ANNUAL OPERATING REPORT

OF

Dresden Nuclear Power Station, Commonwealth Edison Company

For 1976

UNIT NO.	DOCKET NO.	LICENSE NO.
1	050-010	DPR-2
2	050-237	DPR-19
3	050-249	DPR-25

R

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

UNIT 1

INTRODUCTION

Dresden 1 has a dual cycle boiling water reactor, owned by the Commonwealth Edison Company and located on a 953 acre site in Goose Lake Township, Grundy County, Illinois. The net maximum dependable capacities are 197 MWe during the summer and 207 MWe during the winter. The manufacturer of the nuclear steam supply system was General Electric Company; the architect/engineer as well as the constructor was the Bechtel Corporation. The unit has a "once through" condenser cooling method, with the Kankakee River as the water source for condenser cooling. Dresden 1 is subject to Facility License No. DPR-2, issued October 14, 1960, persuant to Docket Number 50-10. The date of initial reactor criticality was October, 1959, and commercial generation of power began July 4, 1960.

UNIT 1

HIGHLIGHTS

Dresden Unit 1 entered the 1976 reporting period shutdown because of a crack in the six inch unloader heat exchanger return to reactor vessel line. The unit was placed on line Jan. 25, 1976.

The unit operated with no significant events occuring until June when the existing G.E. corrosion test loop was used by Commonwealth Edison Co. and Dow Industrial Service as a prototype test loop for the planned Unit 1 decontamination. This test consisted of filling the test loop with a Dow formulated cleaning solvent and circulating the solvent through the loop for 100 hours. The results of the test are being evaluated by Commonwealth Edison Co., Dow, and G.E.

The Unit operated almost continuously through the summer months until it was taken off line Sept. 1st. in an attempt to tie-in the new off-gas system. It was returned to the system on Sept. 10th. and finished the year with an availibity of 84.2% and a net capacity factor of 55.1.

SUMMARY OF OPERATING EXPERIENCE

UNIT 1

The following is a chronological description of Unit 1 operations including other pertinent items of interest for the twelve month period ending 12-31-76.

1-1 Unit one entered the reporting period with the reactor locked in the shutdown mode in a continuation of a refueling outage which had begun in September, 1975.

1-24 The reactor mode switch was placed in startup and the reactor reached criticality at 0525 on the 25th. At 0752 the reactor mode switch was placed in refuel due to excessive leakage found on primary steam valve MO 170. The unit was made critical again at 1424 and again brought down on 1-26 at 0625 for further repair of MO 170.

1-27 The unit was made critical at 2138, placed on system at 0708, but scrammed at 0930 as a result of a leak in the condensate minimum flow valve. The reactor was made critical again at 2235 for fuel preconditioning.

1-28 The unit was on line at a steady state load of 100 MWe.

2-11 The unit was taken off system at 0019 for C and D SSG repairs.

2-12 The unit went on system at 2200 hours with a load of 100 MWe.

2-17 The unit was taken off line at 2135 for repair of "E" extraction line.

2-20 The unit was put back on system at 1410 with a load of 100 MWe.

2-21 Unit 1 was taken off line at 2030 to repair broken linkage on MO 101 (050-010/1976-4)

2-23 Unit 1 was synchronized to the system at 0415 at 100 MWe and load was increased to approximately 135-150 MWe.

3-15 A Hi Incore Flux reading scrammed the unit at 1338.

3-16 The unit was placed on line at 0542 hours and brought to approximately 160 MWe.

4-13 The unit was taken off the system at 2136 for a maintenance outage.

4-16 The maintenance outage ended at 1057 and load was increased to 105 MWe. Load was gradually increased to a maximum of 110 MWe.

6-20 The unit was brought on line at 0340 hours and load was increased to 100 MWe and brought up gradually to 175 MWe until 8-28.

8-28 The unit was taken off system at 2229 in preparation for the new off gas system tie-in and a maintenance outage.

9-10 The reactor reached criticality at 0920 hours and remained that way until 9-11 at 0025 hours when a scram occurred due to high pressure.

9-11 The unit was again brought critical at 0200 hours and tied to the system at 1328. A Turbine Overspeed Test was conducted at 1719 and the unit was returned to the system at 1804 hours and gradually brought up to maximum load of 160 MWe with load fluctuating according to system demand and fuel conservation.

11-3 The unit was taken off system at 2254 hours due to decreasing condensor vacuum which was traced to a small crack in a pipe leading to the condensor.

11-6 The unit went back on line at 1050 hours and load was increased to a maximum of 150 MWe, with the unit normally at approximately 80 MWe.

12-11 At 0647 the unit was taken off line in an unsuccessful attempt to tie-in the new off gas system. The unit was placed back on line at 2028 hours with a loading of approximately 85 MWe.

12-31 At 1255 the reactor scrammed due to Low Steam Drum Water Level caused by the tripping of "C" reactor feed pump. The unit was placed back on line at 2322 hours.

AMENDMENTS TO FACILITY LICENSE

DPR-2 (UNIT 1) OR ASSOCIATED

TECHNICAL SPECIFICATIONS

AMENDMENT #13

On January 23, 1976, the Nuclear Regulatory Commission issued Amendment #13 to the Dresden Facility License No. DPR-2. The following is a list of the changes in the Technical Specifications for the incorporation of this amendment.

1) Revision of Section 3.6.F Structural Integrity. Revised to require inservice inspection of the primary system boundary per Table 4.6.1 of this specification and the 1971 Edition of ASME Section XI including the Summer 1971 Addenda and to permit the evaluation of flaws in excess of the acceptance standards of that Edition and Addenda in accordance with the techniques of the 1974 version.

AMENDMENT #14

On February 25, 1976, the Nuclear Regulatory Commission issued Amendment #14 to the Dresden Facility License No. DPR-2. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revised page 1 of the Dresden Facility License No. DPR-2.

2) Revised Section 1.0.BB Surveillance Interval.

3) Revised Sections 3.8.3.C and 3.8.4. Radioactive Materials.

4) Revised Table 6.6.1. section 1 and note 5 Special Reports.

AMENDMENT #10

On March 31, 1976, the Nuclear Regulatory Commission issued a correction to Amendment #10 of the Dresden Facility License No. DPR-2. The following is a list of the changes in the Facility License per the incorporation of this amendment.

1) Revision of Section 2.B.5 changed the amount of curies of antimony 122-124 from 17500 to 3775 curies.

AMENDMENT #15

On March 25, 1976, the Nuclear Regulatory Commission issued Amendment #15 to the Dresden Facility License No. DPR-2. The following is a list of the changes in the Facility License and the Technical Specifications per the incorporation of this amendment.

1) Added Section 3.11 High Energy Piping Integrity (Outside Containment). The Amendment incorporates increased surveillance requirements in the Technical specifications to provide additional assurance that a high energy line failure outside of containment will not occur during the short period of time the facility will be operated prior to completing certain modifications to assure that the facility can withstand the consequences of postulated ruptures in the high energy piping outside of containment.

AMENDMENT #16 and #17

On August 9, 1976, the Nuclear Regulatory Commission issued Amendment #16 and #17 to the Dresden Facility License No. DPR-2. The following is a list of the changes in the Facility License and the Technical Specifications per the incorporation of the amendment.

Amendment #16

1) Added Sections 3.6.G (Limiting Condition for Operation) and 4.6.G (Surveillance Requirement) Shock Suppressors (Snubbers).

2) Added Table 3.6.1 Safety Related Shock Suppressors (Snubbers). The license amendment revised Technical Specifications for the facility to req ire limiting conditions for operation and surveillance requirements for safety-related shock suppressors.

Amendment #17

1) Revised Section 3.7.A. Primary Containment. This amendment consists of changes to the Technical Specifications regarding the requirements for primary containment integrity.

AMENDMENT #18

On September 3, 1976, the Nuclear Regulatory Commission issued Amendment #18 to the Dresden Facility License No. DPR-2. The following is a list of the changes in the Facility License and the Technical Specifications.

AMENDMENT #18 (Continued)

1) Changed Section 2.B.2, 3, 4, 5, 6 of the Facility Operating License.

2) Revised Section 3.8 of the Table of Contents of the Technical Specifications.

3) Changed Section 3.8.G. Miscellaneous Radioactive Materials Sources.

4) Changed the Bases for Sections 3.8 and 4.7.

5) Changed Section 6.5.A10 and 6.5.B4 of the Technical Specifications.

6) Changed Table 6.6.1 area 1 and note 5 of the Technical Specifications.

These amendments: (1) revised those portions of the license and the appended Technical Specifications for the facilities relating to the receipt, possession and use of byproduct, source and special nuclear materials to delete reference to these materials by quantitative limits (except plutonium fuel), and (2) raised the license limit for plutonium for Dresden Station Unit No. 1 to resolve a discrepancy between the amount of plutonium received, possessed and used pursuant to Change 18 to the Technical Specifications and Amendment No. 8 to License No. DPR-2.

UNIT 1

FACILITY OR PROCEDURE CHANGES REQUIRING NRC APPROVAL

There were no facility or procedure changes during the report year that required prior approval by the Nuclear Regulatory Commission.

UNIT 1

TESTS AND EXPERIMENTS REQUIRING NRC APPROVAL

There were no tests or experiments during the report year that required prior approval by the Nuclear Regulatory Commission.

UNIT 1

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION NO. M-12-1-74-1

Addition Of An Air Operated Minimum Flow Valve In
The Minimum Flow Line From Each Pump

This change involved the addition of the above mentioned valves to eliminate flow when the pumps are not running thereby reducing line erosion and eliminating unnecessary use of service water. Since the valves are designed to fail open on loss of air or loss of electrical feed they do not alter system operation as defined by the Technical Specifications.

The safety evaluation concluded that due to the fail safe design of the valves, the basic core spray system functions are unchanged and system operation was not altered.

MODIFICATION NO. M-12-1-74-6 (Rev. 1)

Cutting And Sealing Of A 2" Spare Decon Line

This modification involved the cutting and seal welding of a 2" spare line which was used for decontamination purposes. The line is not addressed in the FSAR.

The safety evaluation concluded that the sealing of this line would lessen potential leakage, thereby providing one less leakage path out of the sphere.

MODIFICATION NO. M-12-1-74-8

Modification To The Iodine And
Particulate Sampling Line

The modification involves a change in the Iodine and Particulate sampling line to allow for the removal of the loop in the flexible hose and the replacement of the existing filter holder with larger inlet and outlet connections to increase the flow through the filter. The increased flow will enhance the performance of the sampling unit and improve the quality of the samples.

The safety evaluation concluded that the sampler monitors, the release of iodine and particulates to the environment and improves the quality of the samples and this modification should actually increase the margin of safety. The system will function in the same manner as it did previously.

MODIFICATION NO. M-12-1-75-34

Change Wiring On Current Transformer
To Read When Pump Is Fed From
Either MCC 6A-2 or 5A-2

This modification involved the moving of the current transformer on BØ of the line side of the breaker on MCC 5A-2 for core spray pump 1C to the BØ of the motor lead. This would allow the pump amperage to be indicated when core spray pump 1C is being fed from either MCC 5A-2 or MCC 6A-2.

The safety evaluation concluded that this modification does not change the basic core spray pump operation and pump reliability has been increased by allowing surveillance and monitoring of the amperage draw either from MCC 6A-2 or MCC 5A-2.

MODIFICATION NO. M-12-1-75-61

Replacement Of Two Poison Tank Vent Valves

This modification involved the replacement of two valves on the 1/2" vent line, between the High and Low pressure poison tanks. The valves were part of the original plant and were in need of replacement and the modification did not change the function or safety of the poison system.

The safety evaluation concluded that the new valves would not change the operation or design of the poison system and must meet the same acceptance criteria as the originals.

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Unit 1 Sphere Personnel Lock Inside Door	Corrective WR-12659	Outage #1-11 of 1975	Maladjusted Hinges	Door Would Sag and Bind	Hinges adjusted and air tested door
Unit 1 Main Steam Drum South Inboard Vent Valve MO77	Preventive WR-4352		N.A.	N.A.	Inspected and repacked
Primary System Piping	Preventive WR-9188		N.A.	N.A.	Welds ground
Steam Drum Safety Valve No. 5	Preventive WR-10843	Outage #1-11 of 1975	N.A.	N.A.	Valve inspected. New gasket installed
Safety Valve BA 7918	Preventive WR-11385		N.A.	N.A.	Disassembled, cleaned, rebuilt, and tested
Steam Drum Safety Valves #3,#4,#7,#8,&#9	Preventive WR-11959	Outage #1-11 of 1975	N.A.	N.A.	Ground out indications and blended area
Fuel Grapple	Corrective WR-12196		Loose Fitting At Hose End	Air Leak	Tighten Packing
MSL Isolation MO-170	Corrective WR-12230		Binding of Bearings	Valve Would Not Operate	Mechanical Work Order #12305 Issued
MSL Isolation MO-170	Corrective WR-12305		Binding of Bearings	Valve Would Not Operate	Bored .015 Inches out of valve extension bearings
MSL Isolation Valve MO 169	Preventive WR-12462	Outage #1-11 of 1975	N.A.	N.A.	Realigned shaft extensions

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Reactor Turning Vane & Reactor Head	Preventive WR-25	Outage #1-11 of 1975	N.A.	N.A.	Installed reactor head
Steam Drum Safety Valve #1	Preventive WR-28	Outage #1-11 of 1975	N.A.	N.A.	Ground out penetrant indication
Steam Drum Safe End #1	Preventive WR-183	Outage #1-11 of 1975	N.A.	N.A.	Weld of repair defect cavity
MSL Isol. Valve MO-169	Corrective WR-273	Outage #1-11 of 1975	Binding Bushing	Valve Would Not Close	Bored out bushings
MSL Isol. Valve MO-170	Preventive WR-489	Outage #1-11 of 1975	N.A.	N.A.	Repositioned key on shaft
"C" SSG	Corrective WR-698	Outage #1-4	Tube Leak	Inside Shell Pres. Increased	Leaks repaired
MO 170	Corrective WR-717	Outage #1-11 of 1975	Faulty Seal Ring	Bonnet Leak	Installed new pressure seal ring
CRD Accumulator #2	Corrective WR-871		Faulty Flange Rings	Water Leak	Installed new rings
CRD Accumulator #2	Corrective WR-872	Outage #1-2	Faulty O-Ring Gasket	Air Leak	Installed new O-ring and replaced spark plug
D Recirc. Pump	Preventive WR-1559		N.A.	N.A.	Replaced gasket from pump to pump bowl
C Recirc. Pump	Corrective WR-2978	Outage #1-8	Faulty Gasket	Flange Leak	New gasket installed
uua meter #5	Corrective WR-6072		Over Heating	1/2 Scram	Cooling fan installed

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
"C" SSG Recirc. Pump	Corrective WR-6505		Loose Bolts	Steam Leak At Pump Flange	Tightened bolts
Primary Steam Line Sphere Isolation Valves	Preventive WR-7219	Outage #1-10	N.A.	N.A.	Repack Valve MO-168
Safety Valve SS 9706	Preventive WR-11388		N.A.	N.A.	Rebuilt valve
CRD #1250	Preventive WR-9336		N.A.	N.A.	Drive overhauled
CRD #1280	Preventive WR-9337		N.A.	N.A.	Drive overhauled
Control Rod Drives	Preventive WR-10128		N.A.	N.A.	16 CRDs removed and replaced
Control Rod Drives	Preventive WR-10129		N.A.	N.A.	13 CRDs overhauled and tested
CRD Accumulator #8	Corrective WR-10173		Faulty Accumulator Cylinders	Gross Leakage	New cylinders installed
CRD Accumulator #22	Corrective WR-10174		Faulty Accumulator	Gross Leakage	Accumulators changed
CRD Accumulator	Preventive WR-11638	Outage #1-11 of 1975	N.A.	N.A.	Accumulators rebuilt
CRD Accumulator #2 Top Vent Valve	Corrective WR-11872	Outage #1-11 of 1975	Worn Disc	Leak	Installed new disc
CRD Accumulator #14 Top Vent Valve	Corrective WR-11875	Outage #1-11 of 1975	Worn Disc	Leak	Installed new disc

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD B-2	Corrective WR-11950		Worn O-Rings	Flange Leak	Replaced O-rings
Scram Dump Tank Normal Low Level Alarm	Corrective WR-12227		Switch Loose from Pivot	Indicator Light Would Not Function	Adjusted Pivots
CRD G-3	Corrective WR-12593		Worn O-Rings	Drive Would Not Move	Disassembled and inspected, then reassembled & tested
CRD Accumulator Cylinders SN C 2772 A	Preventive WR-444	Outage #1-11 of 1975	N.A.	N.A.	Cylinders overhauled
CRD Accumulator Cylinders SN C2772 B	Preventive WR-450		N.A.	N.A.	Cylinders overhauled
CRD B-8	Corrective WR-731	Outage #1-11 of 1975	Loose Bolts	Flange Leak	Pulled up on bolts
CRD J-4	Corrective WR-733	Outage #1-11 of 1975	Loose Bolts	Flange Leak	Pulled up on bolts
CRD Rod Block	Preventive WR-775	Outage #1-11 of 1975	N.A.	N.A.	Pressure switch reset to normal setting
CRD Accumulator #2	Corrective WR-972		Faulty Mercoid Switch	Water Leak	New mercoid switch installed
CRD Accumulator SN C 2752 A	Preventive WR-1013		N.A.	N.A.	Accumulator rebuilt
CRD Accumulator SN C 2752 B	Preventive WR-1014		N.A.	N.A.	Accumulator rebuilt
CRD G-8 Scram Insert Header Check Valve	Corrective WR-1240		Plastic In Valve	Valve Leak	Removed plastic

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator #14	Corrective WR-3406	Outage #1-9	Worn Disc	Valve Leak	Disc installed valve cleaned
CRD Accumulator #14	Corrective WR-3442	Outage #1-8	Faulty Coupling	Scram Inlet Leak	Coupling repaired and stroke lengthened
Control Rod Position Indication	Corrective WR-4316		Faulty Amplifier	Erroneous Indication	Amplifier replaced
CRD Accumulator #18 Vent & Drain Valves	Corrective WR-4969		Faulty Valve	Leak	Additional valve added
CRD Accumulator #19 Vent & Drain Valve	Corrective WR-4970		Faulty Valve	Leak	Additional valve added
CRD Accumulator #14 Vent & Drain Valve	Corrective WR-4971		Faulty Valve	Leak	Additional valve installed
CRD H-7 Inlet & Outlet Check Valves	Preventive WR-5189		N.A.	N.A.	Inspected drive check valves. Found them satisfactory
CRD Accumulator #10	Corrective WR-5285		Loose Fitting	Air Leak	Tightened fitting
CRD Accumulator #19 Vent Valve	Corrective WR-5627		Faulty Valve	Water Leak	Additional valve installed
CRD Accumulator #18 Vent Valve	Corrective WR-5628		Faulty Valve	Water Leak	Additional valve installed
CRD Accumulator #14 Vent Valve	Corrective WR-5629		Faulty Valve	Water Leak	Additional valve installed

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD G-3 Position Control Valve - Inlet	Preventive WR-5796	Outage #1-10	N.A.	N.A.	Valve disassembled inspected & returned to service
CRD H-7 Position Control Valve - Inlet	Preventive WR-5797	Outage #1-10	N.A.	N.A.	Valve disassembled inspected & returned to service
CRD Accumulator #2	Corrective WR-7063		Dirty High Level Sensor	Erroneous High Water Alarms	Sensor was cleaned
CRD Accumulator #10 Low Pressure Alarm	Corrective WR-7143	Outage #1-10	Missetting of Press. Switches	Alarm did not Initiate During Scram	Switches reset
CRD Accumulator #15 Outlet Valve Alarm	Corrective WR-7144	Outage #1-10	Limit Switch Misadjusted	Alarm did not Initiate During Scram	Switch reset
CRD Accumulator #20	Corrective WR-7507		Faulty Accumulator	Two Way Leak Past Pistons	Changed out #20 accumulator
CRD Accumulator #10	Corrective WR-7518		Need of Sealant	Unable to Hold Charge	Applied sealant where needed
CRD Accumulator SN. C 2770 B	Preventive WR-7598		N.A.	N.A.	New accumulator installed
CRD Accumulator SN. C 2770 A	Preventive WR-7599		N.A.	N.A.	Accumulator rebuilt
CRD Accumulator #20	Corrective WR-7613		Faulty Accumulator	Leaks & False Alarms	Accumulator replaced

