Table 7.1-7—SAS FMEA Results Sheet 1 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
				Systems W	ith Functions in 4 Divis	sions / Trains		
1	Fuel Building Ventilation System (FBVS)	Isolation of FBVS on Containment Isolation	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
		(Figure 7.3-62)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
2	Safety Injection and Residual Heat Removal System (SIS/	RHR Isolation Valves Interlock (Figure 7.6-11)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	RHRS)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
3	Electrical Division of Safeguard Building Ventilation System	SBVSE CCWS Pump Room Heat Removal (Figure 7.3-59)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
4	Component Cooling Water System (CCWS)	CCWS Emergency Temperature Control (Figure 7.3-34)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	

Table 7.1-7—SAS FMEA Results Sheet 2 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
5	Deleted							
6	Emergency Feedwater System (EFWS)	SG Level Control (Figure 7.3-4)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
7	Emergency Feedwater System (EFWS)	EFWS Pump Flow Protection (Figure 7.3-4)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
8	Water System (ESWS)	ESW Flood WS) Prevention in the Safeguard Building (Figure 7.3-69)	evention in the 1 division. feguard Building	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs and the function remains operable.	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division/train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
9	Essential Service Water Pump Building Ventilation System	ESWPBVS ESWS Pump Rooms Temperature Control	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	(ESWPBVS)	(Figure 7.3-38)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	

Table 7.1-7—SAS FMEA Results Sheet 3 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
10	Main Steam System (MSS)	Steam Generator MSRCV Regulation during Pressure Control	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Mastery/Standby CU switchover occurs in faulted division. Voting logic remains 2/4 in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function
		(Figure 7.3-12)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Voting in other divisions becomes 1/3.	
			c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Voting in other divisions becomes 2/3.		
11	Main Steam System (MSS) MSRCV Regulation during Standby Position Control	MSRCV Regulation during Standby Position Control	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Mastery/Standby CU switchover occurs in faulted division. Voting logic remains 2/4 in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function
		(Figure 7.3-12)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Voting in other divisions becomes 1/3.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Voting in other divisions becomes 2/3.	
12	Safeguard Building Controlled-Area Ventilation System	rea Rooms Heat Removal	oms Heat Removal 1 Division gure 7.3-46)	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	(SBVS)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
13	Controlled-Area Mechanical Area	Mechanical Areas of 1 division. Safeguard Building on Containment Isolation		a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs and the function remains operable.	No effects on the system function
			lation gure 7.3-65)	b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division/train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	

Table 7.1-7—SAS FMEA Results Sheet 4 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments		
14	Ventilation System	CCWS/EFWS Valve Rooms Heat Removal (Figure 7.3-47)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function		
	(SBVS)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
15	Ventilation System	Supply and Recirculation Exhaust Air Flow	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function		
	(SBVSE)	Control (Figure 7.3-48)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
16	Electrical Division of Safeguard Building Ventilation System	Supply Fan Safe Shut- off 1 Division (Figure 7.3-49)		a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function		
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
17	Safeguard Building Ventilation System	Safe Shut-off	Safe Shut-off	lding Safe Shut-off	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			

Table 7.1-7—SAS FMEA Results Sheet 5 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments	
18	Ventilation System	Exhaust Fan Safe Shut-off (Figure 7.3-51)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function	
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		
19		Supply Air Temperature Heater Control	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function	
	(SBVSE)	(Figure 7.3-52)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		
20	Ventilation System	Freeze Protection (Figure 7.3-53)		Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		
21	Safeguard Building	Supply Air Temperature Control for Supply Air	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function	
	(SBVSE)	Cooling (Figure 7.3-54)	gure 7.3-54)	b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		

Table 7.1-7—SAS FMEA Results Sheet 6 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
22	Electrical Division of Safeguard Building Ventilation System	Battery Room Heater Control (Figure 7.3-56)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
23	Safeguard Building Air Ventilation System Com	Battery Room Supply Air Temperature Control	perature 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
		(Figure 7.3-57)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
24	Electrical Division of Safeguard Building Ventilation System (SBVSE) Electrical Division of Water System (EFWS) Pump Room Heat Removal (Figure 7.3-58)	Water System (EFWS) Pump Room	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
			.3-58)	b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	

