

OPERATING DATA REPORT

DOCKET NO. 50-317
 DATE 12-15-78
 COMPLETED BY S.D. Merson
 TELEPHONE 301-234-5240

OPERATING STATUS

1. Unit Name: Calvert Cliffs No. 1
2. Reporting Period: November, 1978
3. Licensed Thermal Power (MWt): 2700
4. Nameplate Rating (Gross MWe): 918
5. Design Electrical Rating (Net MWe): 845
6. Maximum Dependable Capacity (Gross MWe): 845
7. Maximum Dependable Capacity (Net MWe): 810
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

Notes

9. Power Level To Which Restricted, If Any (Net MWe): _____
10. Reasons For Restrictions, If Any: _____

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	720	8016	31,261
12. Number Of Hours Reactor Was Critical	717.9	5935.9	25,639.5
13. Reactor Reserve Shutdown Hours	2.1	60.8	598.7
14. Hours Generator On-Line	716.5	5762.8	25,154.5
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	1,744,524.0	13,833,647.8	60,302,572.4
17. Gross Electrical Energy Generated (MWH)	587,366	4,583,644	20,058,587
18. Net Electrical Energy Generated (MWH)	562,045	4,365,760	19,144,625
19. Unit Service Factor	99.5	71.9	80.5
20. Unit Availability Factor	99.5	71.9	80.5
21. Unit Capacity Factor (Using MDC Net)	96.4	67.2	75.6
22. Unit Capacity Factor (Using DER Net)	92.4	64.5	72.5
23. Unit Forced Outage Rate	0.5	9.0	6.6

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
Calvert Cliffs No.1 is scheduled for a planned outage starting April 14, 1979 and will be six weeks in duration for general inspection and refueling.

25. If Shut Down At End Of Report Period, Estimated Date of Startup: _____

	Forecast	Achieved
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

OPERATING DATA REPORT

DOCKET NO. 50-318
 DATE 12-15-78
 COMPLETED BY S.D. Yerson
 TELEPHONE 301-234-5240

OPERATING STATUS

1. Unit Name: Galvert Cliffs No. 2
2. Reporting Period: Nov. 1978
3. Licensed Thermal Capacity (Net MWe): 2700
4. Nameplate Rating (Gross MWe): 911
5. Design Electrical Rating (Net MWe): 845
6. Maximum Dependable Capacity (Gross MWe): 845
7. Maximum Dependable Capacity (Net MWe): 810
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

Notes

9. Power Level To Which Restricted, If Any (Net MWe): None
10. Reasons For Restrictions, If Any: Performing cycle two escalation to power physics testing.

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>720</u>	<u>8,016</u>	<u>11,616</u>
12. Number Of Hours Reactor Was Critical	<u>663.9</u>	<u>6,499.1</u>	<u>12,258.0</u>
13. Reactor Reserve Shutdown: Hours	<u>0.0</u>	<u>72.5</u>	<u>219.4</u>
14. Hours Generator On-Line	<u>657.3</u>	<u>6,404.5</u>	<u>12,081.6</u>
15. Unit Reserve Shutdown Hours	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,557,861.6</u>	<u>14,680,855.8</u>	<u>29,010,048.6</u>
17. Gross Electrical Energy Generated (MWH)	<u>521,880</u>	<u>4,867,672</u>	<u>9,622,054</u>
18. Net Electrical Energy Generated (MWH)	<u>496,591</u>	<u>4,621,439</u>	<u>9,162,793</u>
19. Unit Service Factor	<u>91.3</u>	<u>79.9</u>	<u>82.7</u>
20. Unit Availability Factor	<u>91.3</u>	<u>79.9</u>	<u>82.7</u>
21. Unit Capacity Factor (Using MDC Net)	<u>85.1</u>	<u>71.2</u>	<u>77.4</u>
22. Unit Capacity Factor (Using DER Net)	<u>81.6</u>	<u>68.2</u>	<u>74.2</u>
23. Unit Forced Outage Rate	<u>1.0</u>	<u>7.6</u>	<u>6.2</u>

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

25. If Shut Down At End Of Report Period, Estimated Date of Startup:

26. Units In Test Status (Prior to Commercial Operation):	Forecast	Achieved
INITIAL CRITICALITY	<u> </u>	<u> </u>
INITIAL ELECTRICITY	<u> </u>	<u> </u>
COMMERCIAL OPERATION	<u> </u>	<u> </u>

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-317

UNIT Calvert Cliffs No.

