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50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
UHRIG,R.E. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards reponses to NUREG-0737 re shift technical advisor & EEC sys outages per 801031 ltr,Rept re improving emergency preparedness-long-term to be submitted separately.

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FLORIDA POWER & LIGHT COMPANY

January 2, 1981
L-81-1

Office of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Re: Turkey Point Units 3 & 4
Docket No. 50-250, 50-251
POST TMI REQUIREMENTS

Florida Power and Light has reviewed your letter of October 31, 1980 and submits the following enclosures as our reports on the indicated NUREG 737 items:

Enclosure	Item	Description
1	I.A.1.1	Shift Technical Advisor
2	II.K.3.17	ECC System Outages

Our report on Item III.A.2 (Improving Emergency Preparedness-Long Term) will be submitted as a separate letter.

Should you have any questions on these items we would be happy to meet with you or your staff to clarify our reports.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/PLP/md

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

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ENCLOSURE 1

Re: Turkey Point Units 3 & 4
Docket Nos. 50-250, 50-251
POST TMI REQUIREMENTS

SHIFT TECHNICAL ADVISOR

The Turkey Point STA Program includes training in the following areas:

1. Reactor Theory. This portion of the program utilizes a series of 26 video tape presentations prepared by the NUS Corporation. Total contact time averages 40 hours. An accredited college program in nuclear engineering can be substituted for this requirement.

2. Logics and Instrumentation, and Control Diagrams. This portion of the Program consists of 40 hours of training in the capabilities of instrumentation and control in the plant, with heavy emphasis in the area of reactor and turbine protection, safeguards actuation, loss of offsite power, pressurizer level and pressure control, and steam generator level contol.

3. System Description. This portion of the program consists of 20 hours of training in the requirements, design and layout of plant safeguards systems, auxiliary feedwater, charging and letdown, reactor coolant system, and steam and feedwater (including steam generator) systems. Other plant systems are covered under self-study and attendance at reactor operator training classes and are not included as a requirement at this time.

4. Transient and Accident Analysis, including Emergency Operating Procedures. This portion of the training consists of 40 hours of training in plant transients and accidents and the procedures for coping with them. Portions of training consists of lectures developed and presented by the FP&L Nuclear Analysis Department.

5. Technical Specifications. This portion of the program consists of 12 lecture hours on the Turkey Point Technical Specificatons.

6. Simulator Training. This portion of the program consists of 40 hours of training in transient and accident response at a simulator of a Westinghouse PWR plant. This training is not considered as a pre-requisite to functioning as an STA if the individual can demonstrate adequate knowledge in this area. However, simulator training will be provided to these individuals at least once a year.

7. In addition to the requirements listed in items 1-5, STA Trainees are required to do considerable self-study to prepare themselves for performing the STA role. All of the present STA Trainees have already spent time on shift directed towards becoming an effective participant in safe operation of the plant.

For purposes of STA qualification, individuals who pass and maintain a RO or SRO license can be exempted from any or all portions of the training or requalification program.

The STA requalification program is directed at maintaining a high level of knowledge in plant systems, accident and transient response, procedural requirements, and operations assessment. To accomplish this, a review of emergency procedures, technical specifications, systems, accident mitigating, logic and systems, and significant plant events throughout the nuclear industry will be conducted during the year. An average of two training sessions a month will be held to discuss the subject matter. In addition, each STA will attend simulator training annually. This is planned to be done in conjunction with the Turkey Point Licensed Operator Requalification program.

It is the position of Florida Power & Light that the need for Shift Technical Advisors is and will continue to be an interim requirement. The STA program will eventually be phased out at such time as the Shift Supervisor's qualifications have been upgraded and the man-machine interface in the Control Room has been acceptably upgraded. Therefore, the "long-term" STA program will consist of the qualification and requalification programs described for Turkey Point. Selection criteria for replacement STAs, if required, will be such as to meet the requirements of an STA and those of the Plant Technical Department since the STAs are organizationally part of that Department.

