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AUTH.NAME AUTHOR AFFILIATION
UHRIG,R.E. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
CLARK,R.A. Licensing Branch 3

SUBJECT: Responds to 810306 request for addl info re util original response to IE Bulletin 80-06, "Engineered Safety Feature (ESF) Reset Controls." Table of components actuated on SAIS, reflecting recent safety sys mods,encl.

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FLORIDA POWER & LIGHT COMPANY

May 13, 1981
L-81-203

Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commision
Washington, D. C. 20555

Dear Mr. Clark:

Re: St. Lucie Unit 1
Docket No. 50-335
IE Bulletin 80-06

Your letter dated March 6, 1981 contained a request for additional information regarding our response to Bulletin 80-06. The following is our response:

Q. 1: Please provide a narrative description of the modifications planned for the charging pumps. Provide anticipated installation date and a commitment to test after installation.

A. 1: The charging pumps are started on SIAS. Presently the trip circuit of the pump is interlocked with a SIAS normally open contact. (SIAS relay is normally energized, so the contact is normally closed).

Upon SIAS the contact on the trip circuit opens and prevents the automatic tripping of the pump from the pressurizer control (Hi-Hi pressure).

Once the SIAS is reset, the contact on the trip circuit will close again permitting the pump to trip upon pressurizer high-high pressure.

In order to maintain the pump running after reset of SIAS, we will incorporate an auxiliary relay with seal-in contact in series with a reset pushbutton. This relay will be energized upon SIAS using a normally closed contact, which is open when the SIAS relay is energized.

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This contact closes upon SIAS and energizes the auxiliary relay which in turn opens a normally closed contact in series with the pump trip circuit, preventing the automatic trip through the pressurizer pressure controls.

After SIAS is reset, the pump remains running until the operator presses the pump reset pushbuttom to clear the auxiliary relay seal, closing the permissive contact to allow again the auto control of the pump through the pressurizer.

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Q

The engineering and design package to implement the control circuit modification will be completed by August, 1981. The schedule for implementing the modifications, as well as the testing requirements will be developed at that time.

Q.2: When is next St. Lucie Unit 1 refueling outage?

A.2: October, 1981.

Q.3: Please provide further classification and justification for not modifying the following safety-related devices. These do not remain in their emergency mode upon reset of the ESF actuation signal:

1. SI tank check valve leakoff valves
2. Diesel Generator lockout relays
3. FWP 1A discharge valves
4. Boric Acid make-up pumps
5. Boric Acid Tank Recirculation line valves
6. Boric Acid Control Isolation Valve
7. VCT discharge valve
8. RCP oil lift pumps

A.3: 1. <u>SI tank check leakoff valves</u>

These valves are used manually by the operator to control leakage up-stream of the check valve that serves as the reactor coolant pressure boundary.

When a pressure transmitter detects an over-pressure in the (12) twelve inch pipe it gives on alarm in the control room. The operator then opens the valve to drain the reactor drain tank. In order to accomplish this operation, it is necessary to open the valve V3661 to the RDT which is also manual. If SIAS takes place during draining operation the operator is expected to close both valves manually. However, in the event of operator error leaving the valves open, the flow through the 1" pipe should be insignificant in comparison with the main 12" pipe from the tank and should not affect the safety operation of the SIS.

2. <u>Diesel Generator Lockout Relays</u>

During an emergency condition (SIAS, CSAS or CIS) all diesel generator trips except differential current and overspeed are by-passed.

The ESFAS contacts are connected in series with an auxiliary contact from the Bus Tie Breaker that interconnects the Emergency Bus with the normal bus.

The tie breaker is normally closed and upon loss of offsite power, will be tripped open before the D. G. breaker closes.

After ESFAS reset the D. G. trips remain by-passed by means of the tie breaker contact which remains open until the voltage in the normal bus is restored.

A manual operation is required to re-close the tie breaker after synchronizing with the D. G., therefore no modification is required in the lockout relay circuit.