DATE 12-15-78

COMPLETED BY S.D.Merson

TELEPHONE 301-234-5240

MONTH November, 1978

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>833</u>	17	<u>833</u>
2	<u>811</u>	18	<u>839</u>
3	<u>681</u>	19	<u>714</u>
4	<u>692</u>	20	<u>740</u>
5	<u>788</u>	21	<u>834</u>
6	<u>813</u>	22	<u>838</u>
7	<u>824</u>	23	<u>836</u>
8	<u>808</u>	24	<u>806</u>
9	<u>758</u>	25	<u>773</u>
10	<u>748</u>	26	<u>787</u>
11	<u>741</u>	27	<u>834</u>
12	<u>833</u>	28	<u>833</u>
13	<u>734</u>	29	<u>833</u>
14	<u>788</u>	30	<u>831</u>
15	<u>697</u>	31	<u></u>
16	<u>535</u>		

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-318

UNIT Calvert Cliffs No.

DATE 12-15-78

COMPLETED BY S.D.Merson

TELEPHONE 301-234-5240

MONTH November, 1978

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>454</u>
2	<u>704</u>
3	<u>770</u>
4	<u>710</u>
5	<u>706</u>
6	<u>683</u>
7	<u>786</u>
8	<u>831</u>
9	<u>807</u>
10	<u>730</u>
11	<u>768</u>
12	<u>768</u>
13	<u>773</u>
14	<u>781</u>
15	<u>477</u>
16	<u>719</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>687</u>
18	<u>-</u>
19	<u>-</u>
20	<u>211</u>
21	<u>805</u>
22	<u>849</u>
23	<u>850</u>
24	<u>852</u>
25	<u>845</u>
26	<u>776</u>
27	<u>850</u>
28	<u>852</u>
29	<u>842</u>
30	<u>855</u>
31	<u></u>

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-317
 UNIT NAME Calvert Cliffs No.1
 DATE 12/15/78
 COMPLETED BY S. D. Merson
 TELEPHONE 301-234-5240

REPORT MONTH Nov. 1978

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
78-17	781116	F	3.5	G	3	N/A	ZZ	ZZZZZZ	Forced outage due to an operational error while by-passing the condensate filter system. This resulted in a trip of No. 12 Steam Generator Feed Pump due to low suction pressure. Low steam generator level caused a reactor trip.

¹
 F: Forced
 S: Scheduled

²
 Reason:
 A-Equipment Failure (Explain)
 B-Maintenance or Test
 C-Refueling
 D-Regulatory Restriction
 E-Operator Training & License Examination
 F-Administrative
 G-Operational Error (Explain)
 H-Other (Explain)

³
 Method:
 1-Manual
 2-Manual Scram.
 3-Automatic Scram.
 4-Other (Explain)

⁴
 Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

⁵
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-318
 UNIT NAME Calvert Cliffs No. 2
 DATE 12-15-78
 COMPLETED BY S. D. Merson
 TELEPHONE 301-234-5240

REPORT MONTH Nov. 1978

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
78-19	781115	F	3.5	A	1	LER-039	CB	PIPEXX	Forced outage due to excessive reactor coolant leakage. Plant returned to service after isolating a cracked weld on #21B Reactor Coolant Pump middle seal pressure transmitter sensing line.
78-19	781117	S	56.1	B	1	N/A	ZZ	ZZZZZZ	Scheduled outage in order to repair No. 4 Main Turbine Governor Valve.
78-20	781120	F	3.2	H	4	N/A	ZZ	ZZZZZZ	Forced outage due to late return from previous scheduled outage.