NUREG-0737 also requires a comparison of the proposed INPO STA program and that of the Turkey Point Plant. A direct comparison is difficult due to the apparent difference in philosophy concerning program emphasis. A best attempt to develop a one-to-one correlation is included as Attachment A.

ATTACHMENT A

PROGRAM ELEMENT	INPO STA PROGRAM	TURKEY POINT STA PROGRAM
Position Description	The function, general qualifications, general duties, typical responsibilities, and accountability are essentially the same for both programs.	
Experience	Minimum 18 months; at least two of which is at an operating nuclear plant.	No formal requirements however for present STAs: (including 2 people hired in 1980 for STA duties) Average: 81.7 months Minimum: 18 months Maximum: 144 months
	Minimum of 12 months at plant which position is to be filled.	No formal requirements; however, for present STAs (including 2 new hires) Average: 26.1 Maximum: 144 Minimum: 3
Absences from STA Duties	> 30 days requires training on facility procedure changes	STA personnel are required to participate in the Technical Dept. Program for facility and procedure change review.
	> 6 months requires annual requalification training.	No requirement
Education-Prerequisites beyond High School Diploma	270 Contact Hours	Requires bachelor's degree or equivalent in a scientific or engineering discipline
Education-College Level Fundamental Education	520 Contact Hours	Required bachelor's degree or equivalent in a scientific or engineering discipline (All present STA's have degrees)
Applied Fundamentals-Plant Specific	120 Contact Hours	None
Reactor Theory	None	40 Contact Hours
Management/Supervisor Skills	40 Contact Hours	None

PROGRAM ELEMENT	INPO STA PROGRAM	TURKEY POINT STA PROGRAM
Plant Systems	200 Contact Hours	60 Contact Hours
Adminstrative Controls	80 Contact Hours	12 Contact Hours
General Operating Procedure	30 Contact Hours	None- However, all STA's have been in the Technical Department program for procedure change review throughout 1980.
Transient/Accident Analysis and Emergency Procedures	30 Contact Hours	40 Contact Hours
Simulator Training	Trainee/instructor ratio > 4:1	No formal requirement; however, Trainee/ instructor ratio = 5/1
	50 Contact hours(classroom)	20 contact hours (classroom)
	50 Contact hours(simulator)	20 contact hours (simulator)
Annual Requalification Training	40 hours (lecture)	95 hours (estimated) (lecture)
	40 hours (simulator)	40 hours (simulator)

RESPONSE TO NUREG 0660

ITEM II.K.3.17

REPORT ON OUTAGES OF ECC SYSTEMS

This report details the outages of ECC systems at Turkey Point Units 3 and 4 from January 1, 1976 through November 30, 1980. The systems covered in this report are those systems included in Turkey Point Technical Specifications Section 3.4, "Engineered Safety Features."

The report lists outages identified in available records at Turkey Point that resulted in less than the minimum required ECCS Capacity as defined in Section 3.4 of the Technical Specifications while the reactors were critical. ECCS components are permitted by technical specifications to be out of service for specific periods of time. The reason for the outage is identified, however, in some cases the specific maintenance performed could not be identified.

Cumulative reactor availability (during the reporting period) for Turkey Point was 32,412 hours for Unit 3 and 31,367 hours for Unit 4.

Additional information will be submitted which will include Diesel Generator outages on or before March 1, 1981.

