

TABLE 3.2.B (CONTINUED)

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT
COOLING SYSTEMS

Minimum No. Of Operable Instrument Channels Per Trip System(1)	Trip Function	Trip Level Setting	Number of Instru- ment Channels Pro- vided by Design	Remarks
4(5)	HPCI Steam Line Low Pressure	100>p>50 psig (3)	4 Inst.	
2	HPCI Turbine Compartment Temperature	≤200 deg.F (3)	4 Inst.)))	
4	HPCI Steam Line Area Temperature	≤200 deg.F (3)	8 Inst.) 16 Inst.))	
2	HPCI/RHR Valve Station Area Temperature	≤200deg.F (3)	4 Inst.)	
1 per 4kV Bus	4KV Emergency Bus Undervoltage Relay	25%(±5%) of Rated Voltage		1. Trips all loaded breakers 2. Fast transfer permissive. 3. Dead bus start of diesel.
1 per 4KV Bus	4KV Emergency Bus Sequential Loading Relay	95%(+0%, -10%) of Rated Voltage		Permits sequential starting of vital loads
2 per 4KV Bus	Emergency Transformer Undervoltage	60%(±5%) of Rated Voltage		1. Trips emergency transformer feed to 4KV emergency bus 2. Fast transfer permissive
1	LPCI Cross-Connect Position	NA	1 Inst.	Initiates annunciation when valve is not closed
2 per 4 KV Bus	Emergency Trans- former Degraded voltage (Instantaneous)	90%(±2%) of Rated voltage 60 second (±5%) time delay. 6 second(±5%) time delay.		1. Trips emergency transformer feed to 4 KV emergency bus 2. Fast transfer permissive. 1. Trips emergency trans- former feed to 4 KV emergency bus. 2. Fast transfer permissive 3. Safety injection signal required.
2 per 4 KV Bus	Emergency Trans- former Degraded voltage(Inverse time - voltage).	87%(±5%) of Rated Voltage		1. Trips emergency trans- former feed to 4 KV emergency bus. 2. Fast transfer permissive

8205180-1

622

- 71 -

TABLE 4.2.B
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

<u>Instrument Channel</u>	<u>Instrument Functional Test</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
1) Reactor Water Level (7)	(1) (3)	Once/operating cycle	Once/day
2) Drywell Pressure (7)	(1) (3)	Once/operating cycle	Once/day
3) Reactor Pressure (7)	(1) (3)	Once/operating cycle	Once/day
4) Auto Sequencing Timers	NA	Once/operating cycle	None
5) ADS - LPCI or CS Pump Disch. Pressure Interlocks	(1)	Once/3 months	None
6) Trip System Bus Power Monitors	(1)	NA	None
7) Core Spray Sparger d/p	(1)	Once/6 months	Once/day
8) Steam Line High Flow (HPCI & RCIC)	(1)	Once/3 months	None
9) Steam Line High Temp. (HPCI & RCIC)	(1) (3)	Once/operating cycle	Once/day
10) Safeguards Area High Temp.	(1)	Once/3 months	None
11) HPCI and RCIC Steam Line Low Pressure	(1)	Once/3 months	None
12) HPCI Suction Source Levels	(1)	Once/3 months	None

TABLE 4.2.B (CONTINUED)
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

<u>Instrument Channel</u>	<u>Instrument Functional Test</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
13) 4KV Emergency Power System Voltage Relays	Once/operating cycle	Once/5 years	None
14) ADS Relief Valves Bellows Pressure Switches	Once/operating cycle	Once/operating cycle	None
15) LPCI/Cross Connect Valve Position	Once/refueling cycle	N/A	N/A
16) 4KV Emergency Power Source Degraded Voltage Relays	Once/operating cycle	Once/operating cycle	None

PBAPS

3.2 BASES (Cont'd)

In the event of a loss of the reactor building ventilation system, radiant heating in the vicinity of the main steam lines raises the ambient temperature above 200 degrees F. Restoration of the main steam line tunnel ventilation flow momentarily exposes the temperature sensors to high gas temperatures. The momentary temperature increase can cause an unnecessary main steam line isolation and reactor scram. Permission is provided to increase the temperature trip setpoint to 250 degrees F for 30 minutes during restoration of ventilation system to avoid an unnecessary plant transient.

The Emergency Aux. Power Source Degraded Voltage trip function prevents damage to safety related equipment in the event of a sustained period of low voltage. The voltage supply to each of the 4kV buses will be monitored by undervoltage relaying. With a degraded voltage condition on the offsite sources the undervoltage sensing relays operate to initiate a timing sequence.

The timing sequence provides constant and inverse time voltage characteristics. Degraded voltage protection includes: (1) a 60 second time delay relay initiated at 90% voltage; (2) a 6 second time delay relay initiated at 90% voltage which requires presence of a Safety Injection Signal to initiate transfer and; (3) an inverse time voltage relay initiated at 87% voltage with a maximum 60 second delay.

When the timing sequence is completed, the corresponding 4kV emergency circuit breakers are tripped and the emergency buses are transferred to the alternate source. The sixty second timing sequences were selected to prevent unnecessary transfers during motor starts and to allow the automatic tapchanger on the startup transformer to respond to the voltage condition. The six second timing sequence is necessary to prevent separation of the emergency buses from the offsite source during motor starting transients; yet still be contained within the time envelope in FSAR Table 8.5.1