Table 7.1-7—SAS FMEA	Results
Sheet 7 of 29	

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
25	Safety Chilled Water System (SCWS)	Train 2 Switchover on Train 1 Loss of Pump/Loss of Chiller / SCWS Chiller Evaporator Water Flow Control / LOOP	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
		Re-start Failure (Figure 7.6-5)		b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.	
	Safety Chilled Water System (SCWS)	SCWS Train 2 to Train 1 Switchover on Train 2 Loss of Pump/Loss of Chiller / Loss of UHS-CCWS / SCWS Chiller Evaporator Water	hover 1 Division ss of Chiller G-CCWS er Vater / LOOP ure	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
		Flow Control / LOOP Re-start Failure (Figure 7.6-6)		b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.	

Table 7.1-7—SAS FMEA	Results
Sheet 8 of 29	

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
27	/ Loss of UHS-CCWS / SCWS Chiller	Train 4 Switchover on Train 3 Loss of Pump/Loss of Chiller / Loss of UHS-CCWS / SCWS Chiller Evaporator Water	1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
		Flow Control / LOOP Re-start Failure (Figure 7.6-7)		b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.	
28	Safety Chilled Water System (SCWS)	SCWS Train 4 to Train 3 Switchover on Train 4 Loss of Pump/Loss of Chiller / SCWS Chiller Evaporator Water Flow Control / LOOP	over 1 Division of chiller ter LOOP 7.6-8)	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
		Re-start Failure (Figure 7.6-8)		b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.	

Table 7.1-7—SAS FMEA Results Sheet 9 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
29		Automatic RHRS Flow Rate Control (Figure 7.3-60)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
30	0	Cooler Temperature Control (Figure 7.3-45)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ train	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ train	Loss of one division / train. Three remaining divisions / trains provide safety function.	
-	1			Systems With F	unctions Within 2 Red	undant Train Sets		
31	Main Control Room Air Conditioning System (CRACS)	Pressure Control (Figure 7.3-44)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	-
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
32	Annulus Ventilation System (AVS)	Accident Filtration Train Heater Control (Figure 7.3-31)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	

Table 7.1-7—SAS FMEA Results Sheet 10 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
33	Annulus Ventilation System (AVS)	Accident Train Switchover (Figure 7.3-32)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
34	Component Cooling Water System (CCWS)	SCWS Condenser Supply Water Flow Control	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
		(Figure 7.3-37)		b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
35	Fuel Building Ventilation System (FBVS)	Safety-Related Room Heater Control (Figure 7.3-39)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
36	Fuel Building Ventilation System (FBVS)	FBVS EBS / FPCS Pump Rooms Heat Removal	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
		(Figure 7.3-40)		b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	

Table 7.1-7—SAS FMEA Results Sheet 11 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments		
37	Fuel Building Ventilation System (FBVS)	Isolation of the Fuel Pool Hall (Figure 7.3-67)	Master CU in 1 division.	a) Detected Failure	TXS inherent or engineered fault detection mechanism		Master/Standby CU switchover occurs and the function remains operable.	No effects on the system function		
				b) Undetected - Spurious	None	Two redundant divisions/ trains	Spurious trigger of one train pair. One remaining train set provides safety function.			
				c) Undetected - Blocking	None	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.			
38	Fuel Building Ventilation System (FBVS)	Isolation of the Emergency Airlock and Equipment	Master CU in 1 division.	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs and the function remains operable.	No effects on the system function		
		Hatch (Figure 7.3-68)		b) Undetected - Spurious	None		Spurious trigger of one train pair. One remaining train set provides safety function.			
				c) Undetected - Blocking	None	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.			
39	Fuel Pool Cooling and Purification System (FPCPS)	Low Spent Fuel Pool (SFP) Level	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function		
		(Figure 7.3-41)	L)	b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.			
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	-		
40	Main Control Room Air Conditioning System (CRACS)	oning Train Heater Control	Train Heater Control	Train Heater Control	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None		Spurious trigger of one train pair. One remaining train set provide safety function.			
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.			