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator SN 2772 B	Preventive WR-7638		N.A.	N.A.	Accumulator rebuilt
CRD Accumulator	Preventive WR-7639		N.A.	N.A.	Accumulator rebuilt
Accumulator #10	Corrective WR-7668		Worn Charging Valve Seat & Disc	Air Leak & Alarms	Replaced seat and disc
Channel 4 uu Ammeter	Corrective WR-7706		Failing Tubes Unbalanced Electrometers	Ammeter Generating Half Scrams	Replaced tubes, balanced electrometers
CRD Accumulator #20	Corrective WR-7755		Faulty Cylinder	Excessive Water On Air Side	Cylinders replaced
CRD Accumulator #19	Corrective WR-7824		Faulty Accumulator	High Water	Replaced with rebuilt accumulator
CRD Accumulator SN C 2752 A	Preventive WR-7852		N.A.	N.A.	Overhauled accumulator
CRD Accumulator SN C 2752 B	Preventive WR-7853		N.A.	N.A.	Overhauled accumulator
CRD Accumulator #10	Corrective WR-8170		Worn Valve Seat & Disc	Air Leak In Charging Valves	Installed new seat & disc
CRD Accumulator #17	Corrective WR-9376		Faulty Accumulator	High Water Alarm Would Not Clear	Installed new accumulator
CRD Accumulator #17	Corrective WR-9676		Worn Gasket	Air Leak	Installed new gasket
CRD Accumulator SN C 2767 B	Preventive WR-9745		N.A.	N.A.	Accumulator overhauled

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator SN C 2767 A	Preventive WR-9746		N.A.	N.A.	Accumulator overhauled
CRD Accumulator SN C 2772 A	Preventive WR-9747		N.A.	N.A.	Accumulator overhauled
CRD Accumulator SN C 2752 A	Preventive WR-9748		N.A.	N.A.	Accumulator overhauled
CRD Accumulator SN C 2781 A	Preventive WR-9749		N.A.	N.A.	Accumulator overhauled
RPS Relay 3K22	Corrective WR-12778	Outage #1-11 of 1975	Contact Out of Adjustment	Contacts Open When Relay Is De-energized	Contacts readjusted
Channel 4 uu A Meter	Corrective WR-5123		Faulty Zener Diode	Half Scram Inititated	Diode replaced
Channel #1 uu A Meter	Corrective WR-9809		Faulty Tube	Spurious Trip	Replaced tube
Channel #1 uu A Meter	Corrective WR-10489		Faulty Tube	No Meter Response	Tube replaced
Spare uu A Meter	Corrective WR-10976		Bad Solder Joint and Bad Tube	Meter Malfunction	Tube replaced bad joint soldered
Channel #5 uu A Meter	Preventive WR-11065		N.A.	N.A.	Unit calibrated
Channel #3 uu A Meter	Corrective WR-11677		Heat Failure of Resistor	Low Readings	Part Replaced

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Start Up Channel #8	Corrective WR-12228		Faulty Tubes	Meter Malfunction	Tubes replaced
Channel X5 and X2	Corrective WR-12302		Bad Chamber In X5 Dunker	No Response When Jugged	New chamber installed
Channel 5 uu A Meter	Corrective WR-12330		Wet Connections	Power Supply Failed	Installed new power supply
Channel 3 uu A Meter	Corrective WR-12333		Shorted Cable	Failure of Meter	Cable repaired
Channel 9 uu A Meter	Corrective WR-12334		Shorted Cable	Failure of Power Supply	Cable and power supply repaired
Fuel Loading Chamber X9	Corrective WR-12370		Shorted Cable	Erratic Channel	Repaired dual H.V.P.S.
Incore Logic RPS-1-709	Corrective WR-12652		Dirty Contacts	Trip Actuators Did Not Trip Properly	Cleaned contacts
Channel #5 uu A Meter	Corrective WR-700	Outage #1-1	Faulty Tubes	Improper Supply Voltage	Replaced power supply
Incore 115-D	Preventive WR-797	Outage #1-2	N.A.	N.A.	Switch calibrated
Channel #5 uu A Meter	Corrective WR-975		Misadjusted Recorder	Low Readings	Recorder adjusted
Incore Strings	Preventive WR-1557		N.A.	N.A.	14 Incore strings replaced
Channel #5 Neutron Monitoring Channel	Corrective WR-1629	Outage #1-5	Faulty Detector	Low Control Room Read Out	New detector installed

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Flux Amplifier 1G1B	Corrective WR-1936		Dirty Range Switch	Erratic Indication	Cleaned switch
Incore Amp 113-A	Corrective WR-1994		Range Switch On Wrong Setting	Could Not Zero Meter Properly	Reset range switch
Channel #4 uu A Meter	Corrective WR-2361		Out of calibration	Spurious Trips	Calibration
Incore Recorder C Level	Corrective WR-2439		Worn Contact Arm	High Readings	Replaced contact arm
Incore Gauges	Preventive WR-2548	Outage #1-8	N.A.	N.A.	Adjusted meters
Incore 113-A	Corrective WR-2710		Pot Out of Calibration	Full Scale Readings	Recalibrated Pot
Channel #3 uu A Meter	Corrective WR-3477		Undetermined	Spurious Trip Signals	Tested functional
Channel #5 uu A Meter	Corrective WR-3763		Faulty Resistor and Diode	Received Half Scram	Diode and resistor replaced
Channel #3 uu A Meter	Corrective WR-4208		Undetermined	Spurious Trip	Tested functional
Channel #7	Preventive WR-4369		N.A.	N.A.	Calibration
Channel #8	Corrective WR-4712		Malfunction In Power Supply	Full Scale Indications	Faulty parts replaced
Channel #9	Corrective WR-5060		Undetermined	Relay Chatter	Tested functional
Incore 105-B	Corrective WR-5153		Out of Calibration	Drift	Recalibrated

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Incore 104-C	Corrective WR-5353		Out of Calibration	Low Readings	Recalibrated
Channel #4 uu A Meter	Corrective WR-5457		Faulty Zener Diode	Low Readings	Replaced Diode
Channel #4 uu A Meter	Corrective WR-5643		Bad Meter	Low Readings	Exchanged with spare
Incore 105-C	Corrective WR-5757		Out of Calibration	Drift	Recalibration of flux amplifier
Channel #5 uu A Meter	Corrective WR-5909		Bad Tubes	Indicator Failed Upscale & Downscale	Replaced tubes
Channel #4 uu A Meter	Corrective WR-5963		Faulty Power Supply	Supply Voltage Is Too High	Replaced with spare
Channel #6 uu A Meter	Corrective WR-6054		Undetermined	Meter Failed To Reset	Tested functional
Incore 110-C	Corrective WR-6419		Out Of Calibration	Drift	Recalibrated
Channel #5 uu A Meter	Corrective WR-6469		Bad Tubes	Low Readings	Replaced tubes
Channel #10 uu A Meter	Corrective WR-6696	Outage #1-12	Bad Voltage Regulator	Erratic Readings	Replaced voltage regulator
Channel #2 uu A Meter	Corrective WR-6774		Bad Tubes	Erratic Read Out	Replaced tubes

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Channel #5 uu A Meter	Corrective WR-6925		Bad Tubes	Low Readings	Replaced tubes
Channel #5 & #1 uu A Meter	Corrective WR-7169	Outage #1-10	Dirty Contacts Bad Tubes	Low Supply Voltage	Cleaned contacts replaced tubes
Channel #9 uu A Meter	Corrective WR-7601		Faulty Tube Socket	Low Readings Will Not Respond In Calibrate Position	Installed new socket
Channel #8 uu A Meter	Corrective WR-7653		Bad Tube	Erratic Readings	Replaced tube
Channel #6 uu A Meter	Corrective WR-7775		Bad Tubes	Spurious Trip	Replaced tubes
SRM Channel #8	Corrective WR-7838		Bad Tube	Erratic Read Out	Replaced tube
Incore 102-C	Corrective WR-8116		Out of Calibration	Low Readings	Recalibrated
Incore 113-C	Corrective WR-8804	Outage #1-12	Bad Electrometer	Meter Pegged Full Scale	Electrometer replaced
Incore Flux Amplifier S/N 5,325,689	Corrective WR-8835		Bad Electrometer	High Readings	Electrometer replaced
Incore Flux Amplifier S/N 5,325,681	Corrective WR-8836		Bad Electrometer	Meter Failed Up Scale	Electrometer replaced
Fuel Grapple	Corrective WR-11912		Bad Tube	No East - West Movement	Replaced tube

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Fuel Grapple	Corrective WR-12253		Loose Fitting	Air Leak	Tightened fitting
Fuel Grapple	Corrective WR-12301		Slack Limiting Switch Needing Adjustment	No Up or Down Movement	Switch adjusted
Leak Rate Test Box	Corrective WR-877	Outage #1-2	Box Out of Calibration	Bad Readings	Box calibrated
6" Unloader Return Pipe	Corrective WR-9652	Outage #1-11 of 1975	Thermal Fatigue	Water Leak From Pipe	Pipe replaced
Instrument Air To Poison System	Corrective WR-11794	Outage #1-11 of 1975	Mercoid Switch Stuck	False Low Pressure Alarm	Switch recalibrated
Poison Storage Tank	Corrective WR-706	Outage #1-11 of 1975	LSL 500 Leak	Leak	Leak repaired
Poison System	Corrective WR-734	Outage #1-6	Magnetrol Flange Leak	Leak	Gasket replaced
North Emergency Condenser Condensate Return Valve MO 101	Corrective WR-1660	Outage #1-6 LER #50-10/1976-4	Disconnected Linkage	Valve Could Not Be Remotely Operated	Linkaged connected, limit reset
Core Spray Injection Valve CS 11	Preventive WR-5157		N.A.	N.A.	Valve repacked
A,B,C Core Spray Pump	Preventive WR-7829		N.A.	N.A.	Pumps overhauled
Core Spray System Bkr. & Contactors	Preventive WR-10555		N.A.	N.A.	Routine inspection

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
MOV CS-12	Preventive WR-11048	Outage #1-11 of 1975	Wrong Size Contact	N.A.	Contact replaced
C.S. 11 Indication	Corrective WR-524		Broken Light Sockets	No Indication	Sockets replaced
C.S. 115, 116, 117, 120	Corrective WR-606	Outage #1-11 of 1975	Switches Not Set Properly	Improper Operation	Switches calibrated
MO C.S. 22	Corrective WR-607		Improper Cartridge Springs	Valve Fails To Open	Spring replaced
Core Spray Valve MO-31	Corrective WR-6870		Environment Conditions	Grease Leak	Tested functional
1A Core Spray Pump	Corrective WR-6871		Bad Oiler	Oil Leak	Installed new oiler
Core Spray Vent Line to Steam Drum	Corrective WR-7505	LER #50-10/1976-12	Hole In Pipe	Leak	Hole welded
CS 1-B Core Spray Pump	Corrective WR-9178		Worn Packing	Leak	Pump repacked
Sphere Vent Exhaust Valves A0503 A0504	Corrective WR-9923		Worn Valve Gaskets	Failed Local Leak Rate Test	Gaskets replaced
Sphere Personnel Door Interlock	Corrective WR-12318		Improperly Positioned Hinge Pin	Door Will Not Close	Tightened set screw on hinge bushing
Emergency Escape Inner Door	Corrective WR-2141		Loose Strong Backs	Excessive Leakage	Tested functional

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Sphere Vent Inlet Valve A0501	Corrective WR-4009	LER #50-10/1976-7	Broken Rubber Seat Seam	Leak	Seam repaired
Sphere Personnel Lock	Corrective WR-6121		Broken Bolt	Door Difficult To Close	Bolt replaced
Sphere Ventilation Isolation Valves	Corrective WR-8938	Outage #1-12	Dirty Valve Seat	Leak	Cleaned and lubricated valve seating face
Fuel Building ARM	Corrective WR-12190		Wrong Alarm Set Point	Continuous Alarms	Set point changed to 80 MR/HR
Emergency Primary Feedwater Pump	Preventive WR-191		N.A.	N.A.	Pump rebuilt
"A" Screen Wash Pump	Preventive WR-4955		N.A.	N.A.	Lube system checked
"A" Screen Wash Pump	Corrective WR-1962		Bad Bearing	Noise	Bearing replaced
"A" Screen Wash Pump	Corrective WR-7105	Outage #1-10	Undetermined	Spurious Trip	Tested functional
Reactor Pressure Lo Vacuum Bypass	Preventive WR-1640		N.A.	N.A.	Calibration
Off Gas Analyzer #2	Corrective WR-1233		Bad Tubes	Low Readings	Replaced tubes

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Off Gas Monitor #2	Corrective WR-1313		Bad Electrometer	Low Readings	Replaced electrometer
B Off Gas Timer	Corrective WR-2685		Bad Tube	Spurious Trip	Replaced tube
Off Gas Monitor 33-1700-0-4	Preventive WR-2970		N.A.	N.A.	Set point & mechanical stop changed
Off Gas Analyzer #1	Corrective WR-3251		Bad Tubes	Failed Down Scale	Replaced tubes
Stack Gas Analyzer	Corrective WR-4285		LCRM Input Circuit Bad	Erratic Readings	Circuit replaced
Off Gas Analyzer #2	Corrective WR-4878		Weak Tubes	Down Scale Readings	Tubes replaced
"A" Screen Wash Pump	Corrective WR-5944		Undetermined	Breaker Tripping	Tested functional
Safety System MG Set "B"	Preventive WR-3399	Outage #1-8	N.A.	N.A.	Replaced brushes
Safety System MG Set "B"	Preventive WR-3400	Outage #1-8	N.A.	N.A.	Replaced brushes
Diesel Starting Batteries	Preventive WR-6842	Outage #1-10	N.A.	N.A.	Batteries replaced
Distribution Panel 40 Feed Breaker	Corrective WR-1320	LER #50-10/1976-3 Outage #1-4	Wet Breaker	Trip	Dried & cleaned breaker
Core Spray Snubbers 12,13, 15	Corrective WR-7374	LER #50-10/1976-11 Outage #1-10	Worn Snubber Seals	Snubbers Lost Oil Level	Replaced all three snubbers

DRESDEN UNIT 1

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
#1 Offgas Monitor Tripping	Corrective WR-9922		Shorted Wiring	Monitor Tripping	Repaired short & calibrated
Secondary Steam Header Low Pressure Trip	Corrective WR-7344		Calibration Setting	Load Limit Tripped at 480# Instead of 435#	Adjusted calibration
Fuel Grapple	Corrective WR-12254		Clamp On Lower Air Hose Too Tight	Hook Would Hang Up	Loosened clamp
CRD Accumulator #18 Vent and Drain	Corrective WR-8818		Worn Needle Valve	N.A.	Added 2000# valve after main drain valve
CRD Accumulator #11 Drain Valve	Corrective WR-7803		Bad Drain Valve	Drain Valve Leaking Excessively	Installed needle valve after main valve
Incore Flux AMP 102C	Corrective WR-9795		Detector Failed	Reading Downscale	Checked out, amp pulled and incore placed on bypass
Incore 106B	Corrective WR-8489		Calibration Drifted	Reading Low	Recalibrated

LICENSEE EVENT REPORTS

UNIT 1

During the reporting period of January-December, 1976, one event classified as a Licensee Event Report took place with reference to a Unit 1 forced outage or forced reduction in power. The report is summarized as follows:

76-4 Emergency Condenser Condensate Return Valve Failur - February 21, 1976

Valve M.O. 101, on the north emergenc' condenser condensate return line began showing a dual indication on the position indicating lights in the Control Room. The valve was cycled manually to trouble shoot the problem. During the cycling, the valve failed to close completely. The unit was shutdown within 48 hours, as required by the Technical Specifications. Valve M.O. 109, on the redundant emergency condenser condensate return line, was fully operational at all times. The valve failure was caused by a malfunctioning linkage between the motor operator and the valve. A loose set screw was discovered in the Linkage Universal Joint. The set screw was tightened, the linkage was adjusted and the valve was cycled three times in succession. The valve was subsequently returned to service after an operation lost time of 45 minutes.

OTHER EVENTS OF INTEREST

During 1976, Unit 1 had no forced outages in which releases of radioactivity exceed 10 percent of annual allowable release limits.

During 1976, Unit 1 had one forced outage (reported as outage #11 of 1975) in which twenty contractors, working on the repair of a 6" unloader pipe, had radiation exposures in excess of 10 percent of annual allowable exposure limits, but within 10 CFR 20 limits.

EXAMINATIONS OF IRRADIATED FUEL

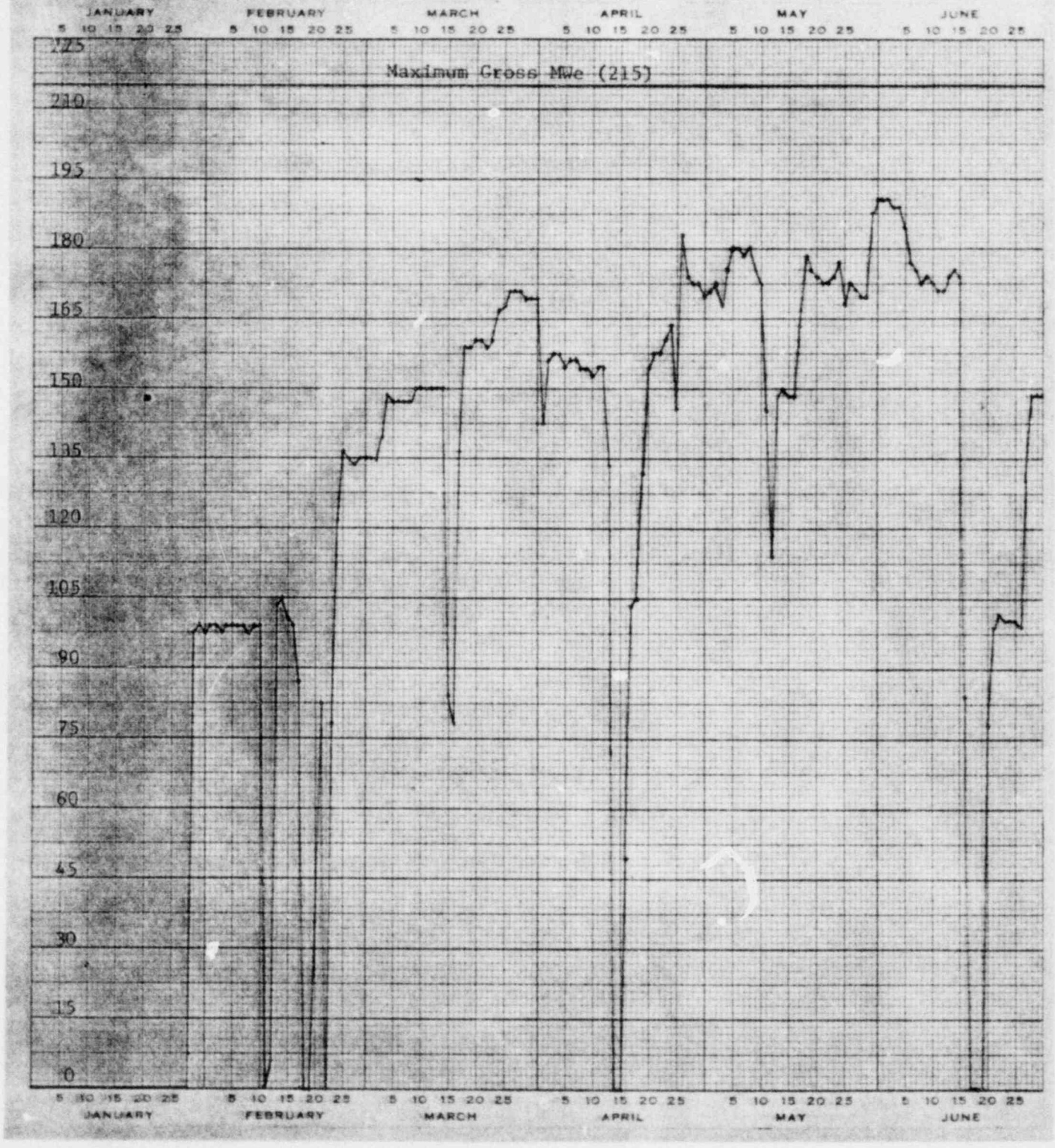
Unit 1 - No such examinations were performed in 1976. The unit returned to operation from its tenth partial refueling outage in January. Fuel examinations were performed in 1975 and reported previously.