3. Feedwater Pump Discharge Valves

The FW pump discharge valves are interlocked with their pumps so that the valves open with a delay after the pumps start and close upon pump trip.

Since the pumps may remain running after SIAS, the valves will open upon SIAS reset. However, the discharge valves to the Steam Generator downstream of these valves will remain closed after SIAS reset.

Therefore modification on these circuits are not recommended.

4, 5, 6 and 7. CVCS

The equipment listed on the above items is part of the CVCS which is in service during normal operation to maintain the boron concentration in the reactor coolant. This is a pre-emergency operation and it does not constitute a detrimental effect on the safety related equipment required for emergency operation.

The Boric Acid make-up pumps are required to start upon SIAS and remain running after reset. However, after reset the pumps will be controlled by the VCT level.

Similarly the Boric Acid tank recirculation valves and the boric acid control isolation valves, which are normally open, will close upon SIAS and re-open upon reset maintaining the CVCS in the pre-emergency mode.

The VCT discharge valve will be also re-opened upon SIAS reset to be controlled by the VCT level.

The above valve arrangement and the boric acid make-up pump operation in the pre-emergency mode is required immediately and automatically after the SIAS is reset to maintain the boron concentration on the reactor coolant which is not detrimental for the safety operation of the plant.

Therefore, we believe that no modification is required since the CVCS normal operation should be initiated automatically after the ESFAS is reset to prevent problems with post-LOCA boron precipitation.

8. RCP Oil Lift Pumps

The reason for tripping one of the RCP oil lift pumps upon SIAS is to reduce the diesel load. After SIAS reset the pump returns to auto control. This action is not detrimental to the emergency mode of operation other than loading 10 hp onto the diesel.

You will also find attached Revision 1 of the tables of components actuated on SIAS transmitted previously. These revisions reflect recent modifications to safety systems.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced System and Technology

REU/JEM/ras

Attachment

cc: Mr. James P. O'Reilly, Region II
Harold F. Reis, Esquire

TABLE 1
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
1	251	Start	Low Pressure Safety Injection Pump 1A	X			No	8	
2	252	Start	Low Pressure Safety Injection Pump 1B		X		No	8	
3	237	Start	High Pressure Safety Injection Pump 1A	X			No	8	
4	238	Start	High Pressure Safety Injection Pump 1B		X		No	7	
5	239	Start	High Pressure Safety Injection Pump 1C			X	No	7	
6	257	Open	LPSI Disch. Valve to Loop 1A-2 HCV-3615	X			No	9	
7	260	Open	LPSI Disch. Valve to Loop 1A-1 HCV-3625		X		No	9	
8	263	Open	LPSI Disch. Valve to Loop 1B-1 HCV-3635	X			No	9	
9	266	Open	LPSI Disch. Valve to Loop 1B-2 HCV-3645		X		No	9	
10	262	Open	HPSI Hdr. A Disch. Valve to Loop 1A-2 HCV-3617	X			No	10	
11	259	Open	HPSI Hdr. A Disch. Valve to Loop 1A-1 HCV-3627	X			No	9	
12	265	Open	HPSI Hdr. A Disch. Valve to Loop 1B-1 HCV-3637	X			No	9	
13	268	Open	HPSI Hdr. A Disch. Valve to Loop 1B-2 HCV-3647	X			No	9	
14	261	Open	HPSI Hdr. B Disch. Valve to Loop 1A-2 HCV-3616		X		No	9	
15	258	Open	HPSI Hdr. B Disch. Valve to Loop 1A-1 HCV-3626		X		No	11	