Table 7.1-7—SAS FMEA Results Sheet 12 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
41	Main Control Room Air Conditioning System (CRACS)	Heater Control for Outside Inlet Air (Figure 7.3-43)		a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs and the function remains operable	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
42		Iodine Filtration Train Electric Heater Control	Master CU in 1 division.	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs and the function remains operable.	No effects on the system function
	(SBVS)	(Figure 7.3-66)		b) Undetected - Spurious	None	Two redundant divisions/ trains	Spurious trigger of one train pair. One remaining train set provides safety function.	
				c) Undetected - Blocking	None	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.	
				C	CWS Switchover Functi	ons	·	·
43		System Leak Detection	eak Detection 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious closure of switchover valve and isolation valve. Spurious closure of one pilot valve for other trains.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of switchover valve and isolation valve. Loss of one pilot valve for other trains.	

Table 7.1-7—SAS FMEA Results Sheet 13 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments				
44	Water System Auto (CCWS) Switt to Table to Table	CCWS Common 1.b Automatic Backup Switchover of Train 1 to Train 2 and Train 2 to Train 1 (Figure 7.3-33)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function				
				b) Undetected - Spurious	None	Two redundant train sets	Spurious actuation of pumps and fans.					
				c) Undetected - Blocking	None	Two redundant train sets	Loss of pumps and fans. Remaining divisions/trains provide safety function.					
45	Component Cooling Water System (CCWS)	CCWS Common 2.b Automatic Backup Switchover of Train 3 to Train 4 and Train 4 to Train 3 (Figure 7.3-33)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism		Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function				
				b) Undetected - Spurious	None	Two redundant train sets	Spurious actuation of pumps and fans.					
				c) Undetected - Blocking	None	Two redundant train sets	Loss of pumps and fans. Remaining divisions/trains provide safety function.					
46	Component Cooling Water System (CCWS)	oling CCWS Emergency Leak Detection – Switchover Valves Leakage or Failure (Figure 7.3-36)	Leak Detection – Switchover Valves Leakage or Failure	Leak Detection – Switchover Valves Leakage or Failure	tter System Leak Detection – 1 CWS) Switchover Valves Leakage or Failure	System Leak Detection – 1 Division Switchover Valves Leakage or Failure	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism		Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
				b) Undetected - Spurious	None		Spurious closure of switchover valves in faulted train and associated train. One remaining train set provides safety function.					
			c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	-					

Table 7.1-7—SAS FMEA Resu	ults
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No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
47	Component Cooling Water System (CCWS)	CCWS Switchover Valves Interlock (Figure 7.6-1)	lves Interlock 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one division/train. Three remaining divisions/trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one division/train. Three remaining divisions/trains provide safety function.	
				CCWS RCI	P Thermal Barrier Interl	ock Function		
48	Water System I (CCWS) I	CCWS RCP Thermal Barrier Containment Isolation Valve Interlock (Figure 7.6-2)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. The system automatically switches over to the other train pair. The other train pair performs the safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of two CIVs. The remaining valves and train set provides safety function.	
49	Component Cooling Water System (CCWS) CCWS) CCWS RCP Thermal Barrier Containment Isolation Valves Opening Interlock (Figure 7.6-12)	Barrier Containment 1 Division solation Valves Opening Interlock	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs. Functionality that depends on information from other divisions is lost due to lost connection to CUs. Functionality that does not depend on information from other CUs remains operable.	No effects on the system function	
			ł	b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train pair. The system automatically switches over to the other train pair. The other train pair performs the safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of two CIVs. The remaining valves and train set provides safety function.	