NET ELECTRICAL POWER GENERATION

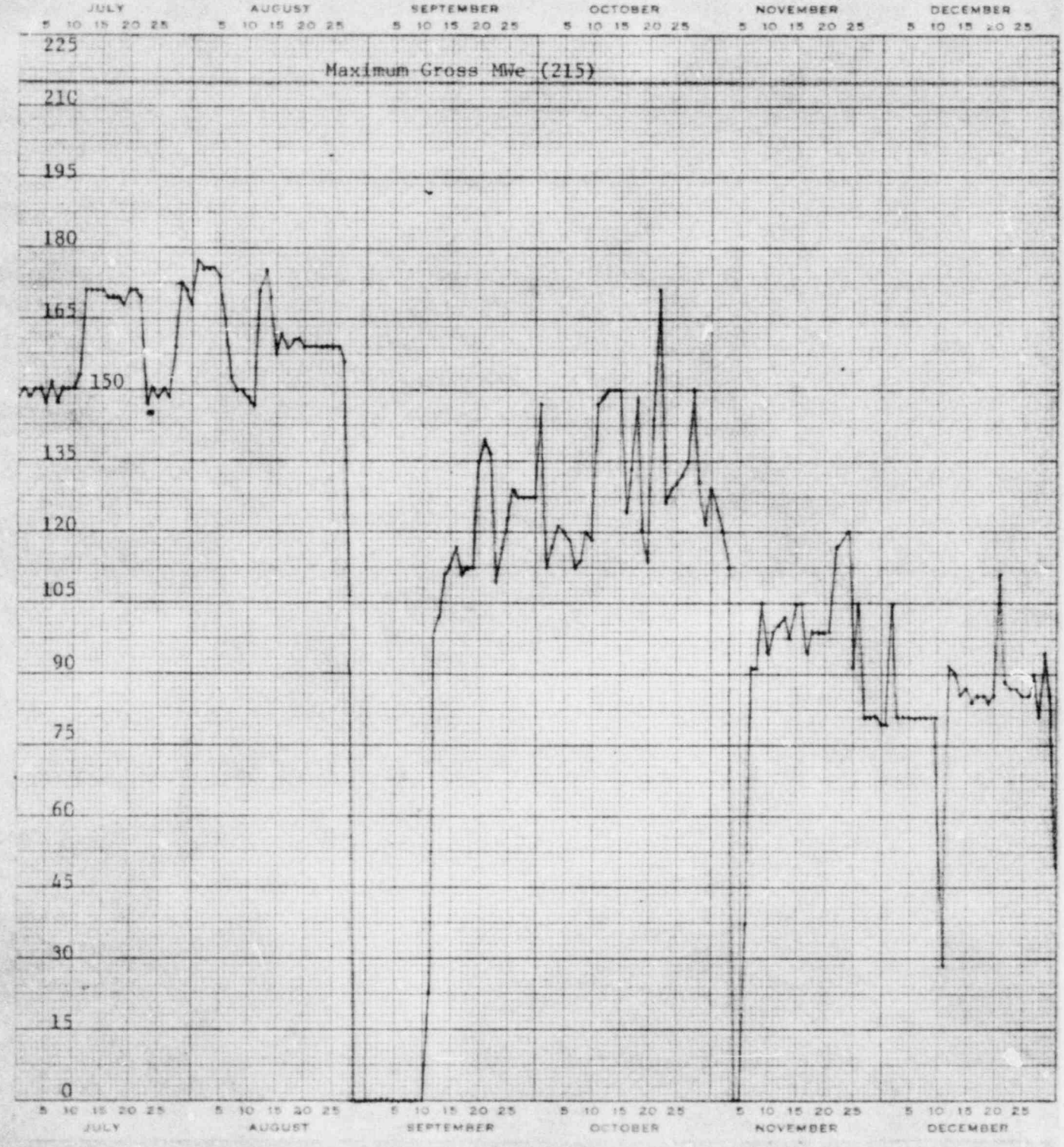
UNIT 1

	YEAR	CUMULATIVE
Number of hours the reactor was critical	7,534.25	100,701.13
Reactor reserve shutdown	0	0
Hours generator on-line	7,399.37	98,972.43
Unit reserve shutdown hours	0	0
Gross thermal energy generated (MWH)	3,424,343.26	51,067,763.22
Gross electrical energy generated (MWH)	1,014,025.11	15,291,401.55
Net electrical energy generated (MWH)	953,015.5	14,423,419.72
Reactor service factor	85.5	69.4
Reactor availability	85.8	69.4
Unit service factor	84.2	67.5
Unit availability factor	84.2	67.5
Unit capacity factor (using MDC)	55.1	49.9
Unit capacity factor (using design MWe)	54.2	49.2
Unit forced outage rate	10.8	10.5

UNIT 1 DAILY AVERAGE GROSS MWe



UNIT 1 DAILY AVERAGE GROSS MWe



UNIT 1 SHUTDOWNS AND FORCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
1-1-76	F 1-11* (carryover outage from 1975)	655:08	A	4 (Unit was in a refueling outage from previous year)	-----	CF	Pipe XX	The outage was a carryover from 1975 involving a crack in the 6" unloader heat exchanger return to rx line. Corrective action - installation of a new thermal sleeve. The repair of the 6" unloader line was the critical path activity.
1-25-76 (occurred during startup time is included in outage 1-11 carryover)	F 1-1*	6:32	A	1	-----	CC	Valve X	Leakage in primary steam valve MO 170-the bonnet to body bolts were torqued critical path was repairing the leak.
1-26-76 (occurred during startup time is included in outage 1-11 carryover)	F 1-2*	39:13	A	1	-----	CC	Valve X	Steam valve MO 170 leakage bonnet to body bolts were torqued the leak was the critical path.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 1 SHUTDOWNS AND FORCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
1-28-76 (occurred during startup time is included in outage 1-11 carryover)	F 1-3*	4:50	A	3	-----	CH	Valve X	Leak in condensate minimum flow valve. Bolts were torqued to correct leak. Critical path was repair of the leak.
2-11-76	F 1-4*	45:51	A	1	-----	HJ	HTEXCH	Tube leaks in "D" secondary steam generator. Critical path work was the plugging of the tube leaks.
2-17-76	F 1-5*	64:35	A	1	-----	HA	TURBIN	The outage was necessitated by a t..bine leak in "E" extraction line. Critical path work was the repair of the leak.
2-21-76	F 1-6*	31:45	A	1	76-1	SB	MECFUN	Linkage on MO 101 loosened up. Critical path work included repair of the linkage.

(1) REASON:
- A - Equipment failure (explain)
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- C - Refueling
- D - Regulatory restriction
- E - Operator training & license examination
- F - Administrative
- G - Operational error (explain)
- H - Other (explain)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 1 SHUTDOWNS AND FORCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
3-15-76	F 1-7*	16:04	H Voltage Transient On Bus	3	-----	IA	ZZZZZZ	The reactor scrammed on Hi Incore. The only critical path activity was scram recovery.
4-13-76	S 1-8*	61:21	H	1	-----	MB	ZZZZZZ	This outage was to make a tie-in of a new offgas line. Critical path was the offgas tie-in.
6-14-76	S 1-9*	85:11	B	1	-----	CD	Valve X	Leaks in primary steam line drain valves MO 167 and MO 168. Critical path was leak repair.
8-28-76	S 1-10*	326:59	B	1	-----	MB	ZZZZZZ	Attempted tie-in of new offgas system. This was the critical path item.
9-11-76	S 1-11*	00:45	B	4 (Turbine Trip)	-----	HA	TURBIN	None-turbine overspeed test. Testing was the critical path item.
11-3-76	F 1-12*	59:56	A	3	-----	HC	Pipe XX	Low condenser vacuum caused by deteriorated piping in the startup drain lines which was replaced. The critical path was the piping replacement.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 1 SHUTDOWNS AND FORCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
12-11-76	S 1-13*	13:41	B	1	-----	MB	ZZZZZZ	Attempted tie-in of new offgas system. This was the critical path item.
12-31-76	F 1-14*	10:27	H	3	-----	CH	Pump XX	Lo-water level caused by a feed pump failure to auto start because of low oil temperature. Due to problems with the winter heating steam regulator. Oil will be kept warmer in the future. Scram recovery was the only critical path activity.

* Unit #-Outage #
1-00
Corresponds to outage # used in Operating Data Report.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIQUE REPORTING REQUIREMENTS

MAIN STEAM ISOLATION VALVE AND FEEDWATER

POWER OPERATED ISOLATION VALVES CLOSURE TIMES

VALVE	CLOSURE TIME (Seconds)
MO-169	67
MO-170	67
MO-5	47
MO-9	45

SUMMARY OF SAFETY RELATED INSTRUMENT RESPONSE TIMES

These surveillances were performed during Unit 1's last refueling outage which lasted from September, 1975 until January, 1976.

In-Core Instrument Response Times

Incore	Number	Response Time (seconds)
101	A	1.90
	B	1.90
	C	1.88
	D	1.94
102	A	1.86
	B	1.90
	C	1.86
	D	1.88
103	A	1.88
	B	1.88
	C	1.84
	D	1.88
104	A	1.88
	B	1.86
	C	1.82
	D	1.88
105	A	1.90
	B	1.88
	C	1.84
	D	1.88
106	A	1.84
	B	1.90
	C	1.86
	D	1.92
107	A	1.84
	B	1.88
	C	1.86
	D	1.88
108	A	1.84
	B	1.86
	C	1.86
	D	1.90
109	A	1.86
	B	1.86
	C	1.86
	D	1.88
110	A	1.86
	B	1.86
	C	1.88
	D	1.90

SUMMARY OF SAFETY RELATED INSTRUMENT RESPONSE TIMES (Continued)

111	A	1.82
	B	1.80
	C	1.80
	D	1.92
112	A	1.86
	B	1.86
	C	1.86
	D	1.86
113	A	1.84
	B	1.86
	C	1.88
	D	1.90
114	A	1.89
	B	1.86
	C	1.86
	D	1.86
115	A	1.86
	B	1.86
	C	1.86
	D	1.86
116	A	1.86
	B	1.86
	C	1.90
	D	1.92

UNIT 1 REACTOR PROTECTIVE SYSTEMS FUNCTIONAL

RESPONSE TIME TEST (REFUEL)

SIGNAL CAUSING SCRAM	SYSTEM	RELAY	CONTACTS	RESPONSE TIME (SECONDS) MAXIMUM ALLOWABLE	RESPONSE TIME (SECONDS) ACTUAL
Manual Penetration Trip	A	254/CS	1-1C	(Not Listed)	.010
	B	254/CS	2-2C	(Not Listed)	.010
Sphere High Pressure	A	2K2	1-2	1.000	.035
	A	2K3	1-2	1.000	.050
	B	3K2	1-2	1.000	.060
	B	3K3	1-2	1.000	.050
Reactor Vessel Lo-Level	A	2K8	1-2	30.000	.025
	A	2K9	1-2	30.000	.035
	B	3K8	1-2	30.000	.008
	B	3K9	1-2	30.000	.008
Primary Steam Isolation Valves Closed	A	2K10A	1-2	1.000	.005
	A	2K10B	1-2	1.000	.003
	A	2K11A	1-2	1.000	.003
	A	2K11B	1-2	1.000	.025
	B	3K10A	1-2	1.000	.008
	B	3K10B	1-2	1.000	.004
	B	3K11A	1-2	1.000	.009
	B	3K11B	1-2	1.000	.005
Primary Steam Bypass And Turbine Stop Valves	A	2K12	1-2	1.000	.025
	A	2K13	1-2	1.000	.025
	B	3K12	1-2	1.000	.005
	B	3K13	1-2	1.000	.005
Condenser Low Vacuum	A	2K6	1-2	1.000	.015
	A	2K6	3-4	1.000	.025
	A	2K7	1-2	1.000	.003
	A	2K7	3-4	1.000	.005
	B	3K6	1-2	1.000	.010
	B	3K6	3-4	1.000	.010
	B	3K7	1-2	1.000	.040
	B	3K7	3-4	1.000	.010
Primary Steam Drum Lo-Level	A	2K29	1-2	3.000	.040
	A	2K30	1-2	3.000	.060
	B	3K29	1-2	3.000	.055
	B	3K30	1-2	3.000	.020
Incore High Flux	A	2K22	1-2	(Not Listed)	.010
	B	3K22	1-2	(Not Listed)	.005

SIGNAL CAUSING SCRAM	SYSTEM	RELAY	CONTACTS	RESPONSE TIME (SECONDS) MAXIMUM ALLOWABLE	RESPONSE TIME (SECONDS) ACTUAL
High Reactor Pressure	A	2K4	1-2	1.000	.025
	A	2K5	1-2	1.000	.030
	B	3K4	1-2	1.000	.009
	B	3K5	1-2	1.000	.050
Scram Dump Tank Hi-Level	A	2K27	1-2	1.000	.030
	A	2K28	1-2	1.000	.040
	B	3K27	1-2	1.000	.035
	B	3K28	1-2	1.000	.020
High Neutron Flux	A	2K14	1-2	0.400	.010
	A	2K15	1-2	0.400	.030
	A	2K16	1-2	0.400	.004
	A	3K14	11-12	0.400	.025
	A	3K15	11-12	0.400	.004
	A	3K16	11-12	0.400	.003
	B	3K14	1-2	0.400	.008
	B	3K15	1-2	0.400	.005
	B	3K16	1-2	0.400	.010
	B	2K14	11-12	0.400	.040
	B	2K15	11-12	0.400	.020
	B	2K16	11-12	0.400	.035
Short Period	A	2K17	1-2	0.500	.003
	A	2K17	3-4	0.500	.045
	A	3K17	1-2	0.500	.050
	A	3K17	3-4	0.500	.006
	A	1K1	1-2	0.500	.045
	A	1K1	3-4	0.500	.008
	B	2K17	7-8	0.500	.030
	B	2K17	9-10	0.500	.050
	B	3K17	7-8	0.500	.008
	B	3K17	9-10	0.500	.010
	B	1K1	7-8	0.500	.010
	B	1K1	9-10	0.500	.060
Manual Scram PB	A	2S5		(Not Listed)	.005
	B	2S5		(Not Listed)	.010

UNIT 2

INTRODUCTION

Dresden Unit 2 is a single cycle boiling water reactor owned by Commonwealth Edison Company and located on a 953 acre site in Gooselake Township, Grundy County, Illinois. The net maximum dependable capacity is 794 MWe except during the period when plant capability is limited by the condenser water cooling facility's ambient temperature, normally July and August. During that period, net maximum dependable capacity is 772 MWe. The nuclear steam supply system was manufactured by the General Electric Company. The architect engineer was Sargent and Lundy, and the constructor was United Engineers and Constructors. The condenser cooling method is of the once through type. The condenser cooling water source is the Dresden two unit cooling lake with use of the Kankakee River in accordance with the limitations specified by NPDES Permit No. IL0002224. The plant is subject to License No. DPR-19, issued December 22, 1969, pursuant to Docket No. 50-237. The date of initial reactor criticality was January 7, 1970, and commercial operation began June 9, 1972.

UNIT 2

HIGHLIGHTS

Dresden Unit 2 entered 1976 with no power restrictions. The unit experienced no major outages during the first two months of the year. On February 26, 1976, a new NRC commitment was made which required a positive one PSI differential between the drywell and the torus. This action was intended to decrease the water level in the torus spider legs, thereby lessening the water hammer effect of a blowdown following a LOCA.

The fourth refueling and maintenance outage began on March 14, 1976. Inservice inspection identified through-wall cracks in the HPCI safe end (50-237-76-21) which required replacement of those sections. Rewelding of 27 of the 40 jet pump gate boltkeepers was performed during this same period. Weld shrinkage apparently forces the weld to support as well as retrain th . Jet pump assembly vibration ultimate a fatique failure of the weld. Before returning the unit to service, a 24 hour integrated primary containment leak-rate test and follow up induced leak-rate test were completed satisfactorily. The refueling outage ended on May 27, 1976.

The unit performed reliably for the remainder of the year with a second half availability of 95.2.

UNIT 2

SUMMARY OF OPERATING EXPERIENCE

The following is a chronological description of Unit 2 operations including other pertinent items of interest for the twelve month period ending December 31, 1976.

1-1 At the beginning of the period the unit was operating at 742 MWe. A 100 MWe/hr load drop was begun at 2310 in preparation for an outage to repair CV-3 & -4.

1-2 The generator was removed from the grid at 0723. A manual reactor scram followed at 1041.

1-3 The reactor was brought critical at 1047 and held in hot standby.

1-4 Following completion of control valve maintenance, a unit and turbine heat-up was begun.

1-5 The generator was phased to the grid at 1253. Load was held steady for equilibrium xenon.

1-6 A preconditioning load increase of 3 MWe/hr was begun.

1-10 Following a load drop to 500 MWe for surveillance testing, the preconditioning load ramp was reinitiated.

1-12 Load was stabilized at 785 MWe due to maximum recirc flow.

1-14 The only load reductions occurring for the period 1-14 through 2-6 were for turbine, LPCI, CS, & CCSW surveillances.

2-7 The final flux shaping for Core III was completed.

2-10 The scram reactivity de-rating coast down was begun.

2-12 The drywell continuous air monitor activity reading began increasing. A load drop of 50 MWe/hr was initiated and drywell deinerting was begun in preparation for a drywell entry.

2-13 The generator was removed from the grid at 1039. A drywell entry inspection revealed that valve 202-7A had a packing leak. The reactor was manually scrammed at 1106. Valve 202-7A was backseated to isolate the leaking packing from system pressure and inspected. The reactor was brought critical at 1929.

2-14 The generator was phased to the grid at 0205. Following a 24 hour soak, a load increase was begun.

2-16 Load increase was terminated at 762 MWe limited by max recirc flow.

2-18 A reactor scram and turbine trip occurred at 1830 following the spontaneous closure of the 2A feedwater regulating valve. It was subsequently determined that valve stem failure had allowed the disc to settle. (D-12-76-10)

2-19 The unit returned to service at 1314 maintaining 445 MWe.

2-20 A gradual load increase continued through 2-23 terminating at 690 MWe limited by unstable response from the 2B feed reg. valve.

2-25 The 2B feed reg valve was returned to service following repairs to the control system and load was increased to 740 MWe.

2-26 A new NRC commitment was made requiring a positive one PSI differential between the drywell and the torus. This action was intended to decrease the water level in the torus spider legs, thereby lessening the water hammer effect of a blowdown following a LOCA. It is suspected that if a blowdown occurred with the water at its normal level, the vertical reactive motion might result in structural damage to the torus supports.