THE FOLLOWING SYSTEMS HAD NO OUTAGES DURING POWER OPERATION:

UNIT 3	RESIDUAL HEAT REMOVAL SYSTEM
UNITS 3 & 4	EMERGENCY CONTAINMENT FILTER SYSTEM

TURKEY POINT UNIT 3
SAFETY INJECTION SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
4-20-76	25.5	4B pump	
4-27-76	13.2	4A pump	
4-27-76	24	4B pump	
5-3-76	1	4B pump	
5-4-76	1	4B pump	
5-5-76	6.5	4A pump	
5-12-76	24	4A pump	
5-20-76	98.8	4B pump	
6-11-76		BIT	Low boron/add boron (LER 250-76-4)
6-13-76	1.3	4A/4B pump	
6-13-76	23.2	4A pump	
6-13-76	41.6	4B pump	
6-14-76	16.9	4A pump	
9-21-76	.2	4A pump	
10-6-76	1	BIT	Low boron/add boron (LER 250-76-8)
5-25-77	24.4	4A/4B pump	
5-26-77	11.2	3A/3B pump	Venting
5-31-77	16.5	4A/4B pump	
6-1-77	10.8	4A/4B pump	Maintenance
6-2-77	12.50	4A/4B pump	Work BFD relays
6-3-77	4.3	4A/4B pump	Work BFD relays
6-8-77	4	4A pump	
6-10-77	2.3	4A pump	
6-21-77	124.7	4B pump	BRKR inspection
8-25-78	432	4B pump	Purification
9-12-78	13.5	4A pump	BRKR inspection
9-19-78	5	4B pump	Special test
9-19-78	5	4A pump	Special test
10-13-78	.5	3A pump	
10-13-78	.5	3B pump	

TURKEY POINT UNIT 3
SAFETY INJECTION SYSTEM (CONT'D)

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
10-13-78	.8	4A pump	
10-13-78	1.5	4B pump	
2-12-79	537.9	4B pump	BRKR inspection-overhaul
4-29-79	91.75	3B pump	
4-29-79	.8	RWST	Low level/add water (LER 250-79-16)
2-11-80	14.5	3B pump	Repair
8-15-80	.6	3A pump	Failed BKR/replace
9-10-80	9.5	4A pump	Maintenance
9-11-80	35.7	4A pump	Maintenance

The cumulative out of service percentage is 5.06.

TURKEY POINT UNIT 3

COMPONENT COOLING WATER SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
8-10-76	14.8	3C pump	
8-11-76	14.8	3B pump	
8-11-76	14.8	3A pump	
3-22-77		3C pump	PM
5-26-77	1.3	3A pump	
5-26-77	1.9	3B pump	
5-26-77	2.5	3C pump	
8-17-77	23.5	3A heat exchanger	Clean
8-18-77	21.8	3B heat exchanger	Clean
8-22-77	14.8	3B heat exchanger	
9-12-77	1.9	3C pump	PM
9-12-77	.9	3B pump	PM
9-12-77	1.9	3A pump	PM
9-28-77	23.3	3C heat exchanger	Hydrolaser
9-29-77	17.9	3B heat exchanger	Hydrolaser
9-30-77	23	3A heat exchanger	Hydrolaser
10-4-77	77.3	3C pump	Renew seals
11-18-77	24	3C pump	
11-22-77	1.3	3B pump	Change oil
3-9-78		3B pump	PM
5-31-78	21	3A heat exchanger	Clean
6-7-78	22.6	3B heat exchanger	Clean
7-11-78	.5	3A pump	PM
7-11-78	1.6	3B pump	PM
7-11-78	1.3	3C pump	PM
8-29-78	144	3A pump	Maintenance
9-20-78	2	3A pump	Electrical Maintenance
11-1-78	5	3A pump	Repair oil leak
11-7-78	20.1	3A heat exchanger	Repair guage connection
11-22-78	.5	3B heat exchanger	Repair leak
11-28-78	.3	3B pump	PM
11-30-78	113	3A pump	PM
7-17-79	10	3A pump	Change oil
9-6-79	6	3B heat exchanger	Repair guage
10-1-79	4.5	3A pump	PM

TURKEY POINT UNIT 3

COMPONENT..COOLING WATER SYSTEM (CONT'D)

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
10-1-79	.5	3B pump	PM
10-1-79	1	3C pump	PM
6-5-80	16	3A heat exchanger	Clean
6-6-80	10	3B heat exchanger	Clean
12-15-80	4.5	3C heat exchanger	Repair leak

The cumulative out of service percentage is 2.05.