Table 7.1-7—SAS FMEA Res	ults
Sheet 15 of 29	

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments		
			·	Systems W	ith Functions Utilizing	Voting Logic				
50	Refueling Water	IRWST Boundary Isolation for Preserving IRWST Water Inventory	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Master / Standby CU switchover occurs in faulted division. Voting logic remains 2/4 in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function		
		Interlock (Figure 7.6-4)		b) Undetected - Spurious	None	Redundant divisions/ trains	Spurious trigger of one division / train. Voting in other divisions becomes 1/3.			
				c) Undetected - Blocking	None	Redundant divisions/ trains	Loss of one division / train. Voting in other divisions becomes 2/3.			
51	Removal System (SIS/	Automatic Trip of LHSI Pump (in RHR Mode) on Low ΔPsat (Figure 7.6-9)	LHSI Pump (in RHR Mode) on Low ΔPsat	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault- detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs in faulted division. Voting logic remains 2/4 in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function	
								b) Undetected -Spurious	None	Redundant divisions/trains
				c) Undetected - Blocking	None	Redundant divisions/trains	Loss of one division/train. Voting in other divisions becomes 2/3.			
52		Mode) on Low RCS Loop Level	ISI Pump (in RHR Division ode) on Low RCS	a) Detected Failure	TXS inherent or engineered fault- detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs in faulted division. Voting logic remains 2/4 in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function		
		(Figure 7.6-10)		b) Undetected -Spurious	None	Redundant divisions/trains	Spurious trigger of one division/train. Voting in other divisions becomes 1/3.			
				c) Undetected - Blocking	None	Redundant divisions/trains	Loss of one division/train. Voting in other divisions becomes 2/3.			
53		Detection of RHRS Train Connected (Figure 7.6-13)	Master CU in 1 Division	a) Detected Failure	TXS inherent or engineered fault- detection mechanism	Affected division switches to the standby CU	Master/Standby CU switchover occurs in faulted division. Voting logic remains 1/2 in faulted division. Voting logic in connected division is modified to 1/1.	No effects on the system function		
				b) Undetected -Spurious	None	Redundant divisions/trains	Spurious trigger of one division/train. Spurious trigger of 1/2 voting logic in connected division.			
				c) Undetected - Blocking	None	Redundant divisions/trains	Loss of one division/train. Voting logic in connected division becomes 1/1.			

Table 7.1-7—SAS FMEA Results Sheet 16 of 29

						1	1	
No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
				Systems	With Functions in 4 Div	ision/Trains		
54	Ventilation System (FBVS)	Isolation of FBVS on Containment Isolation	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function.	No effects on the system function
		(Figure 7.3-62)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
55	Residual Heat Removal System (SIS/	RHR Isolation Valves Interlock (Figure 7.6-11)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Affected division switches to the standby CU	Three remaining divisions / trains provide safety function.	No effects on the system function
	RHRS)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	-
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
56	Component Cooling Water System (CCWS)	CCWS Emergency Temperature Control (Figure 7.3-34)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	_
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
57	-	CCWS Emergency Leak Detection (Figure 7.3-35)	ak Detection	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one pilot valve. Remaining pilot valves provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one pilot valve. Remaining pilot valves provide safety function.	

Table 7.1-7—SAS FMEA Results Sheet 17 of 29

r			Name of Sensor,					
No	System	SAS Function	Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
58	0,	SG Level Control (Figure 7.3-4)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
59	U i	EFWS Pump Flow Protection (Figure 7.3-4)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
60	Ventilation System	ESWPBVS ESWS Pump Rooms Temperature Control		a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
	(ESWPBVS)	(Figure 7.3-38)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
61	Essential Service ESW Flood Water System (ESWS) Prevention in the Safeguard Building	evention in the	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions/trains provide safety function.	No effects on the system function	
		(Figure 7.3-69)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division/train. Three remaining divisions / trains provide safety function.	
			c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		

Table 7.1-7—SAS FMEA Results Sheet 18 of 29

				1	1		1	1		
No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments		
62	Main Control Room Air Conditioning System (CRACS)	Cooler Temperature Control (Figure 7.3-45)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
63	Main Control Room Air Conditioning System (CRACS)	Pressure Control (Figure 7.3-44)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
64	Main Steam System (MSS)	Steam Generator MSRCV Regulation during Pressure Control (Figure 7.3-12)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
65	Main Steam System (MSS)	Steam Generator MSRCV Regulation during Standby		ASS) MSRCV Regulation	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
		Position Control (Figure 7.3-12)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
					c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		

