radiation levels resulting from hydrogen injection. The background radiation level shall be determined and the associated trip setpoints shall be set within 24 hours of re-establishing normal radiation levels after completion of the hydrogen injection test or within 12 hours of establishing reactor power levels below 222 of rated thermal power, while these functions are required to be operable.

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TABLE 4.3.2-1

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	JEOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS						
TRIP FUN		CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED		
	ARY CONTAINMENT ISOLATION			12			
1. <u>rkin</u>	Reactor Vessel Water Level -						
-	1. Low, Level 1 (B21-LT-W017A-1,B-1,C-1,D-1) (B21-LTM-W017A-1,B-1,C-1,D-1)	WA ^(a)	NA H	<mark>R</mark> (Б) Н	1, 2, 3 1, 2, 3		
	2. Low, Level 2 (B21-LT-NO24A-1,B-1 and B21-LT-NO25A-1,B-1)	MA(=)	NA	• _R (b)	1, 2, 3		
	(B21-LTW-NO24A-1,B-1 and B21-LTH-NO25A-1,B-1)	D.	н	М	1, 2, 3		
b.	Drywell Pressure - High (C72-PT-NO02A,B,C,D) (C72-PTH-NO02A-1,B-1,C-1,D-1)	NA ⁽ a) · D	NA M	<mark>қ</mark> (Б) М	1, 2, 3 1, 2, 3		
¢.	Wein Steem Line 1. Redistion - High (D12-RM-K603A,B,C,D)	D	W	R(d)	1, 2, 3		
	2. Pressure - Low (B21-PT-NO15A,B,C,D) (B21-PTM-NO15A-1,B-1,C-1,D-1	WA ^(#)) D	NA H	<mark>қ</mark> (Б) И	1 1		
	<pre>3. Plow - High</pre>	. _{NA} (a)	NA	R(P)	1		
	(B21-PDTH-NOO6A-1,B-1,C-1,D- B21-PDTH-NOO7A-1,B-1,C-1,D- B21-PDTH-NOO8A-1,B-1,C-1,D- B21-PDTH-NOO9A-1,B-1,C-1,D-	-1; -1;	H	H	-		

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TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES

- * When handling irradiated fuel in the secondary containment.
- (a) The transmitter channel check is satisfied by the trip unit channel check. A separate transmitter check is not required.
- (b) Transmitters are exempted from the monthly channel calibration.
- (c) If not performed within the previous 31 days.
- (d) Testing shall verify that the mechanical vacuum pump trips and the mechanical vacuum pump line valve closes.

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