3-9 A rapid load reduction "flow control test" was completed satisfactorily then unit load was returned to max.

3-13 Drywell deinerting was commenced at 0310. A load reduction from 730 MWe commenced at 1950.

3-14 The generator was separated from the grid at 0351 for the scheduled fourth refueling and maintenance outage. A reactor shutdown/cooldown was conducted. Containment integrity was broken and the equipment hatch opened.

3-16 Generator CO_2 purged and reactor water temperature reduced to 90°F.

3-19 The reactor head was removed to its decontamination pad and the steam dryer to its pit.

3-20 De-fueling was performed during the period from 3-20 through 3-22.

3-24 Inservice inspection identified several cracks in the HPCI safe end including one through-wall crack requiring replacement of the HPCI safe end. (50-237-76-17)

3-26 During a representative sample type inspection of the jet pumps, seven faulty boltkeepers were identified (cont' on 3-31).

3-27 The CRD system accumulators were returned to service. Scheduled CRD replacements were completed during the period from 3-27 through 3-31.

3-31 A thorough inspection of all 20 jet pumps was completed. A total of 27 of 40 jet pump gate boltkeepers had broken welds. Weld shrinkage apparently forces the weld to support the keeper. Jet pump assembly vibration ultimately causes fatigue failure. (50-237-76-19) Rewelding of jet pump keepers was performed during the period from 3-31 through 4-12.

4-5 Inservice inspection identified a through-wall crack in the isolation condenser requiring replacement of the isolation condenser safe end. (50-237-76-21)

4-12 Reactor refueling commenced.

4-21 Refueling moves completed. Scram and friction testing commenced.

4-24 CRD timing was completed satisfactorily. Reactor in the shutdown mode. HPCI and isolation condenser line repairs in progress.

4-28 X-ray and penetrant test inspections of the feedwater spargers identified 7 cracks requiring repair.

5-2 Feedwater system repairs were completed satisfactorily.

5-7 Reinstallation of vessel internals was completed.

5-10 The reactor vessel head was put in place and stud tensioning begun. Primary system heatup commenced via the 2A shutdown cooling system.

5-13 Reactor head tensioning completed.

5-14 Reactor vessel hydrostatic test completed.

5-18 A 24 hour integrated primary containment leak-rate test and follow up induced leak-rate test were completed satisfactorily.

5-19 Following standby liquid control system (SBLC) explosive valve surveillance, 16% of the SBLC storage tank volume gravity drained to the reactor vessel. After five vessel bleed and feed cycles, 2C cleanup demineralizer was placed in service. Initial inlet conductivity was 45; outlet conductivity was .08. (50-237-76-31) Generator pressurization commenced.

5-21 SBLC storage tank level and concentration were returned to normal. Primary system boron concentration had decreased to .93 ppm.

5-24 Control rod withdrawal began at 0630. Following scram inlet valve adjustment to rod drive R-10 to prevent rod drift, the reactor was brought critical at 0806. Physics testing was conducted from 0940 to 1505.

5-25 At 0303, while conducting surveillance testing, "A" Target Rock safety/relief valve stuck open. The reactor was manually scrammed and torus cooling was initiated. (50-237-76-34)

5-26 Target Rock valve repairs were completed. The reactor was brought critical at 0132, mode switch placed in Run at 1150. The generator was phased to the grid at 1458 ending the fourth refueling and maintenance outage. Load was steady at 200 MWe. The drywell was inerted and a 1 PSI DP established.

5-27 Power was increased to 450 MWe and held steady for incore calibration and fuel soak.

5-29 A load increase at 3 MWe/hr was commenced.

6-1 At 2010 the 2B feedwater regulating valve was placed in service, but position feedback was improperly connected. An M-G set cut back of 15% occurred and a low reactor level half-scram was received. Recirc pump scoop tubes were locked out.

6-2 The 2B feed reg valve was returned to service and a 3 MWe/hr load increase resumed.

6-4 Load increase was terminated at 792 MWe limited by maximum recirc flow.

6-7 During steady-state operation, the 2A Steam Jet Air Ejector train (SJAE) dropped to zero flow. A rapid load reduction reduced load to 250 MWe. The 2B SJAE system was placed in service. Subsequent investigation determined that overpressurization had caused rupture disc failure. (D-12-2-76-50) The unit operated until 6-18 limited only by fuel management guidelines.

6-18 The "D" traversing incore probe (TIP) indexer malfunctioned but did not limit load.

6-25 The generator was removed from the grid at 0610 for a maintenance outage to replace the B SJAE rupture disc and to repair the D TIP machine. The reactor was taken subcritical at 1000.

6-26 Following the required repairs, the reactor was brought critical at 2015.

6-27 The generator was phased to the grid at 0319. A turbine trip and reactor scram due to moisture separator Hi-Hi level occurred at 0432. The reactor was brought critical at 0745, but was taken subcritical at 1145 because #2 turbine stop valve was not operational. (D-12-2-76-62)

6-28 The reactor was brought critical at 1100 and the generator was phased to the grid at 0102. A load increase at 3 MWe/hr was commenced.

7-8 Load increase was terminated at 805 MWe limited by maximum recirc flow. The unit spent the remainder of the month at essentially full power. With the exception of routine surveillance load drops, operation was at maximum recirc flow or maximum thermal power.

8-1 Unit load was limited by reduced system demand for several days then returned to full power.

8-19 The drywell pumpback system was placed in service.

8-21 The generator was removed from the grid at 0625 for a maintenance outage to repair electrohydraulic control system and gland steam exhaust system leaks and to replace M-G set brushes and reverse condenser flow. The reactor was taken subcritical at 0940. Following the required repairs, the reactor was brought critical at 2202.

8-22 The generator was phased to the grid at 0613 and half-core scram testing was completed. A steady load increase from 125 MWe was commenced.

8-30 Load increase was terminated at 800 MWe limited by maximum thermal power.

9-1 With the exception of routine surveillance and reduced system demand load drops, operation was at full power during the period from 9-1 through 9-15.

9-15 The "A" recirc pump lower lube oil low level alarm was received. The alarm did not reset at minimum pump speed so the pump was shutdown. The generator was removed from the grid at 0836. A drywell entry inspection established that there was no major oil leak. Two and one-half quarts of oil were added to the "A" pump reservoir and the pump was returned to service. (D-12-2-76-92) The generator was phased to the grid at 1529. A fuel soak at a load of 450 MWe was begun. A through-wall crack in the HPCI test return line was identified. The line is used only during testing and does not affect HPCI system operability so the line was isolated. (50-239-76-61)

9-18 Load was decreased to 420 MWe for flux shaping.

9-19 A load increase was begun. A blown fuse caused the B feedwater regulating valve to fail open. A reactor scram due to high water level occurred at 1031. Following repairs, the reactor was brought critical and the generator was phased to the grid at 1643. (D-12-2-76-93)

9-22 A load increase at 3 MWe/hr was commenced.

9-27 Load increase was terminated at 800 MWe limited by condensate demineralizer differential pressure.

10-1 With the exception of routine surveillance and equipment change-over load drops, operation was at maximum recirc flow during the period from 10-1 through 10-16.

10-17 At 1610 the 2A1 lube oil pump tripped. As a result the 2A M-G set and recirc pump tripped. The 2B recirc pump was set to minimum flow. Unit load decreased from 775 to 420 MWe. At 1620 the 2A2 lube oil pump was started and the "A" recirc loop was recovered. A load increase at 100 MWe/hr was commenced. (D-12-2-76-97)

11-3 At 0400, while performing 125 VDC switching, the 2B1 lube oil pump was momentarily deenergized. The 2B M-G set and recirc pump tripped resulting in a load cutback to 502 MWe. The pumps were restarted and load restored to 798 MWe. (D-12-2-76-99)

11-5 The reactor water clean-up system tripped and isolated on high pressure following a pressure control valve failure. The sudden temperature transient on the reactor building closed cooling water system resulted in a temporary loss of the 1 PSI drywell to torus pressure differential.

11-13 The generator was removed from the grid at 0126 for a maintenance outage to repair the B TIP machine. An automatic reactor scram occurred at 0300 when improper operation of the mode switch initiated a Group I isolation. The reactor was below the power range at the time of the scram. HPCI injection valve 2301-8 was found with a broken valve stem. The stem was removed for analysis and the valve was clamped in the open position. (50-237-76-66)

11-15 Following required repairs, a reactor vessel hydro was completed satisfactorily. The reactor was brought critical at 2132.

11-16 The generator was phased to the grid at 1935. A 24 hour fuel soak was commenced with load at 431 MWe.

11-18 A load increase at 3 MWe/hr was begun.

11-28 Load increase was terminated at 783 MWe limited by fuel preconditioning requirements.

11-30 Load was limited by high condensate demineralizer differential pressure. A program of sonic cleaning of the demineralizer beds was initiated that continued through 12-5.

12-5 The unit reached the maximum load possible for the existing rod pattern - 774 MWe.

12-11 During half-core scram testing, CRD F-5 uncoupled. The drive was inserted to position 00 and disarmed. Three symmetric rods were also inserted to position 00. (50-237-76-68)

12-12 A load increase from 676 MWe terminated at 748 MWe limited by fuel preconditioning requirements.

12-18 A reactor scram occurred at 1536 following an Average Power Range Monitor (APRM) Hi Hi spike. A switchgear insulator arcing to ground caused some automatic bus transfer equipment to operate and the resulting voltage transients caused APRM spikes. (D-12-2-76-114) The reactor was brought critical at 2108.

12-19 The generator was phased to the grid at 0245. A 24 hour fuel soak was commenced with load at 398 MWe.

12-20 Load increase terminated at 806 MWe limited by system load requirements.

12-28 An electro-hydraulic control system oil leak required a rapid load reduction followed by a manual scram from 200 MWe at 0747. Following required repairs, the reactor was brought critical at 1706. An intermediate range high flux scram occurred at 1710. CRD J-11 uncoupled during the scram and was subsequently relatched. The reactor was brought critical at 1938.

12-29 The generator was phased to the grid at 0140.

12-30 The unit ended the year at 556 MWe with a 3 MWe/hr load increase in progress.

AMENDMENTS TO FACILITY LICENSE

DPR-19 (UNIT 2) OR ASSOCIATED

TECHNICAL SPECIFICATIONS

AMENDMENT #13

On January 15, 1976, the Nuclear Regulatory Commission issued Amendment #13 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Sections 3.3.A.2 and 4.3.A.2 Reactivity Margin - Inoperable Control Rods.

AMENDMENT #14

On February 25, 1976, the Nuclear Regulatory Commission issued Amendment #14 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Section 1.0 Definitions. Page 1 was changed.

2) Revision of Section 1.0 Definitions. Changed surveillance intervals, paragraph cc.

3) Revision of Table 3.1.1 Reactor Protection System (Scram) Instrumentation Requirements. Changed requirements for following trip functions: 1) Turbine Condenser Low Vacuum; 2) Main Steamline High Radiation.

4) Revision of Bases 3.1. Changed requirement for scram due to "High Radioactivity in Main Steamline Tunnel".

5) Revision of Section 3.3.E Reactivity Anomalies. Changed description of reporting requirements to the N.R.C..

6) Revision of Section 6.1.G.1.a.4 Offsite Review and Investigative Function. Changed description of reporting requirements to the N.R.C..

7) Revision of Section 6.3 Action To Be Taken in the Event of a Reportable Occurrence in a Plant Operation.

AMENDMENT #15

On February 26, 1976, the Nuclear Regulatory Commission issued Amendment #15 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

AMENDMENT #15 (Continued)

1) Revision of Section 3.6.F, page 91a, Structural Integrity has been superceded by the revision per Amendment #26 (effective November 19, 1976).

2) Revision of Bases 3.6 paragraph H Recirculation Pump Flow Match. Stated restriction of "Single Recirc Loop" operation.

AMENDMENT #16

On May 12, 1976, the Nuclear Regulatory Commission issued Amendment #16 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Insertion of new Sections 3.11 and 4.11 High Energy Piping Integrity.

2) Addition of Table 4.11-1 Surveillance Requirements for High Energy Piping Outside Containment.

3) Addition of Bases for High Energy Piping Integrity.

AMENDMENT #17

On November 17, 1976, the Nuclear Regulatory Commission issued Amendment #17 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Sections 3.7.B and 4.7.B Standby Gas Treatment System. The revisions covered changes in Operating Limits and Surveillance Requirements for Standby Gas.

2) Revision of Bases 3.7.C and 4.7.B for the Standby Gas Treatment System.

AMENDMENT #18

On May 24, 1976, the Nuclear Regulatory Commission issued Amendment #18 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Table 3.7.1 Primary Containment Isolation. This changed the valving description per the nitrogen make-up system.

AMENDMENT #19

On May 4, 1976, the Nuclear Regulatory Commission issued Amendment #19 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

AMENDMENT #19 (Continued)

1) Revision of Section 4.3.C Scram Insertion Times. This deleted the requirement for 25 rod scram testing.

AMENDMENT #20

On June 9, 1976, the Nuclear Regulatory Commission issued Amendment #20 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Section 3.5.F.5 Minimum Core and Containment Cooling System Availability. This change covered the coolant availability requirements when irradiated fuel is in the reactor and the vessel head is removed.

2) Revision of Bases 3.5.F for emergency cooling availability. This change corresponds to the revision of Section 3.5.F.5.

3) Revision of Seciton 3.7.A.1 Primary Containment. This change covered the requirements for emergency core cooling.

AMENDMENT #21

On May 23, 1976, the Nuclear Regulatory Commission issued Amendment #21 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Paragraphs "F" and "G" of the Facility License, covering Restrictions. Paragraph "F" involved reactor power level limitation during a pressure transient. Paragraph "G" specifies the operation of recirculation loop equalizer piping.

2) Revision of Sections 1.1, 2.1, 3.5.I, 3.5.J, and 3.5.K involving the definition and limits for Local Linear Heat Generation Rate and Minimum Critical Power Ratio.

3) Addition of Section 3.5.L and 4.5.L Condensate Pump Room Flood Protection.

AMENDMENT #22

On June 3, 1976, the Nuclear Regulatory Commission issued Amendment #22 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

AMENDMENT #22 (Continued)

1) Added Sections 3.10.F and 4.10.F Spent Fuel Cask Handling. This change covered the New Requirements for handling of the fuel cask in regards to the reactor building crane.

2) Added Bases 3.10.F, covering new requirements for fuel cask handling.

AMENDMENT #23

On August 9, 1976, the Nuclear Regulatory Commission issued Amendment #23 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Sections 3.7.D and 4.7.D Primary Containment Isolation Valves. These changes include the operation restriction and surveillance when any main steamline air pilot valve exceeds a temperature of 170°F.

AMENDMENT #24

On September 3, 1976, the Nuclear Regulatory Commission issued Amendment #24 to the Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Addition of Section 3.8.F Miscellaneous Radioactive Source Leakage Test. This new section provides for (a) leakage testing of the sources, (b) establishment of surveillance requirements for the tests, and (c) retention of test results.

2) Addition of Bases 3.8.F Miscellaneous Radioactive Material Sources. Stating the objectives of the specification.

3) Revision of Section 6.5 Plant Operating Records. This change adds the leakage test results to the proper log and record for review.

4) Revision of Table 6.6.1 Special Reports. This change adds "Radioactive Source Leak Testing" as an integral part of the Station Annual Report (to NRC).

AMENDMENT #25

On September 29, 1976, the Nuclear Regulatory Commission issued Amendment #25 to Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

AMENDMENT #25 (Continued)

1) Addition of Sections 3.6.I and 4.6.I Shock Suppressors (Snubbers). This new section describes the plant requirement after snubber failures and snubber surveillance requirements.

2) Addition of Table 3.6.1 Safety Related Shock Suppressors. This new table lists all the safety related snubbers that are to be tested for possible inoperability.

AMENDMENT #26

On November 19, 1976, the Nuclear Regulatory Commission issued Amendment #26 to Dresden Facility License No. DPR-19. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revisions of Section and Bases 3.6.F Structural Integrity of Primary System Boundary. This change included the application of the Summer 1975 Addenda, ASME Code Section XI.

UNIT 2

FACILITY OR PROCEDURE CHANGES REQUIRING NRC APPROVAL

There were no facility or procedure changes during the report year that required prior approval by the Nuclear Regulatory Commission.

UNIT 2

TESTS AND EXPERIMENTS REQUIRING NRC APPROVAL

There were no test or experiments during the report year that required prior approval by the Nuclear Regulatory Commission.

UNIT 2

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION NO. M-12-2-72-85

Flood Prevention for Critical Equipment

This change involved the modification of the diesel cooling pumps, condenser pit, condensate pump room, and containment cooling service water pump room to insure the integrity of critical equipment should the failure of a nearby non-Class I seismic component occur.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would improve plant reliability.

MODIFICATION NO. M-12-2-72-96

Post Accident Drywell Sampling

This change involved the installation of a switch to bypass the isolation signal to the drywell sample valves. The bypass switch is necessary to allow drywell sampling under post accident conditions. Administrative control is maintained by using a key locked switch.

The safety evaluation concluded that this modification would affect the system as previously reviewed, however, the consequence of such an accident would not increase. A Technical Specification change and FSAR modification were approved for this installation.

MODIFICATION NO. M-12-2-73-190

Containment Cooling Service Water Pump Coolers

This change involved the installation of containment cooling service water pump coolers. The addition of these coolers was required by the flood protection modification which required the pumps to be enclosed in a concrete vault.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-73-201

Drywell Instrument Air System Test Valve

This change involved the installation of one-quarter inch valves between A.O.4721 and A.O.4720 and between A.O.4722 and the check valve just upstream of it. These additions, conforming to the

MODIFICATION NO. M-12-2-73-201 (Continued)

original piping specifications, will allow local leak-rate testing of the drywell instrument air system isolation valves.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would improve testing capabilities.

MODIFICATION NO. M-12-2-73-205

Reactor Clean-Up System Drain Valve

This change involved the installation of a one-half inch valve on line 1201-10A for a low point drain. This addition, conforming to the original piping specifications, will allow local leak-rate testing of reactor clean-up system isolation valves 1201-1, 1201-2, and 1201-3.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would facilitate testing.

MODIFICATION NO. M-12-2-74-55

Feedwater Acoustic Monitoring System

This change involved the installation of four detector transducer stations, monitoring equipment, and all interconnecting equipment to allow acoustic monitoring of the reactor feedwater piping and spargers.

The safety evaluation concluded that the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-71

Fire Pump Control System

This change involved the installation of a control room alarm which would annunciate whenever the diesel fire pump control switch is turned to the OFF or MANUAL positions. The station fire protection system was not affected, though the operator will now know the status of the fire pump for use in water deluge and as a back-up to the condensate transfer system.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-106

LPCI Logic Reset Push Buttons

This change involved the installation of two momentary open push buttons for relays 197 and 297. This addition, conforming to applicable manufacturing and seismic requirements, allows the LPCI loop selection logic to be reset from panel 902-46. Previous arrangement required manual operation of the relay contacts to reset the system.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-107

TIP Detector Shield Limit Switches

This change involved the replacement of the mechanical limit switches on the TIP drive system with magnetic proximity switches. The TIP detectors, on several occasions, have been damaged beyond repair because malfunctioning mechanical switches allowed the detector to withdraw into the drive gear. The magnetic switches should reduce the probability of damage to the detector.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would eliminate the previous maintenance and repair problems.