¹
 F: Forced
 S: Scheduled

²
 Reason:
 A-Equipment Failure (Explain)
 B-Maintenance of Test
 C-Refueling
 D-Regulatory Restriction
 E-Operator Training & License Examination
 F-Administrative
 G-Operational Error (Explain)
 H-Other (Explain)

³
 Method:
 1-Manual
 2-Manual Scram.
 3-Automatic Scram.
 4-Other (Explain)

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 Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

⁵
 Exhibit I - Same Source

Updated:
12/12/78

REFUELING INFORMATION REQUEST

1. Name of Facility:
Calvert Cliffs Nuclear Power Plant, Unit No. 1
2. Scheduled date for next Refueling Shutdown:
April 14, 1979
3. Scheduled date for restart following refueling:
May 22, 1979
4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?
Resumption of operation after refueling will require changes to Technical Specifications. The changes will be such as to allow operation of the plant with a fresh reload batch and reshuffled core.
5. Scheduled date(s) for submitting proposed licensing action and supporting information.
February 5, 1979
6. Important licensing considerations associated with refueling.
Reload fuel will be similar to that reload fuel inserted into the previous cycle.
Selected fuel assemblies will be modified by installation of sleeves in the Guide Tubes.
7. The number of fuel assemblies (a) in the core and (b) in the spent fuel storage pool.
(a) 217
(b) 228*
* Spent Fuel Pools are common to Units 1 and 2
8. The present licensed spent fuel pool storage capacity and the size of any increase in licensed storage capacity that has been requested or is planned, in number of fuel assemblies.
1056 Licensed
728 Currently Installed
~~840 Addition is Planned~~ 650 Addition is planned **
9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity.
~~September, 1984~~ / October, 1983 **

** Information which has changed since last monthly report.

Updated:
12/11/78

REFUELING INFORMATION REQUEST

1. Name of Facility
Calvert Cliffs Nuclear Power Plant, Unit No. 2
2. Scheduled date for next Refueling Shutdown:
October 6, 1979 **
3. Scheduled date for restart following refueling:
November 8, 1979
4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?
Resumption of operation after refueling will require changes to Technical Specifications. The changes will be such as to allow operation of the plant with a fresh reload batch and reshuffled core.
5. Scheduled date(s) for submitting proposed licensing action and supporting information.
July 6, 1979 **
6. Important licensing considerations associated with refueling.
Reload fuel will be similar to that reload fuel inserted into the Cycle 3 of Unit 1.
7. The number of fuel assemblies (a) in the core and (b) in the spent fuel storage pool.
(a) 217
(b) 228*
* Spent Fuel Pools are common to Units 1 and 2
8. The present licensed spent fuel pool storage capacity and the size of any increase in licensed storage capacity that has been required or is planned, in number of fuel assemblies.
1056 Licensed
728 Currently Installed
~~840 Addition is planned~~ 650 Addition is planned **
9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity.
~~September 6, 1984~~ October, 1983 **

** Information which has changed since last monthly report.

SUMMARY OF UNIT 1 OPERATING EXPERIENCE - November 1978

- 11/1 At the beginning of this reporting period, Unit 1 was operating at 873 MWe with the reactor at 97% power. Reactor power being limited by the Environmental Technical Specification (ETS) 10°F limit on main condenser circulating water ΔT .
- 11/2 Reduced load to 710 MWe at 2100 to investigate salt water leakage into the main condenser.
- 11/4 Increased load to 843 MWe at 2330 after plugging 2 tubes. Reactor power was limited to 95% by the ETS 10°F limit on main condenser circulating water ΔT .
- 11/5 Reduced load to 700 MWe at 2000 to clean main condenser water boxes.
- 11/6 Increased load to 873 MWe at 0415 reactor power remained limited to 97% by the ETS 10°F limit on main condenser circulating water ΔT .
- 11/8 Reduced load to 700 MWe at 2200 to clean main condenser water boxes.
- 11/9 Increased load to 877 MWe at 0800. Reactor power remained limited to 96% by the ETS 10°F limit on main condenser circulating water ΔT .
Reduced load to 730 MWe at 1645 to investigate salt water leakage into the main condenser.
- 11/10 Increased load to 872 MWe at 0530 after the salt water leak disappeared. Reactor power remained limited to 95% by the ETS 10°F limit on main condenser circulating water ΔT . Reduced load to 725 MWe at 1210 to investigate salt water leakage into the main condenser.
- 11/11 Increased load to 870 MWe at 1345 after plugging one tube. Reactor power was limited to 95% by the ETS 10°F limit on main condenser circulating water ΔT .
- 11/13 Reduced load to 733 MWe at 0600 to investigate salt water leakage into the main condenser.