TABLE 1 (Cont'd)
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
16	264	Open	HPSI Hdr. B Disch. Valve to Loop 1B-1 HCV-3636		X		No	10	(1) Valve will close if pressurizer pressure is low and after operator will change the position of the switch to "close" position during shut-down mode.
17	267	Open	HPSI Hdr. B Disch. Valve to Loop 1B-2 HCV-3646		X		No	9	
18	190	Close	Boron Load Control Valve V-2525		X		No	2	
19	269	Open	S.I. Tank 1A1 Isolation Valve V-3624	X			(1)Yes	7	(2) On SIAS all L.O. Rel Trips except o/s and o/c diff are disconnected. L.O. Relay trips will be reinstated when bus tie breakers are reclosed and SIAS, CIS and CSAS are reset.
20	281	Close	S.I. Tank 1A1 Check Valve Leakoff Valve HCV-3628	X			Yes	8	
21	272	Open	S.I. Tank 1B2 Isolation Valve V-3644	X			(1)Yes	8	
22	280	Close	S.I. Tank 1A2 Check Valve Leakoff Valve HCV-3618		X		Yes	8	
23	271	Open	S.I. Tank 1B1 Isolation Valve V-3634		X		(1)Yes	8	
24	282	Close	S.I. Tank 1B1 Check Valve Leakoff Valve HCV-3638		X		Yes	8	
25	270	Open	S.I. Tank 1A2 Isolation Valve V-3614		X		(1)Yes	8	
26	283	Close	S.I. Tank 1B2 Check Valve Leakoff Valve HCV-3648	X			Yes	9	
27	956	Block Trip	Diesel Generator Lockout Relay 1A	X			(2)Yes	11	
28	966	Block Trip	Diesel Generator Lockout Relay 1B		X		(2)Yes	9	

TABLE 1 (Cont'd)
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
29	616	Close	FWP 1A Discharge Valve MV-09-1	X			(3)Yes	13	
30	621	Close	FWP 1B Discharge Valve MV-09-2	X			(3)Yes	10	
31	633	Close	FWP 1A/1B Discharge Valve MV-09-8		X		No	5	
32	614	Close	FWP 1A/1B Discharge Valve MV-09-7		X		No	4	
33	957	Start	Diesel Generator 1A	X			No	9	
34	967	Start	Diesel Generator 1B		X		No	9	(1) Returns to Auto Control.
35	957	Load Sheding	Diesel Generator Breaker 1A	X			(2)No	9	(2) Needs operator's action to return equipment to normal.
36	957	Load Sheding	Diesel Generator Breaker 1B		X		(2)No	9	(3) Valve will open automatically when it's FW Pump is running and MSIS and SIAS are reset.
37	177	Start	Charging Pump 1A	X			(1)Yes	11	
38	178	Start	Charging Pump 1B		X		(1)Yes	11	
39	179	Start	Charging Pump 1C			X	(1)Yes	15	
40	174	Start	Boric Acid Make-up Pump 1A	X			(1)Yes	7	
41	175	Start	Boric Acid Make-up Pump 1B	X			(1)Yes	9	
42	163	Close	Boric Acid Make-up Valve to VCT V-2512		X		No	6	
43	166	Open	Boric Acid Tank 1A Gravity Feed Valve to Charging Pumps V-2509		X		No	9	

TABLE 1 (Cont'd)
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
44	165	Open	Boric Acid Tank 1B Gravity Feed Valve to Charging Pumps V-2508		X		No	10	(1) Returns valve to level controller (signal isolated).
45	159	Close	Boric Acid Tank 1A Recirc. Line Valve V-2510	X			(3)Yes	11	(2) Control switch escutcheon to be changed from "Open-Auto-Close" to "Override-Auto-Close"
46	159	Close	Boric Acid Tank 1B Recirc. Line Valve V-2511	X			(3)Yes	11	(3) SIAS reset returns both valves to normal operation.
47	167	Open	Boric Acid Pumps Disch. Valve to Charging Pumps V-2514	X			No	9	
48	176	Close	Boric Acid Control Isolation Valve FCV-2161	X			Yes	12	
49									
50	159	Close	Letdown Line Isolation Valve V-2516	X			No	11	
51	159	Close	Letdown Line Isolation Valve V-2515		X		No	11	
52	161	Close	VCT Discharge Valve V-2501		X		(1)Yes	7	
53	201	Start	Component Cooling Water Pump 1A	X			No	8	
54	205	Start	Component Cooling Water Pump 1B		X		No	9	
55	209	Start	Component Cooling Water Pump 1C			X	No	10	
56	202	Close	CCW Hdr. A Supply to Normal Header Isolation Valve HCV-14-8A	X			(2)No	2	