Table 7.1-7—SAS FMEA Results Sheet 19 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments		
66		SIS/RHRS Pump Rooms Heat Removal (Figure 7.3-46)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
	(SBVS)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
67	Ventilation System	CCWS/EFWS Valve Rooms Heat Removal (Figure 7.3-47)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
	(SBVS)		(S)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
68	Ventilation System	Isolation ofLoss of 1 DivisionMechanical Areas ofSafeguard Building	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions/trains provide safety function.			
	(SBVS)	on Containment Isolation (Figure 7.3-65)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division/train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
69	Safeguard Building Ventilation System	f Supply and Recirculation Exhaust Air Flow Control (Figure 7.3-48)	g Recirculation	uard Building Recirculation	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c)	c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		

Table 7.1-7—SAS FMEA Results Sheet 20 of 29

-	1			I	1		1			
No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments		
70	Safeguard Building Ventilation System	Supply Fan Safe Shut- off (Figure 7.3-49)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.			
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
71	Ventilation System	Recirculation Fan Safe Shut-off (Figure 7.3-50)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function		
	(SBVSE)			b	b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			
72	Ventilation System	of Exhaust Fan Safe Loss of 1 Division Shut-off (Figure 7.3-51)	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function			
	(SBVSE)				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	-		
73	Safeguard Building Ventilation System	uard Building Temperature Heater lation System Control	aard Building Temperature Heater	eguard Building Temperature Heater	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
	(SBVSE)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.				
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.			

Table 7.1-7—SAS FMEA Results Sheet 21 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments	
74	Safeguard Building (Figure 7) Ventilation System	Freeze Protection (Figure 7.3-53)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function	
	(SBVSE)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		
75	Electrical Division of Safeguard Building Ventilation System	Supply Air Temperature Control for Supply Air	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function	
	(SBVSE)	Cooling (Figure 7.3-54)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		
76	Safeguard Building Control	•	eater Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function	
				b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
						c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.
77	Electrical Division of Safeguard Building Ventilation System	Battery Room Supply Air Temperature Control (Figure 7.3-57)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function	
	(SBVSE)		b) Undetected - S	b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
					c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	

Table 7.1-7—SAS FMEA Results Sheet 22 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
	Safeguard Building Ventilation System	Emergency Feed Water System (EFWS) Pump Room	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
		Heat Removal (Figure 7.3-58)		b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
79	Safeguard Building Ventilation System	guard Building Pump Room Heat Filation System Removal	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function
	(SBVSE)		'igure 7.3-59)	b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.	
80	System (SCWS)		Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant cross-tied train sets	The error in the faulted division is alarmed. Loss of one cross-tied train set. One remaining cross-tied train set provides safety function.	No effects on the system function
			vaporator Water low Control / LOOP e-start	b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.	

Table 7.1-7—SAS FMEA	Results
Sheet 23 of 29	

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments	
81	Safety Chilled Water System (SCWS)	SCWS Train 2 to Train 1 Switchover on Train 2 Loss of Pump/Loss of Chiller	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant cross-tied train sets	The error in the faulted division is alarmed. Loss of one cross-tied train set. One remaining cross-tied train set provides safety function.	No effects on the system function	
		/ Loss of UHS-CCWS / SCWS Chiller Evaporator Water Flow Control / LOOP	c) Unde	b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
		Re-start Failure (Figure 7.6-6)		c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.		
82	/ Loss of UHS-CCWS / SCWS Chiller Evaporator Water Flow Control / LOOI Re-start	Train 4 Switchover on Train 3 Loss of Pump/Loss of Chiller / Loss of UHS-CCWS / SCWS Chiller Evaporator Water Flow Control / LOOP	Train 4 Switchover on Train 3 Loss of Pump/Loss of Chiller / Loss of UHS-CCWS / SCWS Chiller Evaporator Water	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant cross-tied train sets	The error in the faulted division is alarmed. Loss of one cross-tied train set. One remaining cross-tied train set provides safety function.	No effects on the system function
					b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.	
				c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.		
83	Safety Chilled Water System (SCWS)	SCWS Train 4 to Train 3 Switchover on Train 4 Loss of Pump/Loss of Chiller	WS) Train 3 Switchover	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant cross-tied train sets	The error in the faulted division is alarmed. Loss of one cross-tied train set. One remaining cross-tied train set provides safety function.	No effects on the system function
	Ev F1 Re	/ SCWS Chiller Evaporator Water Flow Control / LOOP Re-start		b) Undetected - Spurious	None	Two redundant cross-tied train sets	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
			Failure (Figure 7.6-8)	c) Undetected - Blocking	None	Two redundant cross-tied train sets	Loss of one division / train. Unable to perform automatic SCWS train switchover function for the faulted cross-tied train set. One remaining cross-tied train set provides the safety function.		