- 11/14 Increased load to 873 MWe at 1130 after the leak disappeared. Reactor power was limited to 95% by the ETS 10°F limit on main condenser circulating water Δ T.
- 11/15 Reduced load to 730 MWe at 0015 to investigate salt water leakage into the main condenser.
- 11/16 At 0628 while increasing load to capacity after plugging 2 tubes the reactor tripped on low steam generator level after a feed pump tripped on low suction pressure while an operator was attempting to bypass the condensate precoat filter system. The reactor was brought critical at 0825 and the unit paralleled at 0958. Full load operation (863 MWe) resumed at 2000. Reactor power was limited to 95% by the ETS 10°F limit on main condenser circulating water Δ T.
- 11/19 Reduced load to 738 MWe at 0100 to investigate salt water leakage into the main condenser.
- 11/20 Resumed full load operation (877 MWe) at 2015. Reactor power was limited to 98% by the ETS 10°F limit on main condenser circulating water Δ T.
- 11/24 Reduced load to 727 MWe at 1809 to investigate salt water leakage into the the main condenser.
- 11/25 Resumed full load operation (870 MWe) at 1320 after plugging 1 tube. Reactor power remained limited to 95% by the ETS 10°F limit on main condenser circulating water Δ T.
- 11/26 Reduced load at 738 MWe at 0020 to investigate salt water leakage into the main condenser. Full load operation (867 MWe) resumed at 1300 after plugging 1 tube. Reactor power remained limited to 95% by the ETS 10°F limit on main condenser circulating water Δ T.
- 11/30 At the end of the reporting period, Unit 1 was operating at 863 MWe with the reactor at 95% power, power being limited by the ETS 10°F limit on main condenser circulating water Δ T.

SUMMARY OF UNIT 2 OPERATING EXPERIENCE - November 1978

- 11/1 At the beginning of this reporting period Unit 2 was operating at 412 MWe with the reactor at 50% power while performing cycle two escalation to power physics testing.
- At 0900 began increasing load to 100% power physics plateau.
- 11/2 At 1600 stopped power increase with the unit operating at 818 MWe. Reactor power limited to 95% by the Technical Specification (TS) limitations on Unrodded Planar Radial Peaking Factor (F_{xy}^T) and Unrodded Integrated Radial Peaking Factor (F_r^T).
- 11/3 Reduced load to 716 MWe at 2150 to main clean condenser water boxes.
- 11/4 Continued reduced power operation after discovering a salt water leak at 0730. Resumed full load operation (862 MWe) at 2100. Reactor power was limited to 97% by the TS limit on F_{xy}^T and F_r^T .
- 11/5 Reduced load to 715 MWe at 0405 to investigate salt water leakage into the main condenser.
- 11/7 Full load operation (865 MWe) resumed at 0850 after plugging 1 tube. Reactor power was limited to 95% by the TS limit on F_{xy}^T and F_r^T .
- 11/9 Reduced load to 730 MWe to main clean condenser water boxes.
- 11/10 Began increasing load to capacity. Stopped load increase at 840 MWe at 1436 when main turbine number four governor valve stem became disconnected from its operator.
- Load was reduced to 810 MWe at 1530 in order to shut main turbine number four governor valve.
- 11/15 The unit was taken off line at 1400 in order to locate the source of reactor coolant system leakage in excess of Technical Specification limits. The reactor was maintained critical. The unit was paralleled at 1724, after isolating a cracked weld on 21B reactor coolant pump

middle seal pressure transmitter sensing line. Increased load to 807 MWe. Reactor power was limited to 89% by the TS limit on F_{xy}^T and F_r^T .