TABLE 1 (Cont'd)
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
57	202	Close	CCW Hdr. Supply B to Normal Header Isolation Valve HCV-14-8B		X		(2)No	2	(2) Control switch escutcheon to be changed from "Open-Auto-Close" to "Override-Auto-Close"
58	202	Close	CCW Normal Header Return to Hdr. A Isolation Valve HCV-14-9	X			(2)No	2	
59	202	Close	CCW Normal Header Return to Hdr. B Isolation Valve HCV-14-10		X		(2)No	2	
60	211	Open	CCW Outlet Valve from Shutdown HX 1A HCV-14-3A	X			No	8	
61	211	Open	CCW Outlet Valve from Shutdown HX 1B HCV-14-3B		X		No	8	
62	832	Start	Intake Cooling Water Pump 1A	X			No	10	
63	833	Start	Intake Cooling Water Pump 1B		X		No	7	
64	834	Start	Intake Cooling Water Pump 1C			X	No	12	
65	835	Close	ICW Hdr. A Disch. to TCW Heat Exchange Isolation Valve MV-21-3	X			No	6	
66	836	Close	ICW Hdr. A Disch. to TCW Heat Exchange Isolation Valve MV-21-2		X		No	6	
67	837	Close	ICW Lube Water Disch. Valve to Circ. Water Pumps MV-21-4			X	No	6	
68	103	Start Inhibit	RCP 1A-1 Oil Lift Pump P-1A1-B		X		(1)Yes	12	(1) SIAS inhibits auto loading of RCP Oil Lift Pumps on loss of DG power. Reset of SIAS will return pumps to auto control.
69	107	Start Inhibit	RCP 1B-1 Oil Lift Pump P-1B1-B	X			(1)Yes	10	

TABLE 1 (Cont'd)
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESFAS Reset	CWD Rev	Notes
70	111	Start Inhibit	RCP 1A-2 Oil Lift Pump P-1A2-B	X			(1)Yes	10	(1) SIAS inhibits auto loading of RCP Oil lift pumps on loss of DG power. SIAS reset will return pumps to auto control.
71	115	Start Inhibit	RCP 1B-2 Oil Lift Pump P-1B2-B		X		(1)Yes	11	
72	505	Start	Reactor Aux. Bldg. Main Supply Fan HVS-4A	X			No	7	
73	506	Start	Reactor Aux. Bldg. Main Supply Fan HVS-4B		X		No	7	
74	503	Start	ECCS Area Exhaust Fan HVE-9A	X			No	7	
75	504	Start	ECCS Area Exhaust Fan HVE-9B		X		No	7	
76	465	Open	Air Supply Dampers to ECCS Pump Room A D-1, D-2	X			(2)No	5	(2) Dampers are actuated by HVE 9A & 9B and will not return to normal upon reset of SIAS. Operator has to stop fan HVE-9A, 9B in order to return dampers to normal position.
77	465	Open	Air Supply Dampers to ECCS Pump Room B D-3, D-4		X		(2)No	5	
78	465	Close	ECCS Area Isolation Dampers D-8A, D-9A	X			(2)No	5	
79	465	Close	ECCS Area Isolation Dampers D-8B, D-9B		X		(2)No	5	
80	466	Close	ECCS Area Isolation Dampers D-7A, D-5A	X			(2)No	3	
81	466	Close	ECCS Area Isolation Dampers D-7B, D-5B		X		(2)No	3	
82	467	Close	ECCS Area Isolation Dampers D-11A, D-6A	X			(2)No	4	
83	467	Close	ECCS Area Isolation Dampers D-11B, D-6B		X		(2)No	4	