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments	
84		Automatic RHRS Flow Rate Control (Figure 7.3-60)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Four redundant divisions/ trains	Three remaining divisions / trains provide safety function	No effects on the system function	
	RHRS)			b) Undetected - Spurious	None	Four redundant divisions/ trains	Spurious trigger of one division / train. Three remaining divisions / trains provide safety function.		
				c) Undetected - Blocking	None	Four redundant divisions/ trains	Loss of one division / train. Three remaining divisions / trains provide safety function.		
	L	L	L	Systems With F	Functions Within 2 Red	undant Train Sets	l		
	System (AVS)	Accident Filtration Train Heater Control (Figure 7.3-31)	Train Heater Control	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional
					b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train set. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	_	
86	Annulus Ventilation System (AVS)	Accident Train Loss of Switchover (Figure 7.3-32)	ver	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional	
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train set. One remaining train set provide safety function.		
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.		
87	1 0	SCWS Condenser Supply Water Flow Control	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional	
		(Figure 7.3-37)		b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train set. One remaining train set provide safety function.		
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.		

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No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments			
88	Fuel BuildingSafety-Related RoomVentilation SystemHeater Control(FBVS)(Figure 7.3-39)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional				
				b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train set. One remaining train set provide safety function.				
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.				
89	Fuel Building Ventilation System (FBVS)	FBVS EBS / FPCS Pump Rooms Heat Removal	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional			
	(Fig	(Figure 7.3-40)	(Figure 7.3-40)	(Figure 7.3-40)	(Figure 7.3-40)		b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train set. One remaining train set provide safety function.	
			c)	c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.				
90	Fuel BuildingIsolation of the IVentilation SystemPool Hall(FBVS)(Figure 7.3-67)		Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	None	Loss of one train set. One remaining train set provides safety function.				
				b) Undetected - Spurious	None	Two redundant divisions/ trains	Spurious trigger of one train pair. One remaining train set provides safety function.				
				c) Undetected - Blocking	None	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.				
91	Ventilation System Emerge (FBVS) and Equ Hatch	Isolation of the Emergency Airlock and Equipment Hatch (Figure 7.3-68)	ion System Emergency Airlock	ilation System Emergency Airlock	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.		
				b) Undetected - Spurious	None	Two redundant divisions/ trains	Spurious trigger of one train pair. One remaining train set provides safety function.				
						c) Undetected - Blocking	None	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.		

Table 7.1-7—SAS FMEA Results Sheet 26 of 29

No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
92	Purification System	Low Spent Fuel Pool (SFP) Level	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional
		(Figure 7.3-41)		b) Undetected - Spurious	None	Two redundant train sets	Spurious trigger of one train set. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
93	Main Control Room Air Conditioning System (CRACS)	Iodine Filtration Train Heater Control (Figure 7.3-42)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional
				b) Undetected - Spurious	None		Spurious trigger of one train set. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
94	Air Conditioning 0	Heater Control for Outside Inlet Air (Figure 7.3-43)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	One train set remains functional
				b) Undetected - Spurious	None		Spurious trigger of one train set. One remaining train set provide safety function.	
				c) Undetected - Blocking	None	Two redundant train sets	Loss of one train set. One remaining train set provides safety function.	
95	Controlled-Area Ventilation System	Iodine Filtration Train Electric Heater Control (Figure 7.3-66)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.	No effects on the system function
	(SBVS)			b) Undetected - Spurious	None	trains	Spurious trigger of one train pair. One remaining train set provides safety function.	
				c) Undetected - Blocking	None	Two redundant divisions/ trains	Loss of one train set. One remaining train set provides safety function.	

