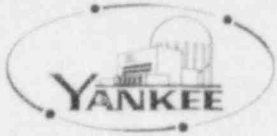


# YANKEE ATOMIC ELECTRIC COMPANY



1671 Worcester Road, Framingham, Massachusetts 01701

2.C.2.1  
FYR 82-93

September 17, 1982

United States Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Mr. Dennis M. Crutchfield, Chief  
Operating Reactors Branch No. 5  
Division of Licensing

References: (a) License NO. DPR-3 (Docket No. 50-29)  
(b) USNRC Letter to YAEC, dated July 29, 1982

Subject: Additional Information for TMI Action Plan Item II.K.3.17 -  
ECCS Outage History

Dear Sir:

In response to Reference (b), the attached table has been prepared. This table summarizes outage history for the emergency core cooling and diesel generator systems including outages for surveillance testing and planned, unplanned, or preventative maintenance.

We trust this information is satisfactory; however, if you have any questions, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

J. A. Kay  
Senior Engineer - Licensing

JAK/smw

Attachment

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
5/13/76	-	ECCS LOCA Analysis	Wrong assumption	Reduce pressure	76-3	Mode 5 When Reported
6/24/76	7 days	SI Tank	Wrong boron concentration (Personnel E)	Diluted	76-6	Steady State 183.5 MU
12/16/76	4 hours 40 minutes	#1 HPSI Pump	Seal failure	Installed new gasket	76-14	Steady State Mode 1
1/7/77	2 hours 40 minutes	#1 LPSI Pump	Worn packing	Repacked pump	77-2	Steady State Mode 1
3/1/77	3 hours	#1 Emergency Diesel	Starter motor failure	Replaced motor	77-11	Steady State Mode 1
5/24/77	4 hours	SI Accumulator Low-Level (Level Instrument)	Instrument drift	Calibrated instrument raised level	77-27	Steady State Mode 1
8/2/77	5 days	#1 Emergency Diesel	Failed to operate @ 400 kw for 1 hour due to radiator fouling	Cleaned radiator	77-41	6
8/2/77	11 days	#3 Emergency Diesel	Failed to operate @ 400 kw for 1 hour due to radiator fouling	Cleaned radiator	77-42	6

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
1/26/78	5 hours 15 minutes	SI-TV-604	To repair, had to shut SI-V-53 & 69, making SI-PR-59 inoperable (valve leaked by)	Repaired (replaced seal ring)	78-5	6
11/30/78	2 hours 20 minutes	CS-V-630	Radioactive crud trap isolated tank from SI System	Flushed valve	78-33	5
3/12/79	2 hours 25 minutes	TDC-2 (SI Accumulator Actuation Circuit)	Sticky relay	Replaced in kind	79-12	1
10/4/79		CS-MOV-540	Leaked by - To repair isolated BMT & SITK from system	Machined & lapped	79-24	5
11/9/79	3 hours	TDC-4 (SI Accumulator Actuation Circuit)	Design deficiency	Modified all units	79-30	1
1/26/80	39.5 hours	SI-SV-609	Dirty Internals	Cleaned	80-6	5
1/28/80	16 hours	SI-SOV-56	Dirty Internals	Replaced in kind	80-7	5
2/1/80	113 days	TDC 1, 2, 3, and 4 (SI Accumulator Actuation Circuits)	Reversed polarity (incorrect wiring)	Rewired	80-8	5

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
3/7/80	Adjusted in place	TDC-2 (SI Accumulator Actuation Circuit)	Setpoint drift	Readjusted	80-9	5
7/9/80		CS-MOV-540	Weld defect (SI & BAMT isolated from system)	Repaired weld	80-14	5
11/25/78	3 days	(SIAS) SI-PS-14	Relocate/Replacement of Heiseline Pressure Switch PDC 78-15 (JO 78-179)	Work accomplished	None	6
7/18/79		SI-V-98	Leaked by seat SI-PI-10 & SI-PS-10 remove from service (JO 79-144)	Replaced in kind	None	1
10/5/79		SI-PR-602	Does not regulate proper pressure (JO 79-144)	Rebuilt valve	None	5
10/12/79		(SIAS) SI-PS-14	Did not functionally test (JO 79-169)	Replaced in kind	None	5
10/27/79		SI-FT-5	Improper operation (JO 79-177)	Replaced	None	5