11/17 Increased power to 836 MWe at 1800, maximum obtainable with main turbine number four governor valve shut.

At 2327 while shutting the unit down for repairs to main turbine number four governor valve the reactor tripped on loss of load due to 22A feed water heater high level.

11/20 The reactor was brought critical at 0748 and the unit paralleled at 1110.

11/21 Increased load to maximum capacity (900 MWe). Reactor power was limited to 98% by the Environmental Technical Specification (ETS) 10°F limit on main condenser circulating water ΔT .

11/25 Reduced load to 713 MWe at 2215 to clean main condenser water boxes.

11/26 Full load operation (890 MWe) resumed at 0815. Reactor power was limited to 98% by the ETS 10°F limit on main condenser circulating water ΔT .

At 1219 control element assembly (CEA) 3 drop into the core. Reactor power was immediately reduce to 70% in accordance with Technical Specifications. CEA 3 was withdrawn back to the group at 1450. Full load operation(893 MWe) resumed at 1910. Reactor power remained limited to 98% by the ETS 10°F limit on main condenser circulating water ΔT .

11/30 At the end of this reporting period Unit 2 was performing cycle 2 escalation to power physics testing. Unit 2 was operating at 890 MWe with reactor power limited to 98% by the ETS 10°F limit on main condenser circulating water ΔT .

SAFETY-RELATED MAINTENANCE

UNIT I
 GROUP INSTRUMENT & CONTROL
 MONTH NOVEMBER YEAR 1978

SYSTEM OR COMPONENT	MR NO. - DATE	MALFUNCTION		CORRECTIVE ACTION
		CAUSE	RESULT	
Safety Injection Tank 12A Vent Valve 1-SV-633	IC-78-46 2/16/78	Solenoid valve coil shorted	1-SV-633 would not open	Replaced solenoid valve coil
ESFAS Channel ZF 12 SGIS (Steam Gen. Isol. Signal)	0-78-2515 8/3/78	Isolation module is defective	Received a trip signal on B-logic 12 SGIS	Replaced defective module
ESFAS Sensor Channel ZD	IC-78-101 4/17/78	+15 VDC power supply output is zero volts	Loss of +15 volt D.C. on sensor channel ZD	Replaced power supply
Diesel Cooler #11 Service Water Inlet Valve 1-SV-1587	0-78-1953 6/15/78	1-SV-1587 defective	1-CV-1587 went closed restricting flow of cooling water	Replaced solenoid valve
Diesel Cooler #12 Service Water Inlet Valve 1-SV-1588	0-78-1954 6/15/78	1-SV-1588 defective	1-CV-1588 went closed restricting flow of cooling water	Replaced solenoid valve

SAFETY-RELATED MAINTENANCE

UNIT I & IIGROUP ELECTRICALMONTH NOVEMBER YEAR 1978

SYSTEM OR COMPONENT	MR NO. - DATE	MAJ FUNCTION		CORRECTIVE ACTION
		CAUSE	RESULT	
High Pressure Loader 1-SV-9669	0-78-3444 10/30/78	12 MSIV loader solenoid 1-SV-9669 coil shorted	12 MSIV will not partial stroke within specified time	Replaced solenoid valve coil
4KV Bus 21 Under Voltage Relay 127/B-21-E	E-78-199 10/26/78	Under voltage relay shorted	Bus 21 under voltage trip on channel ZD of Engineered Safety Features Actuation System	Replaced under voltage relay
21 Battery Charger	E-78-085 4/18/78	Charger output causing electrical interference	Electrical interference on reactor protective system and Unit one annunciation	Replaced SCR and insulated heat sink from ground