TABLE 1 (Cont'd)
COMPONENTS ACTUATED ON SIAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
84	466	Close	ECCS Area Isolation Dampers D-12A	X			(2)No	3	
85	466	Close	ECCS Area Isolation Dampers D-12B		X		(2)No	3	
86	307	Start	Containment Fan Cooler HVS-1A	X			No	9	
87	308	Start	Containment Fan Cooler HVS-1B	X			No	9	
88	309	Start	Containment Fan Cooler HVS-1C		X		No	9	
89	310	Start	Containment Fan Cooler HVS-1D		X		No	9	
90	212	Close	RCP Cooling Water Supply Isolation Valve HCV-14-1	X			(1)No	4	(1) Control switch escutcheon to be changed from "Open-Auto-Close" to "Override-Auto-Close"
91	212	Close	RCP Cooling Water Supply Isolation Valve HCV-14-7		X		(1)No	4	(2) Dampers are activated by Fans HVE9A & 9B and will not return to normal upon reset of SIAS. Operator has to stop fan HVE9A, 9B in order to return dampers to normal position.
92	212	Close	RCP Cooling Water Return Isolation Valve HCV-14-2	X			(1)No	4	
93	212	Close	RCP Cooling Water Return Isolation Valve HCV-14-6		X		(1)No	4	
94	576	Close	Reactor Cavity Sump Pump Isolation Valve LCV-07-11A	X			No	3	
95	576	Close	Reactor Cavity Sump Pump Isolation Valve LCV-07-11B		X		No	3	

Rev 1 Date 3/4/81

TABLE 2
COMPONENTS ACTUATED ON RAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
96	251	Stop	LPSI Pump 1A	X			No	9	
97	252	Stop	LPSI Pump 1B		X		No	8	
98	244	Close	S.I. Pump Recirc. Line Valve to RWT V-3659	X			No	9	
99	245	Close	S.I. Pump Recirc. Line Valve to RWT V-3660		X		No	11	
100	299	Open	Containment Sump Outlet Valve to Recirc. Header A MV-07-2A	X			No	5	
101	300	Open	Containment Sump Outlet Valve to Recirc. Header B MV-07-2B		X		No	6	
102	297	Close	RWT Outlet Valve to S.I. Header A MV-07-1A	X			No	5	
103	298	Close	RWT Outlet Valve to S.I. Header B MV-07-1B		X		No	5	

Rev 1 Date 3/4/81

TABLE 3

COMPONENTS ACTUATED ON CSAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
104	287	Start	Containment Spray Pump 1A	X			No	8	(1) On SIAS all L.O Relay Trips except o/s and o/c diff are disconnected. L.O Relay trips will be reinstated when bus tie breakers are reclosed and SIAS, CIS and CSAS are reset.
105	290	Start	Containment Spray Pump 1B		X		No	8	
106	289	Open	Containment Spray Header A Inlet Valve FCV-07-1A	X			No	9	
107	289	Open	Containment Spray Header B Inlet Valve FCV-07-1B		X		No	9	(2) Circuit is self reseting.
108	957	Start	Diesel Generator 1A	X			No	9	
109	967	Start	Diesel Generator 1B		X		No	9	
110	956	Block Trip	Diesel Generator Lockout Relay 1A	X			(1)Yes	11	
111	629	Rese-quence Block 6 & 7	Diesel Generator Loading 1A	X			(2)	10	
112	966	Block Trip	Diesel Generator Lockout Relay 1B		X		(1)Yes	9	
113	630	Rese-quence Block 6 & 7	Diesel Generator Loading 1B		X		(2)	9	
114	292	Open	Caustic Spray Valve I-SE-07-1A	X			No	0	

TABLE 3
COMPONENTS ACTUATED ON CSAS

Rev 1 Date 3/4/81

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
115	292	Open	Caustic Spray Valve I-SE-07-1B		X		No	0	
116	292	Open	Caustic Spray Valve I-SE-07-2A	X			No	0	
117	292	Open	Caustic Spray Valve I-SE-07-2B		X		No	0	

