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## INSTRUMENTATION

### 3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2 and with EMERGENCY CORE COOLING SYSTEM RESPONSE TIME as shown in Table 3.3.3-3.

APPLICABILITY: As shown in Table 3.3.3-1.

#### ACTION:

- a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.
- b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1.
- c. With either ADS trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status:
  1. Within 7 days, provided that the HPCS and RCIC systems ~~are~~ <sup>is</sup> OPERABLE; otherwise,
  2. Within 72 hours.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 128 psig within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1.

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.3.3 The ECCS RESPONSE TIME of each ECCS trip function shown in Table 3.3.3-3 shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific ECCS trip system.



## EMERGENCY CORE COOLING SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

#### ACTION:

a. For ECCS division 1, provided that ECCS divisions 2 and 3 are OPERABLE:

1. With the LPCS system inoperable, restore the inoperable LPCS system to OPERABLE status within 7 days.
2. With LPCI subsystem "A" inoperable, restore the inoperable LPCI subsystem "A" to OPERABLE status within 7 days.
3. With the LPCS system inoperable and LPCI subsystem "A" inoperable, restore at least the inoperable LPCI subsystem "A" or the inoperable LPCS system to OPERABLE status within 72 hours.
4. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. For ECCS division 2, provided that ECCS divisions 1 and 3 are OPERABLE:

1. With either LPCI subsystem "B" or "C" inoperable, restore the inoperable LPCI subsystem "B" or "C" to OPERABLE status within 7 days.
2. With both LPCI subsystems "B" and "C" inoperable, restore at least the inoperable LPCI subsystem "B" or "C" to OPERABLE status within 72 hours.
3. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours\*.

c. For ECCS division 3, provided that ECCS divisions 1 and 2 ~~and the RGIC system~~ are OPERABLE:

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- 1) With ECCS division 3 inoperable, restore the inoperable division to OPERABLE status within 14 days.
- 2) Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. For ECCS divisions 1 and 2, provided that ECCS division 3 is OPERABLE:

- 1) With LPCI subsystem "A" and either LPCI subsystem "B" or "C" inoperable, restore at least the inoperable LPCI subsystem "A" or the inoperable LPCI subsystem "B" or "C" to OPERABLE status within 72 hours.

\*Whenever two or more RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

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TABLE 3.8.4.3-1

## MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

VALVE NUMBER	SYSTEM(S) AFFECTED	SYSTEM(S) VALVE NUMBER	AFFECTED.
a. CAC-V-2 CAC-V-4 CAC-V-6 CAC-V-8 CAC-V-11 CAC-V-13 CAC-V-15 CAC-V-17	Containment Atmospheric Control System	g. MSLC-V-1A MSLC-V-1B MSLC-V-1C MSLC-V-1D MSLC-V-2A MSLC-V-2B MSLC-V-2C MSLC-V-2D MSLC-V-3A MSLC-V-3B MSLC-V-3C MSLC-V-3D MSLC-V-4 MSLC-V-5 MSLC-V-9 MSLC-V-10	Main Steam Isolation Valve Leakage Control System
b. CIA-V-20 CIA-V-30A CIA-V-30B	Containment Instrument Air System		
c. FPC-V-149 FPC-V-153 FPC-V-154 FPC-V-156 FPC-V-172 FPC-V-173 FPC-V-175 FPC-V-181A FPC-V-181B FPC-V-184	Fuel Pool Cooling System		
d. HPCS-V-1 HPCS-V-4 HPCS-V-10 HPCS-V-11 HPCS-V-12 HPCS-V-15 HPCS-V-23	High Pressure Core Spray System	h. RCC-V-5 RCC-V-21 RCC-V-40 RCC-V-104 RCC-V-129 RCC-V-130 RCC-V-131	Reactor Closed Cooling Water System
e. LPCS-V-1 LPCS-V-5 LPCS-FCV-11 LPCS-V-12	Low Pressure Core Spray System	i. <del>RCIC-V-1</del> <del>RCIC-V-8</del> <del>RCIC-V-10</del> <del>RCIC-V-13</del> <del>RCIC-V-19</del> <del>RCIC-V-22</del> <del>RCIC-V-31</del>	Reactor Core Isolation Cooling System
f. MS-V-1 MS-V-2 MS-V-5 MS-V-16 MS-V-19 MS-V-20 MS-V-67A MS-V-67B MS-V-67C MS-V-67D MS-V-146	Main Steam System		OK-LEAVE IN DELETE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150

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TABLE 3.8.4.3-1 (Continued)

## MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

VALVE NUMBER	SYSTEM(S) AFFECTED	VALVE NUMBER	SYSTEM(S) AFFECTED
i. <del>RCIC-V-45</del>	Reactor Core Isolation Cooling System	RHR-V-42C	Reactor Recirculation System
<del>RCIC-V-46</del>		RHR-V-47A	
<del>RCIC-V-59</del>		RHR-V-47B	
<del>RCIC-V-63</del>		RHR-V-48A	
<del>RCIC-V-68</del>		RHR-V-48B	
<del>RCIC-V-69</del>		RHR-V-49	
<del>RCIC-V-76</del>		RHR-V-53A	
<del>RCIC-V-110</del>	Reactor Feedwater System	RHR-V-53B	
<del>RCIC-V-113</del>		RHR-V-64A	
j. RFW-V-65A	Reactor Feedwater System	RHR-V-64B	
RFW-V-65B		RHR-V-64C	
		RHR-V-68A	
		RHR-V-68B	
		RHR-V-73A	
		RHR-V-73B	
k. RHR-V-3A	Residual Heat Removal System	RHR-V-74A	
RHR-V-3B		RHR-V-74B	
RHR-V-4A		RHR-V-115	
RHR-V-4B		RHR-V-116	
RHR-V-4C		RHR-V-123A	
RHR-V-6A		RHR-V-123B	
RHR-V-6B		RHR-V-134A	
RHR-V-8		RHR-V-134B	
RHR-V-9			
RHR-V-16A		l. RRC-V-16A	Reactor Recirculation System
RHR-V-16B		RRC-V-16B	
RHR-V-17A			Reactor Water Cleanup System
RHR-V-17B			
RHR-V-21			
RHR-V-23			
RHR-V-24A		m. RWCU-V-1	
RHR-V-24B		RWCU-V-4	
RHR-V-27A		RWCU-V-40	
RHR-V-27B			
RHR-V-40			
RHR-V-42A			
RHR-V-42B			

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