MODIFICATION NO. M-12-2-74-142

HPCI Steam Line High Flow Switch

This change involved the replacement of the HPCI steam line high flow isolation differential pressure unit with a comparable unit of a different range. Reduction of the units range from 400 inches to 200 inches increased the setpoint and indication accuracy. The setpoint value was shifted from 36% of full scale to a more useful 72%.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-143

Core Spray Minimum Flow Switch

This change involved the replacement of the core spray minimum flow switches with a comparable unit of a different range. The previous instruments range was 0-400 inches of water and its setpoint was 7 inches of water decreasing. An alarm setpoint

MODIFICATION NO. M-12-2-74-143 (Continued)

change to a value of 3 inches of water dictated that the instrument be replaced with one with a 0-20 inch range to allow reliable and accurate setpoint adjustment with more error-free indication.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-146

Recirculation Pump Differential Pressure Switch

This change involved the replacement of the recirculation pump differential pressure switches bellows assemblies and indicator scales. The original 0-60 PSID equipment was replaced with comparable 0-6 PSID equipment to increase the sensitivity and accuracy about the 2 PSID setpoint.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-160

HPCI Speed Changer Power Supply

This change involved the rewiring of the HPCI speed changer to eliminate a potential source of equipment damage. With the original wiring arrangement, when the HPCI logic system power supply was deenergized for maintenance, the associated relays' "B" contacts provided a continuous decrease signal to the speed changer motor. The present wiring arrangement guarantees that when the logic system is defused the power supply to the speed changer field is also interrupted.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-74-196

CRD Accumulators N_2 Charging Valves

This change involved the replacement of the Teflon packing ring used on the control rod drive hydraulic accumulator gas charging valves. An unacceptable failure rate attributed to age deterioration and low temperature embrittlement should be corrected with the newly installed ethylene propylene packing.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would improve system reliability.

MODIFICATION NO. M-12-2-74-198

LPRM String Connectors

This change involved the replacement of the LPRM strings. The existing LPRM strings reqired connectors to be installed in the field under adverse conditions. This field installation resulted in a significant number of cracked seals causing the LPRMs to malfunction. The improved style LPRM strings which are now in use utilize a connector that is attached at the factory.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-75-7

General Electric Type MC4.76 4KV Switchgear

This change involved the inspection of all G.E. 4 KV switchgear for improper bolt tightness and for oversized roller trip bars. New bolt retainers were used to correct bolt problems. Oversized roller trip bars produced more frequent occurrences of the breaker tripping free following a closing operation and of the auxiliary contacts failing to close properly. The proper size roller trip bars were installed.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-75-22

Standby Liquid Control Manual Isolation Valve

This change involved the replacement of the 1 1/2" manual isolation valve on the standby liquid control system. The originally installed Crane globe valve had experienced several pressure bonnet seal failures. Since this valve is located inside the drywell, its failure results in forced outages. The Crane valve was replaced with a Hancock valve with a weld bonnet which should reduce maintenance and improve availability.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would reduce required maintenance.

MODIFICATION NO. M-12-2-75-31

Reactor Head Vent Valve

This change involved the replacement of the 2" reactor head vent valve (2-220-50). The originally installed Crane manual globe valve had experienced several pressure bonnet seal ring

MODIFICATION NO. M-12-2-75-31 (Continued)

failures. To avoid future problems with this valve it was replaced with a 2" Hancock globe valve with a weld bonnet which should reduce maintenance and improve availability.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would reduce the potential leakage.

MODIFICATION NO. M-12-2-75-40

Torus To Reactor Building DP Switch Terminal Blocks

This change involved the installation of a terminal block cabinet for the cables connecting the "torus to reactor building DP switches" to the control room. The installed wiring contained a splice box, but there was no access point that allowed the connection of a voltmeter for surveillance and troubleshooting. The present terminal block connection provides an approved method of connecting cables and offers a more precise method to verify correct operation of the differential pressure switches.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-75-65

Separate Feeds To MSL Drain And
Reactor Head Cooling Valves

This change involved the installation of non-fused individual disconnects at local starter panel 28-1-1. The original system used a gang type feed for the MSL drain and the reactor head cooling valves, severely restricting flexibility during refueling. The newly installed disconnects allow feed to the individual motor contactors to be separated.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would increase system flexibility.

MODIFICATION NO. M-12-2-75-67

Diesel Generator Fuel Oil Transfer Pump

This change involved the installation of a local start switch for the #2 emergency diesel oil transfer pump. The low level float switch on the diesel generator fuel oil day tank provided functional control of the transfer pump. This system was not modified, but a parallel switch network was added to allow the operator to perform the transfer pump operability tests required in the diesel generator surveillance procedures.

MODIFICATION NO. M-12-2-75-67 (Continued)

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-75-77

Scram Solenoid Lights

This change involved the installation of an additional set of scram solenoid lights in parallel with the existing scram solenoids and scram solenoid lights. Prior to this change, during the monthly surveillance of the scram instrumentation, a half scram condition was initiated by an instrument mechanic and the front panel scram signal light condition was observed by the operator. The newly installed rear panel scram lights allow the instrument mechanic to personally observe the initiating half-scram condition and to verify that the signal has cleared before continuing.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-75-90

MSL High Flow Sensor Isolation Valves

This change involved the installation of an isolation valve on the main steam line high flow sensor high side test tap. Following testing of the sensor, it was returned to service by valving it to main steam line pressure. The approximately 900 PSI transient could produce a "jolting" affect that would initiate a scram. The isolation valve installed by this change allows the sensor to be pressurized from an external source prior to being returned to service. The potential for an inadvertant scram is thus greatly reduced.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would prevent unnecessary protective system trips.

MODIFICATION NO. M-12-2-75-92

Reactor Service Platform Rod Block

This change involved the rewiring of the rod block circuitry. The present logic wiring prevents the withdrawal of a control rod during operation of the service platform in addition to previous rod blocks. This additional precaution will decrease the probability of a control rod being withdrawn while station personnel are within line of sight of the reactor core.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would increase the margin of safety when people are near the reactor core.

MODIFICATION NO. M-12-2-75-110

Intermediate Range Monitor (IRM) Amplifier

This change involved the updating of several resistors and the addition of high permeability ceramic beads to the base of several transistors. The original IRM amplifier attenuator module had a potential for parasitic oscillations due to small variances in transistor characteristics causing circuit imbalances when the transistors became "hot". The addition of the high permeability ceramic beads will prohibit unwanted oscillations, improve circuit stability, and, with the updated resistor values, provide a more acceptable gain factor.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would improve IRM stability.

MODIFICATION NO. M-12-2-76-24

Torus Support Column Sway Rod Wing Plate

This change involved removing a section from the outside torus support columns wing plates. The wing plates transfer the seismic tie rod force to the base plates. The removal of a slot shaped piece from these plates did not affect their function since the wing plates were not limiting to the support column design and the slots were made in a low stress area. The as-modified equipment satisfies all of the original design criteria and will now allow the use of a lifting bar which is required to determine column loads.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-76-31

Containment Cooling Service Water (CCSW) Vault Doors

The change involved the providing of a watertight enclosure on the CCSW pump side of the vault's submarine door to allow required leak testing to be performed with all personnel outside the vault. The advantage of this arrangement is the ability to inspect the door during the pressurization and make any needed repairs without removing the test plate.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2-76-32

HPCI Hotwell Pump Discharge Line

This change involved the replacement of two unions in the HPCI hotwell pump discharge line with flanges. The flanges were located just upstream of check valve 2301-76 and just downstream of valve 2301-82. The purpose of these unions was to allow removal of a section of line to facilitate maintenance on valve MO2-2301-3. A recurring problem with leakage following disassembly and reassembly of the unions warranted the change to flanges with replaceable gaskets.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would upgrade system integrity.

MODIFICATION NO. M-12-2-76-53

Outer Torus Support Column Base Pins

This change involved the removal of up to .375" from the top surface of selected base pins. Since pin bearing area establishes the ultimate strength of a connection, the capacity of the pin/clevis support connection is not effected. The removal of this material was required to provide access for the lifting bar used in the process of column weighing and balancing.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

UNIT 2/3

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION NO. M-12-2/3-75-30

Diesel Generator Fuel Oil Transfer Pump

This change involved the installation of a local start switch for the 2/3 emergency diesel oil transfer pump. The low level float switch on the diesel generator fuel oil day tank provided functional control of the transfer pump. This system was not modified, but a parallel switch network was added to allow the operator to perform the transfer pump operability tests required in the diesel generator surveillance procedures.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-2/3-76-9

Standby Gas Treatment (SBGT) Elapsed Time Meters

This change involved the installation of non-resetable elapsed time meters in the control circuits of each standby gas train. The installation did not alter the logic or operation of the SBGT system and provides useful historical information. As data is accumulated, this modification will allow monitoring charcoal filter efficiency as a function of actual usage.

The safety evaluation concluded that the proposed change did not constitute an unreviewed safety question.

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Irradiated Fuel Assembly GEB 145	Preventive WR-9688		N.A.	N.A.	Replace upper tie plate with new one done by G.E.
Recirc. Pump	Preventive WR-9101	Outage #2-10	N.A.	N.A.	Checked and adjusted seals
Spare Feedwater Checkvalve	Corrective WR-9022		Valve Body To Large	Valve Hanging Up During Installation	Grind down valve body
Spare Safety Valve	Preventive WR-7752		N.A.	N.A.	Overhauled and tested valve
IRM Chan. 16	Corrective WR-8763		Bad Connection	N.A.	Cleaned connection
LPRM 16-09	Corrective WR-411		Out Of Calibration	LPRM Is Bypassed	LPRM Calibrated
Rx. Bldg. Crane	Corrective WR-10225		N.A.	N.A.	Reset upper limit to 613' + 6"
Refueling Platform	Preventive WR-8021		N.A.	N.A.	After completion of work over reactor restore wiring to normal operation
Isolation Condensor Steam Line Hi Flow Switch 2-1350B	Preventive WR-8764		N.A.	N.A.	Replaced case and did Surv. 33-1300-1
ECCS Jockey Pump	Corrective WR-10224		Seized Bearings	Pump Would Not Run	Replaced bearings and packing

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Stack Gas Rad Monitor 1730A, 1730B	Preventive WR-9105		N.A.	N.A.	Rerouting of cable to allow construction of R.W. barrel storage
Motor 1501-18A	Corrective WR-2785		Undertermined	Damaged End Bell	Replaced end bell
Diesel Generator Shutdown Solenoid #2	Preventive WR-10160		N.A.	N.A.	Had factory rep. check adjustment on shutdown solenoid
Diesel Generator Shutdown Solenoid #2/3	Preventive WR-9147		N.A.	N.A.	Had factory rep. check adjustment on shutdown solenoid
Main Steam Line Hi Rad Monitor 1705-2A	Corrective WR-9810		Undertermined	Switch Contacts Arcing	During investigation could not get unit to trip, everything checked out properly
Reactor Building Interlock Door	Preventive WR-2086		N.A.	N.A.	Switch replaced
Line Flow Check Valve 2-263-2-31R	Corrective WR-5516		Tape In Valve	Refused to Back Seat	Repaired valve
Line Flow Check Valve 2-263-2-20-C	Corrective WR-5517		Tape In Valve	No Flow	Valve repaired & modified
Line Flow Check Valve 2-220-2-22A	Corrective WR-5519		Dirty Valve	No Flow	Valve cleaned & modified

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Line Flow Check Valve 2-262-2-3A	Corrective WR-5520		Dirty Valve	Excessive Flow	Valve cleaned & modified
Line Flow Check Valve 2-262-2-6A	Corrective WR-5521		Dirty Valve	Intermittant Flow	Valve cleaned & modified
Line Flow Check Valve 2-263-2-15A	Corrective WR-5522		Dirty Valve	No Flow	Valve cleaned & modified
Line Flow Check Valve 2-263-2-11	Corrective WR-5523		Dirty Valve	Excessive Flow	Valve cleaned & modified
Line Flow Check Valve 2-220-2-20A	Corrective WR-5524		Dirty Valve	No Flow	Valve cleaned & modified
Line Flow Check Valve 2-263-2-33	Corrective WR-5525		Dirty Valve	No Flow	Valve cleaned & modified
Line Flow Check Valve 2-220-66H	Corrective WR-5526		Dirty Valve	No Flow	Valve cleaned & modified
Line Flow Check Valve 2-220-2-17-C	Corrective		Dirty Valve	No Flow	Valve cleaned & modified
Reactor Vessel Temp Recorder	Corrective WR	Outage #2-4	Not Calibrated	Bad Readings	Recalibration
"B" Electromatic Relief Valve 2-203-3B	Corrective WR-6231		Bad Valve	Failed Test	Installed spare

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Electromatic 2-203-3C	Corrective WR-6809		Bad Valve	Failed Test	Installed spare
MSL Low Pressure Switch 595 103C	Corrective WR-7443		Relay Out of Calibration	1/2 Group One Isolation	Installed shock mounting
Spare Recirc. Pump Seals	Preventive WR-9682		N.A.	N.A.	Seals overhauled & tested
Main Steam Line Drain MO 220-2	Preventive WR-6950	Outage #2-10	N.A.	N.A.	Repacked
2-AO-2-220-44 Water Sample Isolation Valve	Corrective WR-10459		Faulty Diaphragm	Air Leak	Replaced diaphragm
Ball Valve Limit Switch	Preventive WR-11050		N.A.	N.A.	Tested functionally
Electromatic 3C	Corrective WR-9174	Outage #2-10	Bad Pilot Valve	Gasket Leak	Pilot valve replaced
MSIV 1C Relay	Preventive WR-11074		N.A.	N.A.	Cycled valves, tested functionally
Flow Convertors	Preventive WR-11129		N.A.	N.A.	Convertors calibrated
CRD Accumulator 34-23	Preventive WR-11360		N.A.	N.A.	Valve packing replaced
MG Scoop Tube Positioner Mechanical Stop	Preventive WR-11485		N.A.	N.A.	Stops set
AO-2-220-44 Recirc. System Sample Valve	Corrective WR-11816	Outage #2-4	Incorrectly Inscalled Diaphragm	Valve Leak	Diaphragm replaced

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Main Steam Isolation Valves	Preventive WR-11891	Outage #2-4	N.A.	N.A.	Cleaned & lubed guide post
Electromatic Relief Valve 2-203-3B&3E	Preventive WR-11902	Outage #2-4	N.A.	N.A.	Removed & reinstalled valves
2/3 Electromatic Pilot Valves	Preventive WR-11970		N.A.	N.A.	Overhauled valves
Main Steam Line Spare Safety Relief Valves	Preventive WR-11974	Outage #2-4	N.A.	N.A.	New valves installed
Main Steam Line Safety Relief Valve BK-7157	Preventive WR-11975	Outage #2-4	N.A.	N.A.	Valve replaced
Main Steam Line Safety Relief Valve BK-7160	Preventive WR-11976	Outage #2-4	N.A.	N.A.	Valve replaced
Main Steam Line Safety Relief Valve BK-6530	Preventive WR-11977	Outage #2-4	N.A.	N.A.	Valve replaced
Main Steam Line Safety Relief Valve BK-6288	Preventive WR-12213	Outage #2-4	N.A.	N.A.	Valve replaced
Reactor Vessel	Preventive WR-12025	Outage #2-4	N.A.	N.A.	Drywell cover removed
Reactor Vessel	Preventive WR-12026	Outage #2-4	N.A.	N.A.	Reactor head removed

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Reactor Vessel	Preventive WR-12027	Outage #2-4	N.A.	N.A.	Dryer & steam separator removed
Inboard MSIV A02-203-1D	Corrective WR-12040	Outage #2-4	Misadjusted Limit Switch	Malfunction of MSIV	Switch adjusted
Recirc. Valve MO-202-9A	Preventive WR-12236	Outage #2-4	N.A.	N.A.	Limitorque operator replaced
Recirc Valve MO-202-9B	Preventive WR-12238	Outage #2-4	N.A.	N.A.	Limitorque operator replaced
MSL Drain MO-220 -1	Preventive WR-12240	Outage #2-4	N.A.	N.A.	Limitorque operator replaced
Recirc Valve MO-202-7A	Preventive WR-12241	Outage #2-4	N.A.	N.A.	Limitorque operator replaced
Recirc. Valve MO-202-7B	Preventive WR-12242	Outage #2-4	N.A.	N.A.	Limitorque operator replaced
Quad Cities Main Steam Line Safety Valve	Preventive WR-451		N.A.	N.A.	Valve overhauled
Spare Recirc. Pump Seal Flanges 2/3	Preventive WR-465		N.A.	N.A.	Male union halves replaced
2/3 Spare Electromatic Relief Valves	Preventive WR-514		N.A.	N.A.	Valves cleaned & inspected
Vessel Level Switch	Corrective WR-588	Outage #2-4	Bad Valve & Block	Leaking	Replaced valve & block

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Reactor Recirculating Pump 2B	Preventive WR-1255	Outage #2-4	N.A.	N.A.	Seals changed
Reactor Recirculating Pump 2A	Preventive WR-1256	Outage #2-4	N.A.	N.A.	Seals changed
Main Steam Line Safety Relief Valve BK-7164	Preventive WR-1484		N.A.	N.A.	Valve tested and set
Sensing Line Flow Check Valves	Preventive WR-1763	Outage #2-4	N.A.	N.A.	75 Valves Tested
Quad Cities MSL Safety Relief Valve BK-6251	Preventive WR-1850		N.A.	N.A.	Valve tested
Quad Cities MSL Safety Relief Valve	Preventive WR-1851		N.A.	N.A.	Valve tested
Electromatic Valves B,C,D,E	Preventive WR-1950	Outage #2-4	N.A.	N.A.	Valves overhauled
Spare Safety Valve BK-7162	Preventive WR-2133		N.A.	N.A.	Valve overhauled
Reactor Steam Dryer & Separator	Preventive WR-2151	Outage #2-4	N.A.	N.A.	Dryer & separtor installed
Reactor Head	Preventive WR-2153	Outage #2-4	N.A.	N.A.	Head installed
Drywell Head	Preventive WR-2155	Outage #2-4	N.A.	N.A.	Head installed

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Main Steam Safety Valve Hydro Test Gags	Preventive WR-2158	Outage #2-4	N.A.	N.A.	Gags installed and removed for test
Electromatic Pilot Valves C,B, & E	Corrective WR-2323		Bad Gaskets	Leak	Valves relapped
Drywell Cover Top Manway	Preventive WR-2353	Outage #2-4	N.A.	N.A.	Head removed & reinstalled
Spare Electromatic Pilot Valves	Preventive WR-2380		N.A.	N.A.	Valves rebuilt
Drywell Piping	Preventive WR-2441	Outage #2-4	N.A.	N.A.	Welds ground
Drywell Snubbers	Preventive WR-2507	Outage #2-4	N.A.	N.A.	Snubbers tested
Drywell Snubbers	Preventive WR-2508	Outage #2-4	N.A.	N.A.	Fluid added to snubbers
Spare Recirc. Pump 2/3 Seal	Preventive WR-2694		N.A.	N.A.	Seal rebuilt
Reactor Recirc. Pump Seal	Preventive WR-2757	Outage #2-4	N.A.	N.A.	Seal rebuilt
Reactor Vessel Jet Pumps #8 Beam Bolts	Corrective WR-2945	Outage #2-4	Torque Testing	Weld Break	Weld repaired
Reactor Recirc. Pump Spare Seal	Preventive WR-2984	Outage #2-4	N.A.	N.A.	Seal rebuilt
Reactor Jet Pump Restrainer Keepers	Preventive WR-3183	Outage #2-4	N.A.	N.A.	Restrainer keepers changed out

