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TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATIONS

~~(a) A channel may be placed in an inoperable status for up to six hours for required surveillance without placing the trip system in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.~~

- Insert
- (b) The "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn* and shutdown margin demonstrations are being performed per Specification 3.10.3.
 - (c) An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.
 - (d) This function shall be automatically bypassed when the reactor mode switch is not in the Run position and reactor pressure < 1037 psig.
 - (e) This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.
 - (f) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
 - (g) Also actuates the standby gas treatment system.
 - (h) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
 - (i) This function shall be automatically bypassed when turbine first stage pressure is < 165 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.
 - (j) Also actuates the EOC-RPT system.

revised by
602-93-180
dated 7/9/93

*Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.

- (a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Limiting Conditions For Operation/Action Statement may be delayed for up to 6 hours provided the associated function maintains RPS trip capability.

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION (a)</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
1. Intermediate Range Monitors:				
a. Neutron Flux - High	S/U(b), S S	S/U(c), W W	R R	2 3, 4, 5
b. Inoperative	N.A.	W	N.A.	2, 3, 4, 5
2. Average Power Range Monitor ^(f) :				
a. Neutron Flux - Upscale, Setdown	S/U(b), S S	S/U(c), W W	SA SA	2 3, 5
b. Flow Biased Simulated Thermal Power - Upscale	S,D(g)	S/U(c), Q	W(d)(e), SA, R(h)	1
c. Fixed Neutron Flux - Upscale	S	S/U(c), Q	W(d), SA	1
d. Inoperative	N.A.	Q	N.A.	1, 2, 3, 5
3. Reactor Vessel Steam Dome Pressure - High	S N.A.	Q	R	1, 2
4. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2
5. Main Steam Line Isolation Valve - Closure	N.A.	Q	R	1
6. DELETED				
7. Primary Containment Pressure - High	N.A.	Q	R	1, 2

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TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTION STATEMENTS

- ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- ACTION 21 - Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- ACTION 22 - Close the affected system isolation valves within 1 hour and declare the affected system inoperable.
- ACTION 23 - Be in at least STARTUP within 6 hours.
- ACTION 24 - Restore the manual initiation function to OPERABLE status within 8 hours or close the affected system isolation valves within the next hour and declare the affected system inoperable or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- ACTION 25 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.
- ACTION 26 - Lock close or close, as applicable, the affected system isolation valves within 1 hour and declare the affected system inoperable.

TABLE NOTATIONS

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*May be bypassed with reactor steam pressure \leq (1037) psig and all turbine stop valves closed.

**When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

#During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

(a) A channel may be placed in an inoperable status for up to 6 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.

(b) Also actuates the standby gas treatment system.

(c) DELETED

(d) A channel is OPERABLE if 2 of 4 detectors in that channel are OPERABLE.

(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.

(f) Closes only RWCU system outboard isolation valve RWCU-V-4.

(g) Only valves RHR-V-123A and RHR-V-123B in Valve Group 5 are required for primary isolation.

(h) Manual initiation isolates RCIC-V-8 only and only with a coincident reactor vessel level-low, level 3.

(i) Not required for RHR-V-8 when control is transferred to the alternate remote shutdown panel during operational conditions 1, 2 & 3 and the isolation interlocks are bypassed. When RHR-V-8 control is transferred to the remote shutdown panel under operational modes 1, 2, and 3 the associated key lock switch will be locked with the valve in the closed position. Except RHR-V-8 can be returned to, and operated from, the control room, with the interlocks and automatic isolation capability reestablished in operational conditions 2 and 3 when reactor pressure is less than 135 psig.

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page

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- (a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Limiting Conditions For Operation/Action statement may be delayed for up to 6 hours provided the associated function maintains the isolation capability.

TABLE 3.3.3-1 (Continued)
EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
<u>C. DIVISION 3 TRIP SYSTEM</u>			
<u>1. HPCS SYSTEM</u>			
a. Reactor Vessel Water Level - Low, Low, Level 2	2(b)	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2(b)	1, 2, 3	30
c. Reactor Vessel Water Level-High, Level 8	2(c)	1, 2, 3, 4*, 5*	32
d. Condensate Storage Tanks Level-Low	2(d)	1, 2, 3, 4*, 5*	36
e. Suppression Pool Water Level-High	2(d)	1, 2, 3, 4*, 5*	36
f. HPCS System Flow Rate-Low (Minimum Flow)	1	1, 2, 3, 4*, 5*	31
g. Manual Initiation	1/division	1, 2, 3, 4*, 5*	34

	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
<u>D. LOSS OF POWER</u>					
1. 4.16 kV Emergency Bus Under-voltage (Loss of Voltage)	2/bus	1/bus	2/bus	1, 2, 3, 4**, 5**	37
2. 4.16 kV Emergency Bus Under-voltage (Degraded Voltage Division 1 and 2)	3/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	38
3. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage Division 3)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	38

TABLE NOTATIONS

- (a) ~~A channel may be placed in an inoperable status for up to 6 hours during periods of 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.~~
- (b) Also activates the associated division diesel generator.
- (c) Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic.
- (d) Provides signal to HPCS pump suction valves only.
- * When the system is required to be OPERABLE per Specification 3.5.2 or 3.5.3.
- ** Required when ESF equipment is required to be OPERABLE.
- # Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 128 psig.

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- (a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Limiting Conditions For Operation/Action statement may be delayed for up to 6 hours provided the associated function or the redundant function maintains ECCS initiation capability.

TABLE 3.3.4.1-1ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)</u>
1. Reactor Vessel Water Level - Low Low, Level 2	2
2. Reactor Vessel Pressure - High	2

~~(a) One channel may be placed in an inoperable status for up to 2 hours for required surveillance provided the other channel is OPERABLE.~~

Insert
↑

- (a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Limiting Conditions For Operation/Action Statement may be delayed for up to 2 hours provided the associated function maintains ATWS-RPT trip capability.

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)</u>
1. Turbine Throttle Valve - Closure	2(b)
2. Turbine Governor Valve - Fast Closure	2(b)

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Insert

- (a) ~~A trip system may be placed in an inoperable status for up to 2 hours for required surveillance provided that the other trip system is OPERABLE.~~
- (b) This function shall be automatically bypassed when turbine first stage pressure is less than or equal to 165 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.

Modified by
602-93-180:
dated 7/9/93

- (a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Limiting Conditions For Operation/Action Statement may be delayed for up to 2 hours provided the associated function maintains EOC-RPT trip capability.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

<u>FUNCTIONAL UNITS</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)</u>	<u>ACTION</u>
a. Reactor Vessel Water Level - Low Low, Level 2	2	50
b. Reactor Vessel Water Level - High, Level 8	2(b)	51
c. Condensate Storage Tank Water Level - Low Low	2(c)	52
d. Manual Initiation	1(d)	53

~~(a) A channel may be placed in an inoperable status for up to 6 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.~~

(b) One trip system with two-out-of-two logic.

(c) One trip system with one-out-of-two logic.

(d) One trip system with one channel.

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Limiting Conditions For Operation/Action Statement may be delayed for up to 6 hours provided the associated function maintains RCIC initiation capability.