Table 7.1-7—SAS FMEA Result	S
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No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments					
				Systems W	ith Functions Utilizing	Voting Logic							
96	In-Containment Refueling Water Storage Tank System	IRWST Boundary Isolation for Preserving IRWST	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Redundant divisions/ trains	Loss of Master CU and Standby CU in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function					
	(IRWST)	Water Inventory Interlock (Figure 7.6-4)		b) Undetected - Spurious	None	Redundant divisions/ trains	One division sends a spurious actuation. Voting logic in other divisions becomes 1/3.						
				c) Undetected - Blocking	None	Redundant divisions/ trains	Loss of Master CU and Standby CU in faulted division. Voting logic in other divisions becomes 2/3.						
97		Automatic Trip of LHSI Pump (in RHR Mode) on Low ΔPsat	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault- detection mechanism	Redundant divisions/trains	Loss of Master CU and Standby CU in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function					
	RHRS)	(Figure 7.6-9)	(Figure 7.6-9)	(Figure 7.6-9)	(Figure 7.6-9)	(Figure 7.6-9)	Figure 7.6-9)		b) Undetected -Spurious	None	Redundant divisions/trains	One division sends a spurious actuation. Voting logic in other divisions becomes 1/3.	
				c) Undetected - Blocking	None	Redundant divisions/trains	Loss of Master CU and Standby CU in faulted division. Voting logic in other divisions is modified to 2/3.						
98		Automatic Trip of LHSI Pump (in RHR Mode) on Low RCS Loop Level (Figure 7.6-10)	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault- detection mechanism	Redundant divisions/trains	Loss of Master CU and Standby CU in faulted division. Voting logic in other divisions is modified to 2/3.	No effects on the system function					
				b) Undetected -Spurious	None	Redundant divisions/trains	One division sends a spurious actuation. Voting logic in other divisions becomes 1/3.						
							c) Undetected - Blocking	None	Redundant divisions/trains	Loss of Master CU and Standby CU in faulted division. Voting logic in other divisions is modified to 2/3.			
99	Safety Injection and Residual Heat Removal System (SIS/	Detection of RHRS Train Connected (Figure 7.6-13)	Train Connected	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault- detection mechanism	Redundant divisions/trains	Loss of Master CU and Standby CU in faulted division. Voting logic in connected division is modified to 1/1.	No effects on the system function				
	RHRS)			b) Undetected -Spurious	None	Redundant divisions/trains	One division sends a spurious actuation. Spurious trigger of 1/2 voting logic in connected division.						
				c) Undetected - Blocking	None	Redundant divisions/trains	Loss of Master CU and Standby CU in faulted division. Voting logic in connected division becomes 1/1.						