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Quad City Safety Valve #6295	Preventive WR-3211		N.A.	N.A.	Valve tested
Quad City Safety Valve #6251	Preventive WR-3212		N.A.	N.A.	Valve tested
Spare Safety Valve BK-7160	Preventive WR-3394	Outage #2-4	N.A.	N.A.	Valve rebuilt
Spare Safety Valve BK-6288	Preventive WR-3395	Outage #2-4	N.A.	N.A.	Valve rebuilt
Spare Safety Valve BK-7157	Preventive WR-3396	Outage #2-4	N.A.	N.A.	Valve rebuilt
Spare Safety Valve BK-6530	Preventive WR-3397	Outage #2-4	N.A.	N.A.	Valve rebuilt
Spare Electro-matic Relief Valve BK-7050	Preventive WR-3398	Outage #2-4	N.A.	N.A.	Valve rebuilt
Inner Feedwater Nozzle	Preventive WR-3751	Outage #2-4	N.A.	N.A.	Examination
Invessel Service Platform	Preventive WR-3768	Outage #2-4	N.A.	N.A.	Platform installed and removed
Spare Recirc. Pump Seal S/N 24610	Preventive WR-3846	Outage #2-4	N.A.	N.A.	Seal rebuilt
Spare Recirc. Pump Seal S/N 22951	Preventive WR-3847		N.A.	N.A.	Seal rebuilt

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Recirc. Pump Bypass Line	Preventive WR-3851	Outage #2-4	N.A.	N.A.	Instrumented flange removed
Primary System Valves	Preventive WR-4199	Outage #2-4	N.A.	N.A.	Packing tightened on 10 valves
Instrument Flow Check Valves	Preventive WR-4200	Outage #2-4	N.A.	N.A.	Inspected and/or repaired 3 valves.
Target Rock Valve 2-203-3A	Corrective WR-4449	LER #50-237/1976-34 Outage #2-4	Dirty Solenoid	Valve Stuck Open	Solenoid replaced
B Electromatic	Corrective WR-4469	Outage #2-4	Dirty Pilot Valve	Leak	Cleaned valve
Target Rock Valve 2-203-3A	Preventive WR-4478	Outage #2-4	N.A.	N.A.	Pilot assembly replaced
Target Rock Pilot Assembly S/N 130	Preventive WR-4496		N.A.	N.A.	Assembly overhauled
Reactor Recirc. Pump Flow Check 2-262-2-5B	Preventive WR-4518		N.A.	N.A.	Inspection
Main Steam Line Rad Monitors	Preventive WR-5154		N.A.	N.A.	High rad scram adjusted
Recirculation Pump MG Set Scoop Tubes	Preventive WR-5304	Outage #2-5	N.A.	N.A.	Stops reset
MG Set Electrical Flow Controller	Preventive WR-5305	Outage #2-5	N.A.	N.A.	Stops reset

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Recirc. Pump Discharge Valve 202-5A	Corrective WR-5414	Outage #2-5	Bypass Torque Limit Set Too Close	Valve Would Not Open	Adjusted limit
1 B MSIV	Corrective WR-5415	Outage #2-5	Limit Switch Sticking	MSIV Would Not Close	Cleaned limit switch
1 A MSIV	Corrective WR-5416	Outage #2-5	Bad Limit Switch	Failure To Close	Limit switch replaced
Shutdown Heat Exchanger 2B TE-1052E	Preventive WR-5825		N.A.	N.A.	Temperature setpoint reset
Quad Cities Safety Relief Valve	Preventive WR-1852		N.A.	N.A.	Valve tested
Spare Recirc. Pump Seal	Preventive WR-7250	Outage #2-8	N.A.	N.A.	Seal rebuilt
Spare Electro-matic Pilot Valves	Preventive WR-7251		N.A.	N.A.	3 Pilot assemblies made up
Spare Safety Valve BK-6520	Preventive WR-7750		N.A.	N.A.	Valve rebuilt
Spare Safety Valve BK-6532	Preventive WR-7751		N.A.	N.A.	Valve rebuilt
Spare Safety Valve BK-6525	Preventive WR-7753		N.A.	N.A.	Valve rebuilt
Quad Cities Safety Valve	Preventive WR-7976		N.A.	N.A.	Valve tested

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Spare Recirc. Pump Seal S/N RS41580	Preventive WR-8175		N.A.	N.A.	Seal rebuilt
Reactor Recirc. Pump Seal S/N 23062	Preventive WR-8283		N.A.	N.A.	Seal rebuilt
Reactor Wide Range Level Transmitter	Preventive WR-8766	Outage #2-10	N.A.	N.A.	Transmitter installed and removed from Unit 3
Spare Instrument Flow Check Valve	Preventive WR-9061		N.A.	N.A.	Nipple welded
MSL Drain Valve MO 220-2	Preventive WR-9191	Outage #2-10	N.A.	N.A.	Motor replaced
CRD J2 3407	Corrective WR-4855	Outage #2-4	Bad Connections	No Indication Lights	Connectors repaired
CRD M-8	Corrective WR-5268	Outage #2-4	Bad Connections	No Indication Lights	Connectors repaired
CRD E-5	Preventive WR-6151	Outage #2-4	N.A.	N.A.	Installed new drive
CRD Accumulator 26-39	Corrective WR-8516		Dirty Seal	Leak	Cleaned seal
CRD Accumulator 10-19	Corrective WR-11949		Bad Valve	Leak	Valve repacked
CRD Accumulator 58-23	Corrective WR-12036		Bad Valve	Leak	Valve repacked

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator 22-23	Corrective WR-12038		Bad Connector and Cap	Leak	Connector and cap replaced
CRD Accumulator 42-27	Corrective WR-12039		Bad Connector and Cap	Leak	Connector and cap replaced
CRD Accumulator 54-27	Corrective WR-12174		Bad Packing	Leak	Removed old packing and installed new packing
CRD Accumulator S/N 2578	Preventive WR-12207		N.A.	N.A.	Accumulator destroyed and replaced
CRD Accumulator 22-55	Corrective WR-12490		Worn Packing	Leak	New packing installed
CRD Accumulator 26-23	Corrective WR-180		Worn Packing	Leak	Packing replaced
Rod Scram Switches on Panel 902-16	Preventive WR-339	Outage #2-4	N.A.	N.A.	Inspected and tested functional
Spare Accumulator A-3097	Preventive WR-604		N.A.	N.A.	Accumulator overhauled
CRD Accumulator 26-11	Corrective WR-1235		Worn Packing	Leak	Packing replaced
Turbine 1st Stage Pressure 45% Scram Bypass	Preventive WR-1563	Outage #2-4	N.A.	N.A.	Inspected and adjusted
Control Rod Drive in C-10	Preventive WR-1597	Outage #2-4	N.A.	N.A.	Installed new drive

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Control Rod Drive 733C	Preventive WR-1604	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 660C	Preventive WR-1608	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 537C	Preventive WR-1615	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 724G	Preventive WR-1616	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 553C	Preventive WR-1620	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 674C	Preventive WR-1601	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 768	Preventive WR-1617	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 93	Preventive WR-1623	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drive 107	Preventive WR-1627	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drives	Preventive WR-1628	Outage #2-4	N.A.	N.A.	11 CRD's rebuilt
Control Rod Drive	Preventive WR-1699	Outage #2-4	N.A.	N.A.	12 CRD's overhauled
CRD Accumulator 22-47	Corrective WR-1713		Worn Packing	Leak	Packing replaced

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Control Rod Drives	Preventive WR-1761	Outage #2-4	N.A.	N.A.	Toggle switch installed for CRD overhaul
Accumulator 22-19	Corrective WR-1887		Worn Packing	Leak	Packing replaced
Control Rod Drive	Preventive WR-2214	Outage #2-4	N.A.	N.A.	12 CRD position probes inspected and replaced
CRD Drift Alarm	Preventive WR-2241	Outage #2-4	N.A.	N.A.	Checked out alarm circuit. Found satisfactory.
Control Rod Drive 747C	Preventive WR-2261	Outage #2-4	N.A.	N.A.	New drive installed
Control Rod Drives	Preventive WR-2272	Outage #2-4	N.A.	N.A.	CRD housing support system
Control Rod Drives	Preventive WR-2273	Outage #2-4	N.A.	N.A.	5 CRD's leak tested.
CRD Accumulator SN. A3130	Preventive WR-7449		N.A.	N.A.	Took accumulator apart, found it too pitted to rebuild
CRD C7 and 126 Valve	Corrective WR-4539	Outage #2-4	Valve Stem Length	Valve Leaks Through	Lengthened valve stem
CRD P6 (54-23)	Corrective WR-4515	Outage #2-4	Bent Pin Causing Relay Not To Make Contact	When CRD P6 Is Selected, RBM 7 & 8 Become Inop.	Straightened pin on relay, now makes contact
CRD R-10 (58-39)	Corrective WR-4421	Outage #2-4	Scram Inlet Valve Leaks	Drive Drifts In Slowly	Adjusted scram inlet valve

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator S/N 2427	Preventive WR-4413	Outage #2-4	N.A.	N.A.	Upon overhaul found cylinder too pitted
CRD Accumulator 18-55	Corrective WR-4401	Outage #2-4	Worn Accumulator	Leaked Through	Replaced accumulator
CRD Accumulator #2582	Preventive WR-4251	Outage #2-4	N.A.	N.A.	Scrapped due to pitted cylinder
Recirc. Pump Disch. Bypass Valve MO2-0202-7B	Corrective WR-4235	Outage #2-4	Tight Packing	Valve Will Not Close Electrically	Loosened up packing and ran check on motor drive
CRD Accumulator 30-11	Corrective WR-3222	Outage #2-4	Bad Packing and N_2 Cap	N_2 Fill Cap Leaks	Replaced packing and cap
CRD Accumulator 06-39	Corrective WR-4219	Outage #2-4	Worn N_2 Cap and Connector	Fill Cap Leaks	Replaced fill cap and connector
CRD Accumulator 14-47	Corrective WR-4218	Outage #2-4	Bad Accumulator	Hi Level Alarm Will Not Clear	Replaced accumulator
CRD Accumulator #768	Preventive WR-3632	Outage #2-4	N.A.	N.A.	Overhauled accumulator
CRD M-10	Corrective WR-3623		Pins On Relay Shorted Together	CRD Can Be Selected Without Turning Off Power When In Refuel Mode	Straightened pins 1 & 2, 4 & 5 and reinstalled relays
CRD J-12	Corrective WR-3622		Pins On Relay Shorted Together	CRD Can Be Selected Without Turning Off Power When In Refuel Mode	Straightened pins 1 & 2, 4 & 5, and reinstalled relays

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD R9 (58-35)	Corrective WR-3588	Outage #2-4	Probe Buffer Card	"Rods In" Relays 137A & B Do Not De-energize When CRD Is Withdrawn To Position "02"	Replaced probe buffer card
CRD 38-47	Corrective WR-3585	Outage #2-4	Relay Had Bent Pins	Select Next CRD In Refuel Without Switching Rod Power Off	Removed relays and straightened pins
CRD Scram Inlet Valve CV2-0305-126	Corrective WR-3575	Outage #2-4	Scram Inlet Valve Leaking	N.A.	Remove lower valve body installed teflon seat
CRD Accumulator S/N 2576	Preventive WR-3550	Outage #2-4	N.A.	N.A.	During overhaul of accumulator found badly pitted cylinder, scrapped cylincer
CRD Accumulator 30-39	Corrective WR-3521	Outage #2-4	Worn Packing	N_2 Valve Leaking	Repacked valve replaced O-ring
CRD Accumulator 06-39	Corrective WR-3492	Outage #2-4	Worn Accumulator	High Water Alarms	Installed new accumulator and O-rings
CRD 26-35	Corrective WR-3478	Outage #2-4 LER #50-237/1976-28	Buffer Card	Rx. In Refuel Mode & CRD 26-35 Withdrawn Possible To Select Another CRD & Have Rod Permissive	Replaced buffer card and problem with scram valve
CRD Accumulator 34-59	Corrective WR-3441	Outage #2-4	Adjustment of Valve Stem	Scram Inlet Valve Leaking Through	Adjusted stem to seat valve

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
RPIS C-4 (10-15)	Corrective WR-3435	Outage #2-4	Full In Switch Connectors	False Full In Indication	Replaced probe and tightened connectors
CRD D-8 (14-31) Scram Inlet Valve	Corrective WR-3393	Outage #2-4	Steam Adjustment	Valve Leaked Through	Turned stem in one turn to seat valve
CRD G-9 (26-35)	Corrective WR-3380	Outage #2-4	Stem Adjustment	Scram Valve Leaked Through	Turned stem in to seat valve
LPRM (24-57, 08-49,16-49,24-49, 32-49,16-33,24-33,40-25,24-09, 40-09)	Preventive WR-3341	Outage #2-4	N.A.	N.A.	Calibrated LPRM's after replacement during outage
CRD Accumulator S/N 2369	Preventive WR-3264	Outage #2-4	N.A.	N.A.	During overhaul cylinder found pitted and scrapped
CRD Accumulator 42-35	Corrective WR-3223	Outage #2-4	Bad Accumulator	Get Hi Water Alarm	Replaced accumulator
Jet Pumps	Preventive WR-2903	Outage #2-4 LER #50-237/1976-19	N.A.	N.A.	Fix broken tack welds on the restrainer clamp bolt keepers
CRD Accumulator E-13 (18-51)	Corrective WR-2888	Outage #2-4	Accumulator Piston Leaks	Getting High Level Alarm	Replaced accumulator
CRD Accumulator 26-39	Preventive WR-2662	Outage #2-4	N.A.	N.A.	Replaced charging valve

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Scram Inlet Valve 305-126 (34-55,46-15, 58-39,50-19,38-23,06-47,10-51, 26-59,10-47,10-19,10-27,22-35, 30-19,26-27)	Corrective WR-2534	Outage #2-4	Valve Stem Length	Scram Valves Leaking	Lengthened valve stem
Control Rod Drive Cooling Water Check Valve 2-305-133	Preventive WR-2384	Outage #2-4	N.A.	N.A.	Inspected and cleaned filter and check valves
CRD Accumulator 38-51	Corrective WR-2335	Outage #2-4	Bad Packing	N_2 Cap Leak	Replaced packing
CRD Accumulator 14-07	Corrective WR-2334	Outage #2-4	Bad Packing	N_2 Cap Leak	Replaced packing
RPIS 46-23 M-6 Position Probe	Corrective WR-2296	Outage #2-4	Bad Probe	Unable To Get 2 In the Tens By Jumpering In The RPIS Cabinet	Replaced probe
Rx. Vessel Level Instruments (LIS2-263-57A&B) (LIS2-263-58A,B) (Lt 2-646A,B)	Corrective WR-4664		N.A.	N.A.	Checked and reset calibration on limit switches
Scram Reset Switch 590-303	Preventive WR-3420	Outage #2-7	Mechanical Stops On Switch Broken	Switch Would Not Reset	Replaced switch

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Scram Relay 590-108H	Corrective WR-2111	Outage #2-4	Worn Contacts	Relay Did Not Pick Up Right	Replaced stationary and movable contacts
2A RPS MG Set Feed Breaker	Corrective WR-7341	Outage #2-4	Bus Transfer	MG Tripped During Bus Transfer	Replaced overloads
RBM Chan. 7	Preventive WR-7670		N.A.	N.A.	Checked reference voltages
LPRM 56-41D	Corrective WR-6947		Bad Regulator	Downscale Alarm on 902-5 Panel	Replaced and adjusted voltage regulator
IRM Chan. 17	Corrective WR-6919		Bad Interval Components	IRM Will Not Go Below 8%	Replaced Q1, 3, 5, 7, 9 & R28, R54, checked and cleaned all solder connections
APRM DC Amplifiers	Preventive WR-5873		N.A.	N.A.	Checked all solder connections
APRM Chan. 6	Corrective WR-5759		Unknown	Got Rod Block At 103% Instead of 100%	Checked out correctly by Instrument Department
APRM Chan. 5	Corrective WR-5501		Loose Connection	Power Change On APRM	Replaced loose connection on DC amplifier
RBM #8	Corrective WR-5487	Outage #2-6	Flow Convertor Out of Calibration	Low Reading From Meter	Adjusted flow convertor
IRM 12	Preventive WR-5[illegible]2		N.A.	N.A.	Made adjustment on Range 6/7
TIP Ball Valve 136-B-1302	Corrective WR-4902		Plug Disconnected At TIP Drive Motor	Valve Would Not Open	Reconnected motor

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
IRM 17	Corrective WR-4464	Outage #2-4	Bad Cable	Erratic Spiking	Replaced cable in sub pile room
IRM 14	Corrective WR-4434	Outage #2-4	Bad Module	Meter Shakes	Found & replaced bad module
APRM #5 Hi Hi Alarm	Corrective WR-3817	Outage #2-4	Dirty X10 Switch	Hi Hi Alarm With LPRM's Reading "0"	Cleaned switch
Neutron Monitor Shorting Links	Preventive WR-3382	Outage #2-4	N.A.	N.A.	Replace shorting links after fuel moves are completed
SRM #21	Corrective WR-3584	Outage #2-4	Unknown	SRM Reads Too High	Checked out correctly
GE-MAC Level Indicator (LI-2-263-101)	Preventive WR-3536	Outage #2-4	N.A.	N.A.	Calibrated level transmitter
SRM & IRM Jumper Cables	Preventive WR-3435	Outage #2-4	N.A.	N.A.	Installed jumper cables
LPRM's	Preventive WR-3340	Outage #2-4	N.A.	N.A.	Reconnected all LPRM's under reactor
Neutron Monitor Shorting Links	Preventive WR-3285	Outage #2-4	N.A.	N.A.	Remove shorting links
SRM & IRM Sub-Pile Room Cables	Preventive WR-3173	Outage #2-4	N.A.	N.A.	Made new cables long enough to eliminate jumper cables
IRM Chan. 17	Corrective WR-2454	Outage #2-4	Connector Grounded In Junction Box	High Noise Level	Adjusted center lead to connector & repaired grounded connector

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
B TIP Machine	Corrective WR-266	LER #50-237/1976-3	Switch Adjustment	TIP Not Positioning Properly In Shield	Adjusted switch
LPRM 40-49C	Corrective WR-282		LPRM Seal Failure	LPRM Reading High	Recalibrated LPRM
LPRM 48-49C	Corrective WR-471		LPRM Seal Failure	LPRM Reading High	Recalibrated LPRM
APRM Channel 1	Corrective WR-218		Undetermined	Block Setting 1% High	Checked rod block settings none out of tolerance
LPRM 48-33A	Corrective WR-12478		Calibration	LPRM Spiking High	Calibrated LPRM
LPRM 24-12B	Corrective WR-12399		Calibration	LPRM Reading Faulty	Recalibrated LPRM
LPRM 48-49A	Corrective WR-12252	Outage #2-1	Needs Calibration	Meter Reads Incorrectly	Calibrated LPRM
LPRM 32-33B	Corrective WR-12057		Meter Calibration	Meter Swinging Erratically	Changed calibration
LPRM 48-25A	Corrective WR-12056		Meter Calibration	Meter Swings Erratically Around 78 w/cm^2	Calibrated per new calibration curve from N.E.
LPRM 34-17A	Corrective WR-12053		Meter Calibration	Meter Swings Erratically Around 75-80%	Calibrated per new calibration curve from N.E.
LPRM 48-49B	Corrective WR-11929		Calibration Problem	LPRM Reading High	Recalibrated meter

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
LPRM 48-49C	Corrective WR-11840		Undetermined	LPRM Reading High	At time of investigation problem seemed to clear itself
IRM Channel 16	Corrective WR-11806	Outage #2-4	Bad Detector	Swinging From 50 to 125%	After much investigation installed new detector
SRM Channel 23	Corrective WR-11765		Calibration Problem	Retract Permit Comes In Too Soon	Recalibrated monitor
LPRM 24-33B	Corrective WR-11528		Calibration Problem	Reading 80% While TIP Reads 46%	Recalibrated LPRM
LPRM 48-25B	Corrective WR-11499		Seal Leakage	LPRM Reading 35 w/cm^2 Higher Than TIP	Repaired leaking seal between LPRM and cable
LPRM 40-25D	Corrective WR-11418		Low Resistance	LPRM Reads Full Scale With Rx. Shutdown	Replaced LPRM string
LPRM 32-49A	Corrective WR-11443		Seal Leakage	LPRM Reading High	Replaced seal
APRM Flow Comparators "B"	Corrective WR-11262		Calibration Problem	"B" Is Off By 3-4%	Calibrated and touched up with flow comparators
IRM #12	Corrective WR-10476	Outage #2-4	Detector Failed	Reading Full Scale on Range #10	Installed new detector
LPRM 24-33D, 24-49C	Corrective WR-10289		Detectors Failed	Drifting High	Both LPRM's were replaced during outage
IRM Channel 12	Corrective WR-10096		Calibration Setting	Channel 12 Reading 70% While Bringing Reactor Critical	Made correlation adjustment