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
6/15/77	3 days	#1 LPSI Pump	Packing glands subject to excessive leakage (JO 74-53)	Replaced packing with mechanical seals	None	5
7/13/77		SI-V-39	Packing leak	Repacked valve	None	6
1/9/76	8 hours	SI-FT-1	Boron buildup leaking fittings (JO 76-6)	Repiped fittings	None	1
3/3/76	2 1/2 hours	SI-PT-1	Leaking fittings (JO 76-32)	Replaced fittings	None	1
3/8/76		SI Accumulator Safety Valve Solenoid	Improper operation	Replace coil	None	1
5/3/76	8 hours	SI-LI-7	Irratic operation (JO 76-64)	Performed OP-4614	None	1
8/9/77	6 days	NS-V-13	Leaked by (JO 76-101)	Replaced valve	None	5
5/13/76		#1 LPSI Pump	Excessive leakage (JO 76-111)	Added packing	None	1
8/10/77	2 days	VD-V-859	Leaks by (JO 76-127)	Replaced valve	None	5

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
6/23/76	8 hours	Loop 2 SI Flow Indication	Improper operation (JO 76-137)	Performed OP- 20	None	1
7/1/76	8 hours	SI-FT-6	Improper operation static buildup (JO 76-149)	Add antistatic solution to meter & performed OP-4619	None	1
7/27/76		SI Tank Level Indication Sensing Lines	Fitting leaks (JO 76-155)	Replaced fittings in kind	None	1
4/22/77		SI-FI-6	Improper operation (JO 77-65)	Replaced in kind	None	1
5/13/77	5 hours	Loop 1 Press Channel CS-V-655	Leaks by (JO 77-65)	Replaced valve in kind	None	1
5/31/77	3 hours	SI-FT-3	Plug leak (JO 77-94)	Replaced teflon tape on threads	None	1
5/31/77	1 1/2 hours	SI-FT-1	Leak in transmitter fitting (JO 77-95)	Cleaned threads and retorqued	None	1
6/23/77	8 hours	SI-FT-1	Improper operation (JO 77-119)	Recalibrated Per OP-6460	None	6

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
7/26/77	8 hours	SI-V-21	Leaks by (JO 77-132)	Repaired Valve	None	5
8/16/77	8 hours	SI-V-36	Inspection for obstruction (JO 77-182)	No repairs required	None	5
8/15/77	8 hours	SI-LI-4	Defective meter (JO 77-183)	Replaced meter in kind	None	5
8/26/77	8 hours	SI-PR-58, 59, and 602	Damaged by water hammer during test (JO 77-198)	Cleaned and replaced Pilot Valve Diaphragm in PR-58 & 59	None	5
8/29/77	8 hours	SI-PR-58	Leaks by (JO 77-203)	Adjusted regulator	None	5
8/23/77	8 hours	SI-V-39	Leaks by (JO 77-192)	Repaired	None	5
9/21/77	8 hours	#1 & 2 Flow Install. Fittings & Tubing	Leaked (JO 77-123)	Replace bad tubing and fittings	None	1
9/22/77	8 hours	SI-PS-14	Test valve had galled threads (JO 77-216)	Replaced valve in kind	None	1

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
10/6/77	2 hours	CA-PS-239	Sticky operation (JO 77-219)	Replaced switch calibrated per OP-4634	None	1
12/7/77	7 hours	CA-PS-238 & 239	Galled threads (JO 77-243)	Checked for leaks, found none	None	1
4/3/78	4 hours	Left hand Nz Bottle Relief Valve	Setpoint Drift (JO 77-220)	Replace relief valve in kind	None	1
1/30/78	8 hours	SI-PS-7	Conduit Blocks Ladder to Accumulator (JO 77-269)	Moved Conduit, had to remove Leads to switch temporarily	None	3
1/31/78	8 hours	SI-PS-23	Improper operation	Replaced in kind	None	3
11/22/78	8 hours	SI-V-671, 672, 673, 674 & 675	Packing leak (JO 78-43)	Added packing per AP-5010	None	6
11/13/78	8 hours	SI-V-655	Fitting leak (JO 78-50)	Replaced fitting	None	6
11/6/78	9 days	#2 LPSI Pump	Packing glands subject to excessive leakage (JO 78-79)	Replace packing with mechanical seals	None	6
11/21/78	4 days	#2 LPSI Pump	Excessive leakage from new mechanical seal (JO 78-79)	Replaced seal ring in kind	None	6



OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
11/6/78	9 days	#3 LPSI Pump	Packing glands subject to excessive leakage (JO 78-79)	Replace packing with mechanical seals	None	6
11/21/78	1 day	#3 LPSI Pump	Excessive leakage from new mechanical seal (JO 78-79)	Replaced seal ring in kind	None	6
5/9/78	8 hours	#1 SI flow Transmitter Tubing	Fitting leakage on Broadway (JO 78-83)	Replaced fittings	None	1
11/13/78	8 hours	CS-V-604	Leak's by	Lapped valve	None	6
8/14/78	8 hours	SI-HPS-25	Improper operation (JO 78-145)	Replaced switch in kind	None	1
11/26/78	1 day	SI Nitrogen Gauge Addition	PDC 78-13 (JO 78-130)	Installed gauges on N <sub>2</sub> system	None	6
11/18/78	8 hours	SI-MOV-49	Packing leak (JO 78-191)	Repacked valve	None	6
11/12/78	8 hours	#2 Loop Flow Meter	Inoperable (JO 78-223)	Replaced with new model (GE - TYPE 180)	None	6
12/11/78	8 hours	SI-SV-1	Leaks by (JO 78-225)	Replaced seat & "O" ring	None	5

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
11/11/78	8 hours	SI-V-612	Improper operation leaks by (JO 78-226)	Replaced valve in kind	None	6
11/12/78	8 hours	SI-V-611	Leaks by (JO 78-224)	Replaced in kind	None	6
11/13/78	8 hours	SI-PR-602	Nitrogen leaks in speed controller (JO 78-228)	Replaced "O" rings	None	6
12/14/78	8 hours	SI-TV-604	Leaked by (JO 78-286)	Replace seal ring	None	4
2/24/79	8 hours	#2 HPSI Pump Control Switch	Works hard (JO 79-13)	Cleaned switch and lubricated	None	3
2/24/79	8 hours	CS-V-682	Packing leak (JO 79-15)	Replace valve in kind	None	3
8/26/80	8 hours	SI Accumulator Relief Valve System	Leaking fittings (JO 80-134)	Replaced fittings & tubing	None	5
7/1/80	8 hours	SI-V-601	Leaks by (JO 80-130)	Replace seal ring	None	5
6/23/80		SI-PR-58	Does not regulate properly (JO 80-101)	Repaired valve, parts required	None	5

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
7/1/80		SI-PR-602	Does not regulate properly (JO 80-101)	Repaired valve, parts required	None	5
7/1/80		SI-PR-59	Does not regulate properly (JO 80-101)	Repaired valves, parts required	None	5
10/15/80	8 hours	Si Tank Local Level Indicator Fittings	Fitting leaks (JO 80-179)	Replace fittings and tubing	None	5
10/15/80	8 hours	SI-TV-609	Leaks by (JO 80-138)	Replace valve seat	None	5
9/29/80	8 hours	SI-SV-1	Testing (JO 80-143)	Replaced valve seats of pilot	None	6
9/29/80	8 hours	SI-SV-2	Testing (JO 80-143)	Replaced valve seats of pilot	None	5
Every 31 days	5 min/day Done one at a time	TD Relays	T.S. Requirement 4.5.1.C.2	Only one TD Relay is done at a time. ECCs initiation is still functional		
Every 18 months	3 hours	Operability Test	T.S. requirement 4.5.1.d. 1,2, and 3			Done when SI System is not required

OUTAGE OF EMERGENCY CORE COOLING SYSTEM

DATE	DURATION	COMPONENT	REASON	CORRECTIVE ACTION	LER	MODE
Every 18 months	2 minutes for each valve	Time the cycling duration of each motor operated valve	T.S. requirement 4.4.9.1.a (ISI)	Only one valve is cycled at any one time		Done when SI System is not required
Every 60 months	8 hours	Capacity Test Batteries	T.S. requirement 4.8.2.3.2.C	Battery buses are cross tied so that ECCS System is not lost during surveillance		Done when SI System is not required
Every 18 months		Operability Test	T.S. requirement 4.8.1.1.1.b			Done when SI System is not required
Every 18 months	8 hours	Diesel Inspection	T.S. requirement 4.8.1.1.2.d.1			Done when SI System is not required

Also, each SI Pump has oil change every 10 months during Diesel Inspection above.