TURKEY POINT UNIT 3

INTAKE COOLING WATER SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
7-15-76	2	3A pump	
7-15-76	14.5	3C pump	
4-12-77	21	3C pump	Repair check valve
4-21-77	3.7	C pump	
5-12-77	13.5	3A header	
8-17-77	2.5	3B header	Clean strainer
8-17-77	4.5	3A header	Clean strainer
9-11-77	2.5	3A pump	
4-5-78	2	3C pump	Change filter
4-5-78	2.5	3B pump	Change filter
4-6-78	20	3A pump	Change filter
5-17-78	.7	3B pump	Change filter
5-17-78	1.7	3A pump	Change filter
7-20-78	12	3C pump	Change temp. indicator
7-28-78	3.1	3A pump	Change filter
7-28-78	.3	3B pump	Change filter
7-28-78	.7	3C pump	Change filter
10-25-78	16.5	3B pump	Failed motor/replace (LER 250-78-16)
10-26-78	2	3B pump	Repack
5-15-79	2.5	3B pump	No flow/back flush (LER 250-79-19)
5-18-79	1.3	3C pump	Change filter
6-12-79	3.5	3A pump	Repack
6-13-79	3	3C pump	Repack
7-24-79	9	3A header	Clean strainer
7-25-79	10.9	3B header	Clean strainer
8-7-79	1.3	3C pump	Repair
8-17-79	.7	3C pump	Change filter
8-30-79	30.5	3B header	Maint. on strainer
2-8-80	7.5	3A header to CCW	Clean strainer
2-11-80	8.7	3B header to CCW	Clean strainer
2-20-80	3.3	3C pump	Add oil
3-3-80	3.1	3B header to CCW	Clean strainer

TURKEY POINT UNIT 3

INTAKE COOLING WATER SYSTEM (CONT'D)

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
3-24-80	6.2	3A pump	Repair temp. indica
4-15-80	4	3A header	Clean strainer
4-17-80	4	3B header	Clean strainer
4-28-80	3	3A pump	
5-8-80	5	3A pump	
5-13-80	3.3	3A header	Clean strainer
5-13-80	4.8	3B header	Clean strainer
6-17-80	8	3C pump	Maintenance
7-7-80	6.5	3A header	Clean strainer
7-7-80	1	3A pump	Change filter
7-7-80	1	3B pump	Change filter
7-7-80	1	3C pump	Change filter
7-8-80	4	3B header	Clean strainer
7-31-80	13.5	3B pump	BKR inspection
8-12-80	2	3A header	Clean strainer
8-12-80	2	3B header	Clean strainer
9-15-80	2	3A header	Clean strainer
9-15-80	1.5	3B header	Clean strainer
9-4-80	10	3C pump	Replace motor
9-12-80	.5.7	3C header	Clean strainer
10-4-80	24	3B pump	
11-4-80	5.7	3A header	Clean strainer
11-5-80	6.5	3B header	Clean strainer

The cumulative out of service percentage is 1.04.

TURKEY POINT UNIT 3

EMERGENCY CONTAINMENT COOLING SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
2-13-76	20.6	3A CS pump	Maintenance
10-12-78	1	3A CS pump	Change oil
10-12-78	.2	3B CS pump	Change oil

The cumulative out of service percentage is .07.

TURKEY POINT UNIT 4
RESIDUAL HEAT REMOVAL SYSTEM
(LOW HEAD SAFETY INJECTION)

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
8-26-76	11.8	4A pump	
8-27-76	9.2	4A pump	
1-8-80	3.1	4B pump	
10-27-80	8.5	4A pump	BKR inspection
10-29-80	23.3	4B pump	PM

The cumulative out of service percentage is .18.

