

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
4. STEAM LINE ISOLATION					
a. Manual					
i. One Switch/line	1/steam line	1/steam line	1/operating steam line	1, 2, 3	23
ii. One Switch/all lines	1	1	1	1, 2, 3	23
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3	<del>19</del> 21
c. Reactor Building Pressure-- High-2	3	2	2	1, 2, 3	15*
d. Steam Flow in Two Steam Lines--High	2/steam line	1/steam line any 2 steam lines	1/steam line	1, 2, 3	15*
COINCIDENT WITH T <sub>avg</sub> --Low-Low	1 T <sub>avg</sub> /loop	1 T <sub>avg</sub> any 2 loops	1 T <sub>avg</sub> any 2 loops	1, 2, 3	15*

TABLE 3.3-3 (Continued)

## ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
6. EMERGENCY FEEDWATER					
a. Manual Initiation	1 per pump	1 per pump	1 per pump	1, 2, 3	22
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3	21
c. Stm. Gen. Water Level-Low-Low					
i. Start Motor Driven Pumps	3/stm. gen.	2/stm. gen. any stm gen.	2/stm. gen.	1, 2, 3	15*
ii. Start Turbine- Driven Pump	3/stm. gen.	2/stm. gen. any 2 stm. gen.	2/stm. gen	1, 2, 3	15*
d. Undervoltage-both ESF Busses Start Turbine- Driven Pump	2-1/bus	2	2	1, 2, 3	19
e. S.I. Start Motor- Driven Pumps	See 1 above (all S.I. initiating functions and requirements)				
f. Undervoltage-one ESF bus Start Motor-Driven Pumps	2-1/bus	1	2	1, 2	22
g. Trip of Main Feedwater Pumps Start Motor- Driven Pumps	3-1/pump	3-1/pump	3-1/pump	1, 2	19
h. Suction Transfer on Low Pressure	4	2	3	1, 2, 3	<del>16</del>

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
7. LOSS OF POWER					
a. 7.2 kv Emergency Bus Undervoltage (Loss of Voltage) 2-1/bus		1	2	1, 2, 3, 4	18
b. 7.2 kv Emergency Bus Undervoltage (Degraded Voltage) 2-1/bus		1	2	1, 2, 3, 4	18
8. AUTOMATIC SWITCHOVER TO CONTAINMENT SUMP					
a. RWST level low-low 4		2	3	1, 2, 3	1516
b. Automatic Actuation Logic and Actuation Relays 2		1	2	1, 2, 3	1514
9. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
a. Pressurizer Pressure, P-11 3		2	2	1, 2, 3	20
b. Low-Low $T_{avg}$ , P-12 3		2	2	1, 2, 3	20
c. Reactor Trip, P-4 2		2	2	1, 2, 3	22