TABLE 4
COMPONENTS ACTUATED ON CIS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
118	513	Start	Shield Building Vent System Fan HVE-6A	X			No	9	
119	516	Start	Shield Building Vent System Fan HVE-6B		X		No	8	
120	490	Start	Control Room Emerg. Filtration Fan HVE-13A	X			No	10	
121	491	Start	Control Room Emerg. Filtration Fan HVE-13B		X		No	9	
122	159	Close	Letdown Line Isolation Valve V-2516	X			No	11	
123	159	Close	Letdown Line Isolation Valve V-2515		X		No	11	
124	159	Close	RCP Control Bleed Off Isolation Valve ISE-01-1		X		No	11	
125	578	Close	RCS Sample Line Isolation Valve V-5200	X			No	6	
126	578	Close	RCS Sample Line Isolation Valve V-5203		X		No	6	
127	579	Close	RCS Surge Line Sample Isolation Valve V-5201	X			No	6	
128	579	Close	RCS Surge Line Sample Isolation Valve V-5204		X		No	6	
129	580	Close	Pressurizer Sample Line Isolation Valve V-5202	X			No	6	
130	580	Close	Pressurizer Sample Line Isolation Valve V-5205		X		No	6	

TABLE 4 (Cont'd)
COMPONENTS ACTUATED ON CIS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
131	849	Close	Primary Water Line Isolation Valve MV-15-1		X		No	4	
132	159	Close	RCP Control Bleed Off Isolation Valve V-2505	X			No	11	
133	319	Close	Gen. Bloedown Isolation Valve FCV-23-3	X			No	10	
134	317	Close	Instrument Air Isolation Valve MV-18-1	X			No	6	
135	511	Close	Purge In-et Isolation Valve FCV-25-1	X			No	5	
136	511	Close	Purge Inlet Isolation Valve FCV-25-3	X			No	5	
137	512	Close	Purge Inlet Isolation Valve FCV-25-2		X		No	6	
138	511	Close	Purge Outlet Isolation Valve FCV-25-5	X			No	5	
139	512	Close	Purge Outlet Isolation Valve FCV-25-4		X		No	6	
140	512	Close	Purge Outlet Isolation Valve FCV-25-6		X		No	6	
141	509	Stop	Containment Purge Exhaust Fan HVE-8A	X			No	7	
142	510	Stop	Containment Purge Exhaust Fan HVE-8B		X		No	6	
143	566	Close	Nitrogen Supply Isolation Valve V-6741		X		No	6	
144	564	Close	Waste Gas Header Isolation Valve V-6554	X			No	8	
145	564	Close	Waste Gas Header Isolation Valve V-6555		X		No	8	
146	576	Close	Reactor Cavity Sump Pump Disch. Isolation Valve LCV-07-11A	X			No	8	

TABLE 4 (Cont'd)
COMPONENTS ACTUATED ON CIS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESFAS Reset	CWD Rev	Notes
147	576	Close	Reactor Cavity Sump Pump Disch. Isolation Valve LCV-07-11B		X		No	8	(1) On SIAS all L.O Relay Trips except o/s and o/c differential are disconnected. L.O Relay trips will be reinstated when bus tie breakers are reclosed and SIAS, CIS and CSAS are reset.
148	1172	Close	Control Room Outside Air Inlet Valve North FCV-25-16	X			No	8	
149	1170	Close	Control Room Outside Air Inlet Valve North FCV-25-14		X		No	8	
150	1173	Close	Control Room Outside Air Inlet Valve South FCV-25-17	X			No	10	
151	1171	Close	Control Room Outside Air Inlet Valve South FCV-25-15		X		No	10	
152	1174	Close	Control Room Toilet Air Exhaust Valve FCV-25-18	X			No	6	
153	1175	Close	Control Room Roilet Air Exhaust Valve FCV-25-19		X		No	7	
154	1182	Close	Control Room Kitchen Air Exhaust Valve I-FCV-25-24	X			No	3	
155	1183	Close	Control Room Kitchen Air Exhaust Valve I-FCV-25-25		X		No	3	
156	956	Block Trip	Diesel Generator Lockout Relay 1A	X			(1)Yes	11	
157	966	Block Trip	Diesel Generator Lockout Relay 1B		X		(1)Yes	9	