TURKEY POINT UNIT 4

SAFETY INJECTION SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
2-14-76	.5	RWST	Low level/Add water (LER 251-76-2)
6-11-76		BIT	Low boron/add boron (LER 251-76-4)
6-12-76		BIT	Low boron/add boron (LER 251-76-5)
12-7-76	34.5	3B pump	Dead bus 3B
12-28-76	25.5	3A pump	BKR maintenance
1-12-77	22.5	3A/3B pump	
2-9-77	14.5	4A pump	Repair leak
9-13-77	.8	RWST	Low level/add water (LER 251-77-9)
12-1-77	13.5	3B pump	LLRT
12-5-77	11.8	3B pump	LLRT
12-5-77	96	3A pump	LLRT
12-20-77	6.7	3B pump	BKR inspection
12-27-77	6	3B pump	BKR inspection
12-30-77	24	3A pump	BKR inspection
1-11-78	8.5	3B pump	
1-29	10.2	3A pump	Align valves
1-29	7	3B pump	Align valves
8-1-78	15.3	3A/3B pump	Maintenance
9-21-76	3.5	4A pump	Repair leaking flange
10-13-78	.8	4A pump	Maintenance
10-13-78	1.2	4B pump	Maintenance
10-13-78	.5	3A pump	Maintenance
10-13-78	.5	3B pump	Maintenance
11-6-78	2.8	BIT	Low boron/add boron (LER 251-78-15)
1-6-79	719.2	3B pump	Charging pump mod.
2-11-79	628.7	3B pump	Charging pump mod.
3-14-79	3.2	3A pump	Bus inspection
1-7-80	28.3	3B pump	Repack valve
1-8-80	6	4A pump	Repair leak
9-10-80	9.5	4A pump	Maintenance

TURKEY POINT UNIT 4
SAFETY INJECTION SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
9-11-80	35.7	4A pump	Maintenance
10-8-80	155	3B pump	Repair seals
1-8-80	18.6	3A pump	BKR inspection
1-19-80	2.3	3A/3B pump	Safeguards test
1-24-80	4.0	3B pump	Repair leak
1-25-80	4.5	3A pump	Repair leak
2-11-80	14.5	3B pump	Repair

The cumulative out of service percentage is 6.17.

TURKEY POINT UNIT 4

COMPONENT COOLING WATER SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
8-12-76	23.99	4C heat exchanger	
8-28-76	98	4B pump	
8-28-76	23.8	4C heat exchanger	
9-20-76	5.3	4A pump	
1-21-77	1.3	4A pump	
1-21-77	78	4B pump	
9-2-77	2	4C heat exchanger	
9-13-77	2.0	4A pump	Replace seals
9-13-77	86.3	4A pump	Replace seals
9-30-77	24.5	4B heat exchanger	Clean tube (LER 251-77-1(
10-1-77	19.9	4A heat exchanger	Clean tube
10-2-77	10	4B heat exchanger	
11-18-77	3.9	4C pump	Change oil
11-18-77	1.5	4B pump	Change oil
12-21-77	9.7	4A heat exchanger	Repair leak
3-10-78	99	4C pump	Maintenance
3-16-78	2.3	4B pump	PM
3-16-78	93.9	4C pump	Maintenance
6-5-78	78.9	4B pump	
6-22-78	5.3	4B pump	BKR inspection
7-11-78	1	4B pump	PM
7-11-78	1	4A pump	PM
7-11-78	1	4C pump	PM
11-1-78	3.7	4B pump	Repair casing leak
11-29-78	29.3	4A pump	PM
11-30-78	2.7	4C pump	PM
12-2-78	.7	4C pump	
1-22-79	3.3	4C pump	Replace motor
1-29-79	15.9	4B pump	Replace bearings
2-7-79	2.8	4B pump	BKR inspection
2-7-79	22.3	4C pump	BKR inspection
1-21-79	2	4C pump	Check bearings
1-21-79	4	4B pump	Check bearings
1-31-79	19.8	4B pump	Elect. Maintenance

TURKEY POINT UNIT 4

COMPONENT COOLING WATER SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
2-7-79	2.5	4B pump	QC inspection
2-7-79	22.3	4C pump	QC inspection
10-2-79	4.5	4C pump	PM
3-17-80	3.2	4B pump	Replace seals
3-18-80	2.5	4B pump	Repair seals
3-19-80	21	4B pump	Rebuild
6-17-80	11.6	4C heat exchanger	Repair leak (LER 251-80-10)

The cumulative out of service percentage is 2.43.