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			Name of Sensor,									
No	System	SAS Function	Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments				
	CCWS Switchover Functions											
100	Component Cooling Water System (CCWS)	CCWS Common 1.b Automatic Backup Switchover of Train 1	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Failed sensor marked invalid; two redundant train pairs.	Unable to automatically perform switchover function in the faulted division.	A second pair serves its associated heat loads. Adequate cooling is provided by the second train pair.				
		to Train 2 and Train 2 to Train 1 (Figure 7.3-33)		b) Undetected - Spurious	None	Two redundant trains pairs	Spurious trigger of one pilot valve. Remaining pilot valves provide safety function.					
				c) Undetected - Blocking	None	Two redundant trains pairs	Loss of one pilot valve. Remaining pilot valves provide safety function.					
101	Component Cooling Water System (CCWS)	CCWS Common 2.b Automatic Backup Switchover of Train 3	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Failed sensor marked invalid; two redundant train pairs.	Unable to automatically perform switchover function in the faulted division.	A second pair serves its associated heat loads. Adequate cooling is provided by the second train pair				
		to Train 4 and Train 4 to Train 3 (Figure 7.3-33)	0) 011	b) Undetected - Spurious	None	Two redundant trains pairs	Spurious trigger of one pilot valve. Remaining pilot valves provide safety function.					
				c) Undetected - Blocking	None	Two redundant trains pairs	Loss of one pilot valve. Remaining pilot valves provide safety function.					
102	Component Cooling Water System (CCWS)	CCWS Emergency Leak Detection – Switchover Valves Leakage or Failure (Figure 7.3-36)	ction –	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Failed sensor marked invalid; two redundant train pairs.	Unable to automatically perform switchover function in the faulted division.	A second pair serves its associated heat loads. Adequate cooling is provided by the second train pair				
				b) Undetected - Spurious	None	Two redundant trains pairs	Spurious trigger of one pilot valve. Remaining pilot valves provide safety function.	t				
				c) Undetected - Blocking	None	Two redundant trains pairs	Loss of one pilot valve. Remaining pilot valves provide safety function.					
	Component Cooling Water System (CCWS)	CCWS Switchover Valves Interlock (Figure 7.6-1)	System Valves Interlock	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Failed sensor marked invalid; two redundant train pairs.	Unable to automatically perform switchover function in the faulted division.	A second pair serves its associated heat loads. Adequate cooling is provided by the second train pair				
				b) Undetected - Spurious	None	Two redundant trains pairs	Spurious trigger of one pilot valve. Remaining pilot valves provide safety function.					
				c) Undetected - Blocking	None	Two redundant trains pairs	Loss of one pilot valve. Remaining pilot valves provide safety function.					

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No	System	SAS Function	Name of Sensor, Functional Unit, or Equipment (2)	Failure Mode (1)	Method of Detection	Inherent Compensating Provision	Effect on the SAS Function	Comments
				CCWS RCI	P Thermal Barrier Interl	ock Function		
104	Component Cooling Water System (CCWS)	Barrier Containment Isolation Valve	inment	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets in two divisions	The failed division's valves fail as-is. The other division provides the interlock function.	No effects on the system function.
		Interlock (Figure 7.6-2)		b) Undetected - Spurious	None	Two redundant train sets	Unable to automatically perform safety function in the faulted division and train set. Loss of 1 train set, redundant train set provides safety function.	-
				c) Undetected - Blocking	None	Two redundant train sets	Unable to close valves in the faulted division. Other divisions isolate the faulted division's train set. Redundant train set provides safety function.	
105	Water System B (CCWS) Is	CCWS RCP Thermal Lo Barrier Containment Isolation Valves Opening Interlock (Figure 7.6-12).	Loss of 1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Two redundant train sets in two divisions	The failed division's valves fail as-is. The other division provides the interlock function.	No effects on the system function.
			e 7.6-12).	b) Undetected - Spurious	None	Two redundant train sets	Unable to automatically perform safety function in the faulted division and train set. Loss of 1 train set, redundant train set provides safety function.	n
				c) Undetected - Blocking	None	Two redundant train sets	Unable to close valves in the faulted division. Other divisions isolate the faulted division's train set. Redundant train set provides safety function.	
					All SAS Functions			
106	All systems for which SAS performs a function.	All SAS functions	1 Division	a) Detected Failure	TXS inherent or engineered fault detection mechanism	Master/Standby CU configuration.	None - Master CU in affected division remains functional	No effects on the system function
				b) Undetected - Spurious	None	Master/Standby CU configuration.	None - Master CU in affected division remains functional	
				c) Undetected - Blocking	None	Master/Standby CU configuration.	None - Master CU in affected division remains functional	

Notes:

- 1. Failure Mode The failure cause is not identified in the system-level analysis. The failure modes are selected to bound the results of any specific failure cause. Specific failure causes can be identified only after specific equipment is selected and application software is developed.
- 2. This FMEA has been analyzed for loss of a CU and loss of a division failure. These types of failures encompass any single failure within a division, (i.e. loss of a sensor, hardwired logic failure / fault).

<u>Next File</u>