TABLE 4 (Cont'd)
COMPONENTS ACTUATED ON CIS

Rev 1 Date 3/4/81

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESFAS Reset	CWD Rev.	Notes
158	320	Close	Containment Sample Isolation Valves:						(1) Operator can manually override CIS (TMI Shielding). Switch escutcheon to be changed from RESET to RESET/ CIS Override.
			FCV-26-2	X			No	1	
			FCV-26-4	X			No	1	
			FCV-26-6	X			No	1	
159	320	Close	Containment Sample Isolation Valves:						
			FCV-26-1		X		No	1	
			FCV-26-3		X		No	1	
			FCV-26-5		X		No	1	
160	957	Start	Diesel Generator 1A	X			No	9	
161	967	Start	Diesel Generator 1B		X		No	9	
162	461	Close	Steam Generator Blowdown Sample Isolation Valves FCV-23-7, FCV-23-9	X			No	9	
163	563	Close	RDT Containment Isolation Valve V-6301	X			(1)No	5	
164	563	Close	RDT Containment Isolation Valve V-6302		X		(1)No	5	
165	319	Close	Generator Blowdown Isolation Valve FCV-23-5	X			No	10	
165A	319	Close	Generator Blowdown Isolation Valve FCV-23-4		X		No	10	
165B	319	Close	Generator Blowdown Isolation Valve FCV-23-6		X		No	10	

Rev 1 Date 3/4/81

TABLE 5

COMPONENTS ACTUATED ON MSIS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
166	312	Close	Main Steam Line A Isolation Valve HCV-08-1A	X			No	8	(1) Valve will open automatically when it's FW Pump is running and after MSIS and SIAS are reset.
167	315	Close	Main Steam Line B Isolation Valve HCV-08-1B		X		No	9	
168	311	Close	Main Steam Isolation Valve A Bypass Valve MV-08-1A	X			No	8	
169	314	Close	Main Steam Isolation Valve B Bypass Valve MV-08-1B		X		No	9	
170	614	Close	FW 1A/1B Discharge Valve MV-09-7		X		No	4	
171	633	Close	FW 1A/1B Discharge Valve MV-09-8		X		No	5	
172	616	Close	FW 1A Discharge Valve MV-09-1	X			(1)No	13	
173	621	Close	FW 1B Discharge Valve MV-09-2	X			(1)No	10	

TABLE 6

COMPONENTS ACTUATED ON EFAS

Item	CWD	ESFAS Action	Component	Safety Channel A	Safety Channel B	Safety Channel AB	Returns To Normal Upon ESF-AS Reset	CWD Rev	Notes
174	629	Start	Aux Feedwater Pump 1A	X			No	10	BCS-567-79.303 Rev 1
175	630	Start	Aux Feedwater Pump 1B		X		No	10	BCS-567-79.305 Rev 1
176	632	Open	AFWP Auto Start Steam Va. MV-08-3			X	No	10	BCS-567-79.308 Rev 2
177	652	Open	AFWP Auto Start Steam A Va. MV-08-13			X	No	2	BCS-567-79.310 Rev 2
178	653	Open	AFWP Auto Start Steam B Va. MV-08-14			X	No	2	BCS-567-79.311 Rev 2
179	608	Open	AFWP 1A Disch to SG1A Va. MV-09-9	X			No	5	BCS-567-79.385 Rev 2
180	609	Open	AFWP 1B Disch to SG 1B Va. MV-09-10		X		No	5	BCS-567-79.387 Rev 2
181	612	Open	AFWP 1C Disch to SG 1A Va. MV-09-11			X	No	6	BCS-567-79.386 Rev 1
182	613	Open	AFWP 1C Disch to SG 1B Va. MV-09-12			X	No	5	BCS-567-79.388 Rev 1