SAFETY-RELATED MAINTENANCE

UNIT I & IIGROUP MECHANICAL MAINTENANCEMONTH OCTOBER YEAR 1978

SYSTEM OR COMPONENT	MR NO. - DATE	MALFUNCTION		CORRECTIVE ACTION
		CAUSE	RESULT	
#22 MSIV 2-SV-4048	0-78-1243 11/19/78	2-SV-4048 would not stroke w/coil energized	MSIV would not partial stroke	Rebuilt solenoid valve block
#22 MSIV #2 High Pressure Pump	0-78-2247 11/18/78	Pump would not develop adequate discharge pressure	Pump ran continuously, would not shut off in "AUTO"-mode.	Rebuilt pump and discharge relief valve
Unit II Containment Personnel Airlock (Inner Door)	M-78-2283 7/26/78	Broken cam follower on door operating mechanism	Door inoperable	Replaced cam follower, performed necessary operator adjustments.
#22 Containment Cooler	0-78-2302 7/19/78	Upper bearing failure (Fan)	Fan unbalanced, noise, severe wear of bearing housing	Replaced/repared bearing/housing, balanced fan blades

SAFETY-RELATED MAINTENANCE

UNIT IIGROUP INSTRUMENT & CONTROLMONTH NOVEMBER YEAR 1978

SYSTEM OR COMPONENT	MR NO. - DATE	MALFUNCTION		CORRECTIVE ACTION
		CAUSE	RESULT	
Reactor Coolant Loop 21A Cold Leg Temp. 2-TE-112CA and Reactor Coolant Loop 22A Cold Leg Temp. 2-TE-122CA	0-78-2509 8/2/78	Defective RTD's 2-TE-112CA and 2-TE-122CA	Channel A T _c (Temperature cold leg) indication is not responsive to changes	Replaced RTD's 2-TE-112CA and 2-TE-122CA
Reactor Coolant Loop 21B Flow Transmitter 2-PDT-111B	2-IC-78-134 9/23/78	Output of transmitter is erratic and out of tolerance. Due to electronic failure	Output of transmitter was both erratic and out of tolerance during STP.	Replaced transmitter

SAFETY-RELATED MAINTENANCE

UNIT II
 GROUP INSTRUMENT & CONTROL
 MONTH NOVEMBER YEAR 1978

SYSTEM OR COMPONENT	MR NO. - DATE	MALFUNCTION		CORRECTIVE ACTION
		CAUSE	RESULT	
Nuclear Instrumentation Wide Range Channel L-A (2-NE-001) Proportional Counters	2-IC-78-153 10/19/78	Proportional counters are not responsive	Failed plateau test procedure	Replaced proportional counters
ESFAS 21 Steam Generator Pressure Channel ZG Isolation Module 2-E/E-1013D	0-76-5074 12/18/76	Defective isolation module	Output voltage is not within specified limit	Replaced isolation module
ESFAS Channel ZD Bus 21 Under Voltage Module	0-78-3351 10/23/78	Defective under voltage module	Module tripped and will not reset	Replaced under voltage module
Nuclear Instrumentation Incore Detectors	2-IC-77-109 5/17/78	Incore detectors are defective	Fifteen of forty five incore detectors have low resistance readings	Replaced fifteen incore detectors

SAFETY-RELATED MAINTENANCE

UNIT II
 GROUP INSTRUMENT & CONTROL
 MONTH NOVEMBER YEAR 1978

SYSTEM OR COMPONENT	MR NO. - DATE	MALFUNCTION		CORRECTIVE ACTION
		CAUSE	RESULT	
22 Heat Exchanger Salt Water Outlet 2-CV-5212	0-78-2362 7/20/78	Defective Bailey controller pilot valve	Valve failed to open within specified time during STP	Replaced Bailey controller pilot valve
Nuclear Instrumentation 2-NI-002 Power Supply	2-IC-78-129 9/21/78	Defective 15V D.C. power supply	Supply voltage -15 volt D.C. found to be lower than specified limits during STP	Replaced power supply
#21 Containment Spray Header Charcoal Filter Isolation Valve 2-SI-4159	0-78-2944 9/17/78	Solenoid valve stuck open	Unable to open 2-CV-4159	Repaired solenoid valve
Nuclear Instrumentation Wide Range Channel D (2-NI-004)	2-IC-78-123 9/8/78	Discriminator board has low output	Channel D not respond- ing to changes in calibrate signal level	replaced dis- criminator board
Pressurizer Pressure Transmitter 2-PT-100Y	0-78-3359 10/23/78	Defective oscillator module	Pressurizer pressure indication went to zero	Replaced oscillator