TURKEY POINT UNIT

INTAKE COOLING WATER SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
9-1-76	3	4B pump	
12-3-76	20.8	4B pump	Maintenance
12-10-76	23	4C pump	
12-17-76	2	4C pump	Maintenance
10-7-77	2	4B pump	Change motor filter
10-7-77	.3	4A pump	Change motor filter
10-7-77	.5	4C pump	Change motor filter
4-5-78		4C pump	
4-6-78	20	4A pump	Replace filter
6-22-78	4	4C pump	Maintenance
7-22-78	3.4	4A pump	Replace alarm
7-26-78	4.2	4B pump	Maintenance
12-11-78	1.3	4A pump	Change filter
12-11-78	6	4C pump	Change filter
3-27-79	4.7	4A header to CCW	Clean strainer
3-31-79	3.7	4B header to CCW	Clean strainer
9-19-79	13.3	4C pump	Repack
11-7-79	1.7	4C pump	Change filter
11-7-79	7.5	4B header to CCW	Clean strainer
11-6-79	13.7	4A header to CCW	Clean strainer
1-3-80	11.5	4A header to CCW	Clean strainer
1-4-80	5	4B header to CCW	Clean strainer
2-1-80	.7	4A pump	
2-4-80	3	4A header to CCW	Clean strainer
2-4-80	7.3	4A pump	Repair check valve
2-5-80	3.5	4B header to CCW	Clean strainer
2-26-80	3	4A header to CCW	Clean strainer
3-4-80	3	4A header to CCW	Clean strainer
3-4-80	8.7	4B header to CCW	Clean strainer
3-11-80	3.5	4A pump	Repair sensing line
3-11-80	1	4A pump	Fix BKR
3-17-80	3.5	4A pump	Repair bolt holes
4-1-80	3.3	4A header to CCW	Valve maintenance
4-16-80	4.7	4A header to CCW	Clean strainer
7-1-80	2.5	4A pump	Add oil
7-7-80	7.7	4A header to CCW	Clean strainer

TURKEY POINT UNIT 4

INTAKE COOLING WATER SYSTEM (CONT'D)

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/ACTION TAKEN
7-8-80	5.9	4B header to CCW	Clean strainer
7-15-80	1.8	4B pump	Change filter
7-15-80	4.0	4C pump	Change filter
7-15-80	3.0	4A pump	Change filter
8-7-80	2	4B pump	Change filter
8-7-80	2	4A pump	Change filter
8-7-80	1	4C pump	Change filter
8-13-80	8.3	4A header to CCW	Clean strainer
9-15-80	5.1	4A header to CCW	Clean strainer
9-15-80	2.5	4B header to CCW	Clean strainer
9-17-80	1.5	4A pump	Replace motor
9-18-80	11.3	4B pump	Replace check valve
10-10-80	15.5	4A header to CCW	Clean strainer
11-3-80	8.3	4A header to CCW	Clean strainer

The cumulative out of service percentage is .89.

TURKEY POINT UNIT 4

EMERGENCY CONTAINMENT COOLING SYSTEM

OUTAGE DATES	LENGTH (HOURS)	COMPONENT(S)	CAUSE/CORRECTIVE ACTION
1-3-79	1.3	A CS pump	Maintenance on MOV 880A
2-13-80	9	CCW to A Emergency Cooler	Maintenance on CV 2905
2-29-80	1	CCW to B Emergency Cooler	Maintenance on CV 2903
3-4-80	10	A CS pump	Maintenance on valves
7-11-80	4.2	C Emergency Cooler	I&C maintenance

The cumulative out of service percentage is .08.