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
IRM #12	Corrective WR-6552	Outage #2-4	Detector Failed	High Reading	New detector installed per W.R. #10476
Fuel Grapple	Corrective WR-9390		N.A.	N.A.	Repaired grapple under WR. 7836
Refueling Platform	Corrective WR-5205		Broken Spring	Problem With Mechanical Brake	Repaired brake
Fuel Grapple	Preventive WR-4842		N.A.	N.A.	Inspected grapple fixed problem with mechanical brake
Rx. Building Service Grapple	Preventive WR-3619	Outage #2-5	N.A.	N.A.	Replaced main hoist cable, & cable drum guards
Refuel Platform	Preventive WR-3542	Outage #2-4	N.A.	N.A.	Inspected & connected disc brake
Refuel Platform	Corrective WR-3511	Outage #2-4	Short In Wiring	Problem With Up-Down Control	Replaced defective switch and Broken Wire
Refuel Platform	Preventive WR-3433	Outage #2-4	N.A.	N.A.	Replaced disc brake, repaired pin on tachometer coupling
Refuel Platform	Corrective WR-2543	Outage #2-4	Worn Spring On Control Switch	North-South Control Does Not Return To Neutral Position	Replaced spring and adjusted control
Refuel Grapple	Preventive WR-1341		N.A.	N.A.	1 Month inspection
LLRT Pressure Gage (DTS-16)	Preventive WR-1163		N.A.	N.A.	Calibrate gage for LLRT

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
LLRT Gage	Preventive WR-1161		N.A.	N.A.	Check calibration per 33-000-VII
Fuel Crapple	Corrective WR-1036		Broken Spring	Forward - Rev. Control Broken	Replaced broken spring
Refuel Platform	Preventive WR-944	Outage #2-4	N.A.	N.A.	Replaced grapple cable
Fuel Grapple	Corrective WR-923		Problem With Limit & Brake	Grapple Not Working	Adjusted brake and limit switch
Refueling Platform Grapple	Preventive WR-862	Outage #2-3	N.A.	N.A.	Performed complete electrical inspection
Reactor Fuel Grapple	Preventive WR-362		N.A.	N.A.	1 Month inspection
Fuel Storage Jib Crane	Preventive WR-354		N.A.	N.A.	1 Month inspection
Fuel Grapple 833-7	Corrective WR-57		Normal Wear	Worn Main Grapple Cable	Replaced cable
Refueling Platform & Grapple	Preventive WR-11548		N.A.	N.A.	Perform total inspection of platform & grapple
SD Cooling Valve 2-1001-4B	Corrective WR-2012	Outage #2-4	Loose Seal Rings	Bonnet Flange Leaking	Tightened seal ring
MO2-1201-1 Low Point Drain	Corrective WR-9189	Outage #2-10	Crack In Low Point Drain Line	Drain Line Leaks Ahead of Valve	Welded cracked 1/2" pipe
Valve 1201-3	Corrective WR-718	Outage #2-4	Undetermined	Will Not Seal In Close Direction	Cycled valve 3 times worked properly

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Clean Up System MO2-1201-3	Preventive WR-4728	Outage #2-4	N.A.	N.A.	Checked & inspected for full closure
SBLCS Level Indication 2-1152	Corrective WR-7712		Air In Lines	Problem With High Level Alarm	Drained lines
SBLC Squib Monitor "B"	Preventive WR-5230		N.A.	N.A.	Replaced light sockets
SBLC "A" Squib Valve 2-1106A	Preventive WR-4164	Outage #2-4	N.A.	N.A.	Replaced squib valve after being exploded by Tech Staff during test.
SBLC "B" Squib Valve 2-1106B	Preventive WR-3977	Outage #2-4	N.A.	N.A.	Inspect explosive valve & check system continuity
SBLC System Valve 2-1101-15	Preventive WR-2714	Outage #2-4 LER #50-237/1976-17	N.A.	N.A.	Checked valve it showed no problems.
SBLC Relief Valve 2-1105-A,B	Preventive WR-11888	Outage #2-4 LER #50-237/1976-24	N.A.	N.A.	Checked settings of relief valves
SBLC Valve 2-1106-A	Preventive WR-11885	Outage #2-4	N.A.	N.A.	Inspected explosive valve per 36-248
Nozzle N5B	Preventive WR-3136	Outage #2-4 LER #50-237/1976-21	N.A.	N.A.	Safe end replaced
Isolation Condenser Condensate High Flow	Corrective WR-460		CAM Roller Binding	Switch Inoperative	CAM readjusted
Grinnel Snubber	Corrective WR-2690	Outage #2-4 LER #50-237/1976-15	Bad Snubber	Loss of Fluid	Snubber replaced
DPIS 1359-B	Corrective WR-5232		Over Torqued Screw	High Flow Alarm Locking Screw Threads Stripped	Replaced case & calibrated movement

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Isolation Condenser Piping	Corrective WR-5581		Loose Union	Leak	Union tightened
Core Spray Test-table Check Valves 9A & 9B	Preventive WR-9868		N.A.	N.A.	Valves overhauled
Core Spray Test-table Check Valve 9A	Corrective WR-12044		Bad Solenoid	Leak	Solenoid replaced
FS2-1464A	Corrective WR-869		Bad Microswitch	Erroneous Flow Indication	Microswitch replaced
ECCS Jockey Pump	Preventive WR-3288	Outage #2-4 LER #50-237/1976-22	N.A.	N.A.	Inspected and repaired
2C LPCI Pump Breaker	Corrective WR-5403	Outage #2-5 LER #50-237/1976-47	Dirty Contacts	Nonclosure	Contacts cleaned
ECCS Jockey Pump	Preventive WR-2991	Outage #2-4	N.A.	N.A.	Inspected & calibrated
2D LPCI Pump 4KV Breaker	Corrective WR-3025	Outage #2-4	Missing Nut	Motor Inoperative	Nut reconnected
Containment Cooling Service Water Pump Vault 2-4505-3 AB	Corrective WR-3240	Outage #2-4 LER #50-237/1976-23	Worn Seal	Leak	Leaks repaired
Containment Cooling Service Water Pump Vault 2-1512C-12	Corrective WR-3241	Outage #2-4	Worn Seal	Leak	Leaks repaired

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Containment Cooling Service Water Pump Vault 2-1510A-10"	Corrective WR-3242	Outage #2-4	Worn Seal	Leakage During Surveillance Air Test	Leak repaired
Containment Cooling Service Water Pump Vault 2-1514-16"	Corrective WR-3243	Outage #2-4	Worn Seal	Leakage During Surveillance Air Test	Leak repaired
Containment Cooling Service Water Pump Vault 2-1510-16"	Corrective WR-3244	Outage #2-4	Worn Seal	Leakage During Surveillance Air Test	Leak repaired
Containment Cooling Service Water Pump C	Corrective WR-3246	Outage #2-4 LER #50-237/1976-23	Worn Seal	Leak	Leak repaired
Containment Cooling Service Water Pump B	Corrective WR-3245	Outage #2-4	Worn Seal	Leak	Leak repaired
ECCS Jockey Pump	Corrective WR-3293	Outage #2-4	Dirty Valve	Leak	Valve cleaned
Containment Spray Interlock	Preventive WR-4498		N.A.	N.A.	Setpoints changed due to maintaining 1 PSID on drywell.
L.P. Coolant Injection Pump 2A	Corrective WR-4514		Worn Seal	Leak	Seal replaced
Core Spray Valve MO 1402-24B	Corrective WR-5837	LER #50-237/1976-49	Open Limit Switches	No Valve Indication	Limit switch replaced

DRESDEN UNIT 2

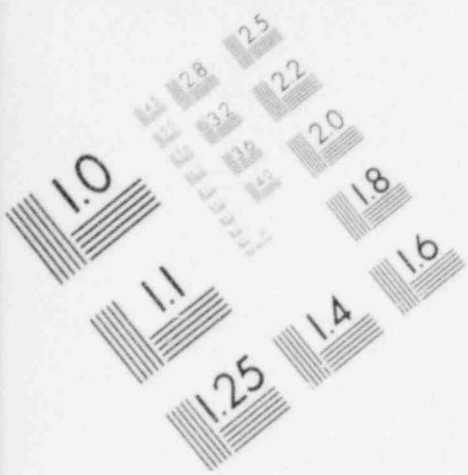
SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
LPCI Pump 4KV Breaker 2C	Preventive WR-5930		N.A.	N.A.	Replaced with spare
LPCI Loop Select PS2-261-35 A,B, C, & D	Corrective WR-7814		Heating Steam Leak Above Switches	Water In Switches	Cleaned and tested switches.
Vent System 2-1601-21	Preventive WR-10326		N.A.	N.A.	New valve installed
Torus Vent Valve 1601-56	Preventive WR-10462		N.A.	N.A.	Valve removed
Drywell Snubbers 6 & 32	Preventive WR-11764		N.A.	N.A.	Fluid added
Drywell Snubber #2	Preventive WR-1204		N.A.	N.A.	Oil added
Drywell/Torus Nitrogen Makeup Isolation MO 2-1601-57	Preventive WR-12239	Outage #2-4	N.A.	N.A.	Limitorque replaced
Torus Snubbers 3 & 13	Preventive WR-21	Outage #2-4	N.A.	N.A.	Fittings tightened
Reactor Building Vacuum Breakers	Preventive WR-512	Outage #2-4	N.A.	N.A.	Breakers tested
Drywell Vacuum Breakers	Preventive WR-513	Outage #2-4	N.A.	N.A.	Inspection
Drywell Equipment Hatch	Preventive WR-1257	Outage #2-4	N.A.	N.A.	Hatch opened and closed
CRD Removal Cavity	Preventive WR-1258	Outage #2-4	N.A.	N.A.	Cavity opened & closed

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Pressure Suppresion Chamber	Preventive WR-1260	Outage #2-4	N.A.	N.A.	Inspection
AO-2-1601-56	Corrective WR-2321	Outage #2-4 LER #50-237/1976-11	Worn Packing	Leak	Repacking
AO-2-1601-23	Corrective WR-2322	Outage #2-4 LER #50-237/1976-10	Worn Valve	Leak	Valve replaced
Vacuum Breaker 1601-32A	Corrective WR-2715	Outage #2-4 LER #50-237/1976-14	Undetermined	Failed Test	Tested functional after 2nd test.
Vacuum Breaker 1601-32E	Corrective WR-2716	Outage #2-4 LER #50-237/1976-14	Undetermined	Failed Test	Tested functional after 2nd test.
Vacuum Breaker 1601-32D	Corrective WR-2899	Outage #2-4	Bushings Not Clearing Properly	Valve Hang Up	Machined bushings to new clearance
2-1601-24	Corrective WR-3172	Outage #2-4	Lack of Lubricant	Worn Flange	Valve greased
1601-55	Corrective WR-3377	Outage #2-4	Worn Seats	Failed Test	Lapped seats & wedge
Torus Snubbers #2,#5,#7,#13	Preventive WR-3383	Outage #2-4	N.A.	N.A.	Checked & filled snubbers with low oil level
Torus Access Hatch East	Preventive WR-4253	Outage #2-4	N.A.	N.A.	Remove fans for LLRT & check cover gasket
Torus Snubber Ser. No. 51035	Preventive WR-4258	Outage #2-4	N.A.	N.A.	Dismantled snubber replaced internal parts
Valve 2-1601-23	Corrective WR-4408	Outage #2-4	Lock Nut On Indicator	Do Not Get Closed Indication	Adjusted indicator and tightened lock nut
Torus Hatch (East)	Preventive WR-4471	Outage #2-4	N.A.	N.A.	Removed hatch so internal visual inspection of pressure suppression structure could be performed



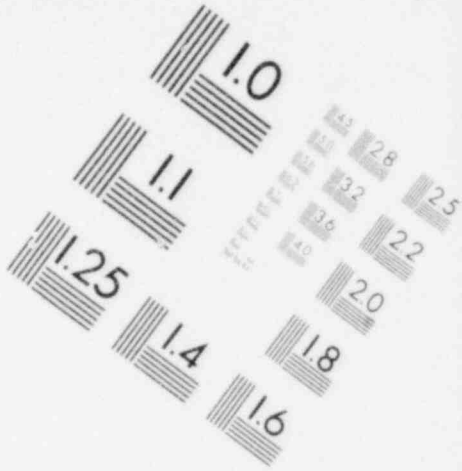
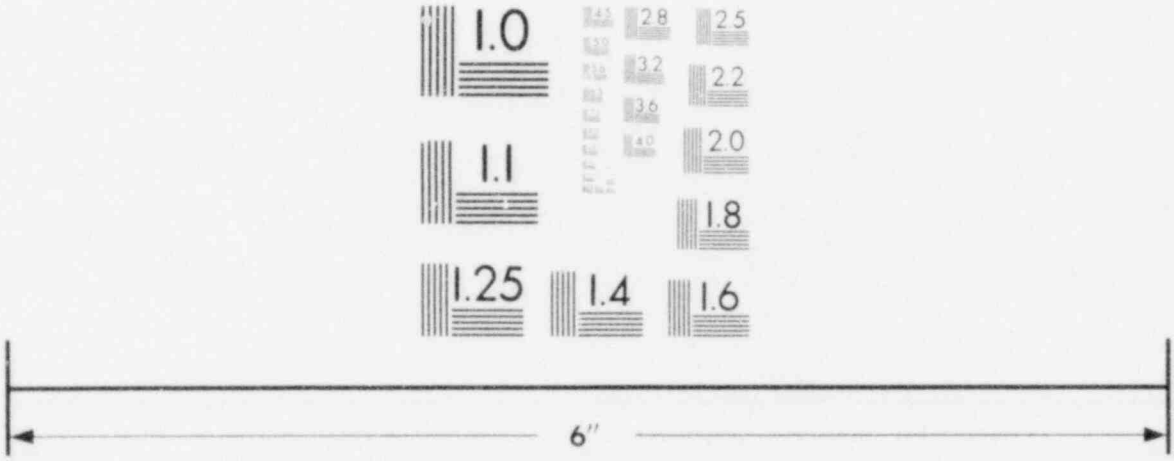
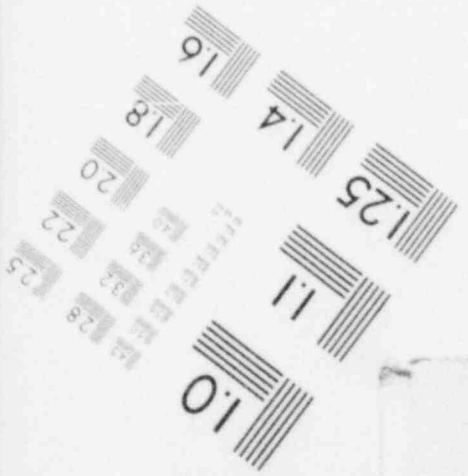
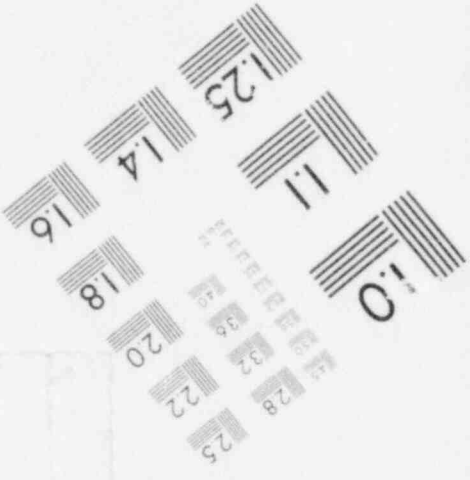


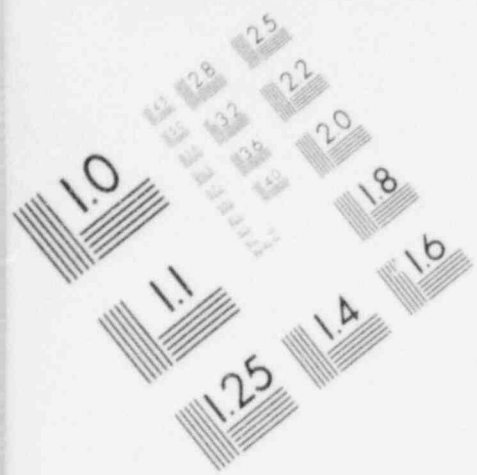
IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART







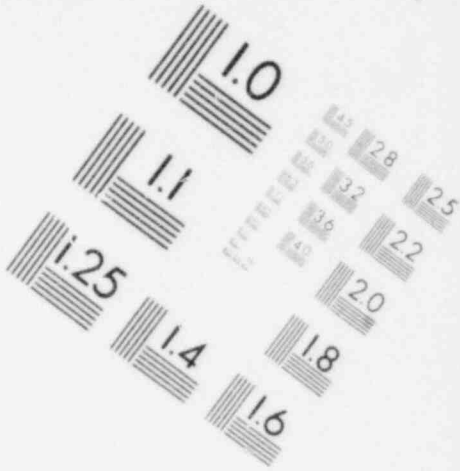
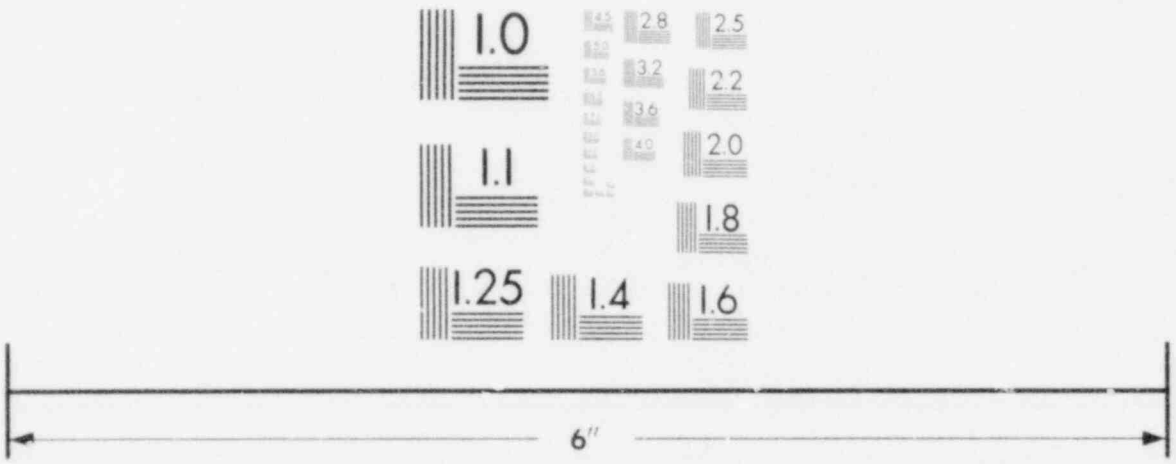
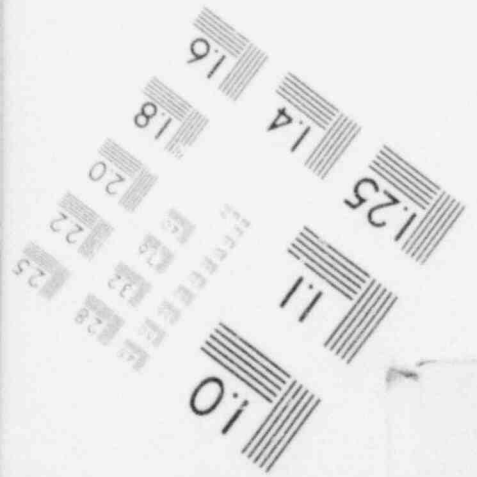
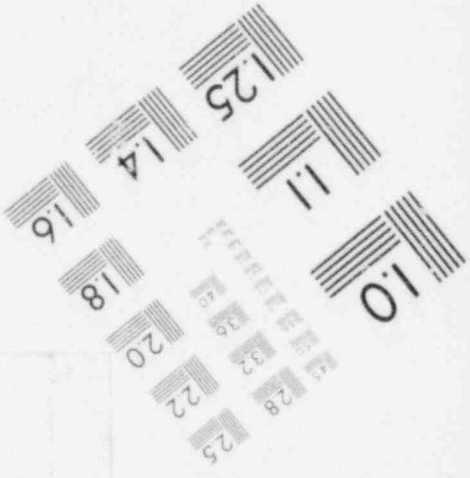


IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART





DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Torus Hatch (East)	Preventive WR-4472	Outage #2-4	N.A.	N.A.	Replaced hatch
Torus Level Indicator Alarm 2-1602-6	Preventive WR-4654		N.A.	N.A.	Changed setpoint from 4.5" to 4.0"
Torus Outer Columns No. 1 and 3	Preventive WR-6626		N.A.	N.A.	Removed base pin washers to check clearances on columns-replaced washer
Torus Level Transmitter 2-1626	Corrective WR-7865		Transmitter Calibration	Deviation In Indications	Checked out system and found it functioning as accurately as designed
Torus High/Low Level Alarm (LS 2-1602-6)	Corrective WR-8455		Indicator Calibration	Get High Level Alarm With Indicator At 3.25"	Checked indicator setting
Inboard Isolation Valve Vent To Drywell AO2-1601-21	Corrective WR-9156	Outage #2-10	Worn Shaft Packing	Failed LLRT	Installed gaskets
Torus Hatch Cover	Preventive WR-9182	Outage #2-10	N.A.	N.A.	Opened and closed torus hatch
Valves AO-1601-21, AO-1601-22	Corrective WR-9192	Outage #2-10	Excessive Leakage Through Seat AO 1601-21	Failed LLRT	Changed valves 1601-22 & 1601-21 installed blind flange, closed 1601-55 & isolation pumpback suction valves passed LLRT
Valve AO 1601-23	Corrective WR-9431		Pressure Switch Isolation Setting	Valve Had To Be Cycled Many Times To Open	Adjusted pressure switch isolation

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Stack Gas Sample Pump #1	Preventive WR-10061		N.A.	N.A.	Replaced bad pump
Stack Gas Sample Pump #2	Preventive WR-10062		N.A.	N.A.	Replaced bad pump
Offgas Monitor RM2-1705-3A	Preventive WR-10730		N.A.	N.A.	Replaced R43 & checked calibration & checkpoints
Offgas Monitor 2-1705-13	Prevnetive WR-12210		N.A.	N.A.	Changed alarm & trip points
Stack Sample Pump	Corrective WR-12388		Faulty Pump	Pump Will Not Pull Large Enough Flow	Replaced pump with rebuilt pump from storeroom
Stack Sample Pump 2-1774	Preventive WR-12500		N.A.	N.A.	Overhauled spare pump returned to storeroom
Stack Sample Pump 2-1774	Preventive WR-12501		N.A.	N.A.	Rebuilt pump
Stack Sampler	Corrective WR-12549		Loose Fittings	Lines Leak	Tightened fittings replaced gasket on "A" pump filter
Main Steam Line Rad Monitor D 1705-11	Corrective WR-1192		Calibration	Meter Reading Higher Than Others	Checked calibration
Gas Pump Reactor Short Stack	Corrective WR-2343	Outage #2-4	Bad Pump	Pump Will Not Run	Replaced pump with one from storeroom
Main Steam Line Radiation Monitor "B"	Corrective WR-2541	Outage #2-4	Trip Setting	Trips Too Low	Calibrated alarm

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Main Steam Line Radiation Monitor "C"	Corrective WR-2929	Outage #2-4	Short In Monitor	Monitor Gen. Half Scram Without Alarms In Control Room	Inspected, cleaned, & repaired input signal connection
Stack Gas Sample Pump 2/3-1774A	Corrective WR-4026	Outage #2-4	Motor Froze	Pump Will Not Run	Replaced pump with spare
Main Steam Line Radiation Monitors A,B,C,D	Preventive WR-5296		N.A.	N.A.	Recalibrated all monitors
Main Steam Line Radiation Monitors 2-1705	Corrective WR-7648		Monitors Calibration	Alarm Setpoints Off	Adjusted main steam line rad monitors high rad scram & isolation per 33-1700-1
HPCI #3 Drain Pot Valve 2-2301-54	Corrective WR-135	Outage #2-4	Worn Packing	Valve Stem Leaks	Repacked valve
HPCI Steam Line Restraint	Corrective WR-6649		Normal Usage	Bent Restraint	Straightened & adjusted restraint
HPCI High Temp. Isolation Sensors	Preventive WR-10925		N.A.	N.A.	Verified setpoints of 3 of the 16 sensors to check for drift
HPCI Valve AO 2301-28	Corrective WR-11393	Outage #2-4	Worn Packing	Valve Leaking Through Packing	Repacked & checked operation
HPCI Exhaust Valve Vacuum Breakers	Preventive WR-11883		N.A.	N.A.	Cleaned & inspected

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
HPCI Turbine GE #122-610	Preventive WR-1300	Outage #2-4	N.A.	N.A.	Dismantle, inspect, and reassemble turbine
HPCI Steam Valve 2-2301-4	Corrective WR-2262	Outage #2-4 LER #50-237/1976-9	Dirty Beaker Contacts	Valve Failed To Open	Checked breaker & motor limits
HPCI Safe End Replacement On Line 2-2305-10B	Preventive WR-2696	Outage #2-4 LER #50-237/1976-16	N.A.	N.A.	Replaced safe end on HPCI line
HPCI Check Valve 2-2301-45	Corrective WR-2913	Outage #2-4 LER #50-237/1976-20	Valve Worn	Excessive Leakage	Removed, repaired and tested valve
HPCI MO 2301-4 Valve Wiring	Corrective WR-3369	Outage #2-4	Installation Deficiency	Wiring Is Incorrect	Corrected wiring per print
HPCI Hotwell Pump Discharge Line 2-2318-2"	Preventive WR-3905	Outage #2-4	N.A.	N.A.	Repair welds in line upstream of pump & near 90° elbow after pump
HPCI Main Pump Drain On Discharge Header	Corrective WR-4280	Outage #2-4	Bad Joint	Leaking Pipe Joint	Replaced nipple after applying pipe joint compound
HPCI Drain Pot Valve 2-2301-5	Corrective WR-4542	Outage #2-5	Valve Packing	Valve Leaks Steam	Repacked valves 2301-54,55
HPCI Main Pump Discharge Header	Corrective WR-4666		Loose Fittings	Drain Line Leaking	Tightened up fitting
HPCI Above Seat Drain Orifice RO 2-2301-62	Preventive WR-5852		N.A.	N.A.	Checked orifice size found it to be proper

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
HPCI Flow Switch 2-2354	Corrective WR-8030		Calibration Problem	Out Of Calibration	Recalibrated switch per 33-2300-III & installed locking screws
HPCI Valve 2-2301-64	Preventive WR-9934		N.A.	N.A.	Replaced valve diaphragm
Equipment Drain Sump Isolation Valve 2-2001-5	Corrective WR-2263	Outage #2-4	Limit Switch Adjustment	Valve Has Double Indication In Open Position	Adjusted limit switch & loosened up valve
Diesel Generator Cooling Water Pump 2-3903-B	Corrective WR-5803	LER #50-237/1976-50	Breaker Overheating	Pump Breaker Tripped During Extended Run	Installed slotted door in breaker cubicle
Limitorque Oper. MO 2-3706	Preventive WR-12237	Outage #2-4	N.A.	N.A.	Replaced operator with one reworked by Limitorque Corp.
Feedwater System Valve 2-220-62B	Corrective WR-2737	Outage #2-4 LER #50-237/1976-18	Worn Seat	Valve Failed LLRT	Lapped seat, cleaned valve
Feedwater System Valve 2-220-58B	Corrective WR-2736	Outage #2-4 LER #50-237/1976-18	Worn Seat	Valve Failed LLRT	Installed new seat ring assembly
Reactor SW Feedwater Nozzle	Preventive WR-3769	Outage #2-4	N.A.	N.A.	Ground out 2 longest indications to check for relevant cracks
Diesel Generator Cooling Water Pump 2-3903B	Corrective WR-5833		Dirty Flange	Water Leaking On Cable Into Pump Motor	Cleaned & inspected flange above D/G cooling water pump
Diesel Generator Cooling H_2O Pump	Corrective WR-5938		Seal Leak In Canned Pump	H_2O Dripping From Conduit Onto Floor	Meggered motor & cable clean sand & H_2O from junction box

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Diesel Generator Cooling Water Check Valve 2-3903-501	Corrective WR-7012		Worn Check Valve	Valve Leaking Through	Installed new check valve
East LPCI Room Cooler 2-5746A	Corrective WR-7815		Broken Pipe Nipple	Cooler Dripping Water On Instrum. Racks	Replaced worn nipple
Service Water Tie To Fire Header M02-3906	Corrective WR-886		Pressure Switch Setting	Valve Would Not Close	Tested valve found problem with pressure switch recalibrated switch
Diesel Fire Pump 2/3-4101	Corrective WR-6220	LER #50-237/1976-51	Fuel Solenoid Coil	Fire Pump Will Not Start	Replaced fuel solenoid coil & relay for alarm annun.
Diesel Fire Pump 2/3-4101	Corrective WR-7978		Radiator Hose Leaks	Leakage From Radiator	Installed new radiator hose
Bellows Flow Meter 2-4741-6A, B,C	Preventive WR-981		N.A.	N.A.	Checked flow meter calibration
Offgas Monitor Log Recorder	Preventive WR-2357	Outage #2-4	N.A.	N.A.	Adjusted calibration to agree with current data
Condenser Off Gas Valve 2-5401B	Corrective WR-2687	Outage #2-4	Worn Solenoid Valve	Excessive Leakage Out of Exhaust Port	Overhauled solenoid valve
Air Ejector Suction Valve AO 2-5401B	Corrective WR-2939	Outage #2-4	Worn Solenoid Valve	Valve Will Not Operate	Overhauled Solenoid
Stack Gas Filter 2A-5403	Preventive WR-4871	LER #50-237/1976-40	N.A.	N.A.	DOP Tested filter

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Offgas Monitor Log Recorder RMR 2-1705-13	Preventive WR-5317	Outage #2-5	N.A.	N.A.	Adjust alarm & trip points
EHC Valve Wiring	Preventive WR-11586	Outage #2-4	N.A.	N.A.	Checked to make sure termina has proper size sta-kons
Turbine Valve Limit Switches	Preventive WR-911	Outage #2-4	N.A.	N.A.	Checked all limit switches and wiring
Fuel Grapple	Corrective WR-459		Faulty Wiring	Up-Down Control Arcing	Replaced bad wiring on up-down switch
Rx. Building Crane	Corrective WR-4755		Limit Switch Setting	Trolley Will Not Move Either Direction	Adjusted limit switch for main hoist to proper height
Rx. Building Crane	Preventive WR-4756		N.A.	N.A.	Checked main hoist & sheaves, greased main hoist block
Diesel Generator	Corrective WR-10060		Faulty Pressure Relay	Crankcase Pressure Alarm	Replaced rocker arm cover gaskets & pressure alarm relay
Diesel Generator	Preventive WR-11138		N.A.	N.A.	3 month inspection also replaced starting solenoid
Diesel Generator	Preventive WR-11288		N.A.	N.A.	1 month inspection (November)
Diesel Generator 2/3	Preventive WR-12017		N.A.	N.A.	1 month inspection (December)

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Diesel Generator Unit 2	Preventive WR-12018		N.A.	N.A.	1 month inspection (December)
Diesel Generator Air Compressor "B"	Corrective WR-12177		Worn Suction & Discharge Valves	Relief Valve Popped. Will Not Reset	Replaced suction and discharge valves
Diesel Generator Air Compressor "B"	Corrective WR-12177A		Vent Port Screen Plugged	Relief Valve Lifting	Cleaned port screen and adjusted pressure switch
Diesel Generator Unit 2	Preventive WR-55	Outage #2-4	N.A.	N.A.	Overhaul engine
Diesel Generator Unit 2	Preventive WR-368		N.A.	N.A.	Annual inspection
Diesel Generator #2/3	Preventive WR-369		N.A.	N.A.	1 montn inspection
Diesel Generator Air Start Compressor	Preventive WR-432		N.A.	N.A.	Replaced compressor with rebuilt one
Diesel Generator #2/3	Preventive WR-1360		N.A.	N.A.	Annual inspection
Diesel Generator #2	Preventive WR-1361		N.A.	N.A.	1 month inspection (February)
Diesel Generator 2/3	Preventive WR-1909		N.A.	N.A.	1 month inspection (March)
Diesel Generator #2	Preventive WR-2028	Outage #2-4	N.A.	N.A.	1 month inspection (March)

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Diesel Generator 2/3	Preventive WR-3084	Outage #2-4	N.A.	N.A.	1 month inspection (April)
Diesel Generator 2	Preventive WR-3103	Outage #2-4	N.A.	N.A.	Performed quarterly inspection (April)
Diesel Generator 2/3	Preventive WR-3646	Outage #2-4	N.A.	N.A.	Replace air line between starting air solenoid
Diesel Generator 2/3	Preventive WR-3866	Outage #2-4	N.A.	N.A.	Performed quarterly inspection (May)
Diesel Generator 2	Preventive WR-3968	Outage #2-4	N.A.	N.A.	1 month inspection (May)
Diesel Generator 2	Preventive WR-5713		N.A.	N.A.	Performed monthly, quarterly, & semi-annual inspection
Diesel Generator Cooling Water Pump 2-3903B	Preventive WR-7631		N.A.	N.A.	Replaced diesel generator cooling water pump
Diesel Generator #2	Corrective WR-7816		Loose Gasket Flange	Engine Lube Oil Leak	Tightened gasket flange
Diesel Generator 2/3	Corrective WR-8008	LER #50-237/1976-62	Excitation Rectifier	Smoke & Sparks Coming From Panel 2223-41	Replaced excitation rectifier
Diesel Generator #2	Preventive WR-8075		N.A.	N.A.	Perform 1 month and quarterly inspect'
Diesel Generator 2A Starting Air Compressor	Corrective WR-8534		Worn V-Belts	Pumps Up Slowly	Replaced Worn V-Belts

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Diesel Generator Heat Exchanger	Preventive WR-9710		N.A.	N.A.	Replaced heat exchanger & cleaned soak back pump strainer
Diesel Generator #2	Corrective WR-8744	LER #50-237/1976-64	Solenoid Valve Adjustment	Diesel Would Not Start	Adjusted shutdown solenoid & ran diesel
4160 Volt Circuit Breakers	Preventive WR-1500	Outage #2-4	N.A.	N.A.	Inspect & overhaul breakers
480 Volt Circuit Breakers	Preventive WR-1499	Outage #2-4	N.A.	N.A.	Inspect & overhaul breakers
Charcoal Adsorber "A" 2/3 A-7509	Preventive WR-1741		N.A.	N.A.	Replaced adsorber filter
Charcoal Adsorber "B" 2/3 B-7509	Preventive WR-1742		N.A.	N.A.	Replaced adsorber filter
Standby Gas Treatment Air Heater "B" 2/3-B-7503	Preventive WR-2333	Outage #2-4	N.A.	N.A.	Checked heaters and associated controls
Standby Gas Treatment Air Heater "A" 2/3 A-7509	Preventive WR-3625	Outage #2-4 LER #50-237/1976-30	N.A.	N.A.	Replaced other (eleven) filters
SBGTS 2/3-7541-28A FIC	Corrective WR-6802	LER #50-237/1976-55	Controller Calibration	Flow Indicators Do Not Agree	Recalibrated flow indicating controller

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
SBGTS Fan Inlet Valve 2/3-7506B	Corrective WR-6855		Bad Limit Switch	Double Indication At Full Open	Replaced limit switch
SBGTS Prefilter "A" 2/3-7502"A"	Preventive WR-6894	Outage #2-7	N.A.	N.A.	Changed prefilters
SBGTS Prefilter "B" 2/3-7502"B"	Preventive WR-6961		N.A.	N.A.	Changed prefilters
SBGTS Flow Switch F.S. 2/3-7541-45A, B	Preventive WR-7044		N.A.	N.A.	Calibrated flow switches
SBGTS FS For Heater Control FS 2/3-7541-41A & B	Preventive WR-7045		N.A.	N.A.	Checked calibration of flow switch & alarm setpoints
480 Volts MCC's	Preventive WR-1501	Outage #2-4	N.A.	N.A.	Inspected & overhauled motor control center units
ESS MG Set Tach Generator	Corrective WR-3654	Outage #2-4	Broken Belts	Unable To Control MG Speed When On D.C. Motor	Replaced bearings & belts
D-2 Drywell Air Sample Inboard Isolation FCV-9206-A	Corrective WR-2281	Outage #2-4	Limit Switch Adjustment	Not Getting Proper Light Indication	Repaired limit switch to give proper lights
250 Volt Station Battery	Preventive WR-11941	Outage #2-4	N.A.	N.A.	Performed discharge test
24/48 Volt Station Battery	Preventive WR-11893	Outage #2-4	N.A.	N.A.	Performed discharge test

DRESDEN UNIT 2

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESUL	
125 Volt Station Battery	Preventive WR-11940	Outage #2-4	N.A.	N.A.	Performed discharge test
250 Volt Battery Charger	Corrective WR-3946	Outage #2-4	Bad SCR	Output Voltage Oscillates	Replaced bad SCR
Group 1 Isolation	Preventive WR-9164		N.A.	N.A.	Relays inspected
MSL Rad Recorder	Preventive WR-1281		N.A.	N.A.	Alarm calibrated

LICENSEE EVENT REPORTS

UNIT 2

During the reporting period of January-December, 1976, one event classified as a Licensee Event Report took place with reference to a Unit 2 forced outage or forced reduction in power.

The report is summarized as follows:

2-76-1 Steam Jet Air Ejector "2A" Rupture Diaphragm Failure - June 7, 1976

During steady state operation, "2A" Steam Jet Air Ejector (SJAE) flow dropped to zero. While investigating the problem, personnel in the area heard a "thud" which was thought to be an explosion. An immediate load reduction was initiated, and the standby SJAE was placed in service. The rupture diaphragms in both SJAE's were later found to have failed. The off gas filter in service at the time was DOP tested and found to be acceptable. The "2A" SJAE diaphragm was replaced and a temporary cover was placed on the "2B" SJAE. The unit load was increased after the "2B" SJAE had been placed in service.

The cause of the off gas system over pressurization has not been determined. It is speculated that the rupture diaphragm failures were caused by a hydrogen detonation in the off gas system. A committee (which was established as a result of the recent Unit 3 off gas system over pressurization) will address the origin and prevention of the off gas explosions.

During this repair Unit 2 experienced an approximate duration time of 48 hours at reduced power.

OTHER EVENTS OF INTEREST

During 1976, Unit 2 had no forced outages in which releases of radioactivity or radiation exposures exceeded 10 percent of annual allowable limits.

EXAMINATIONS OF IRRADIATED FUEL

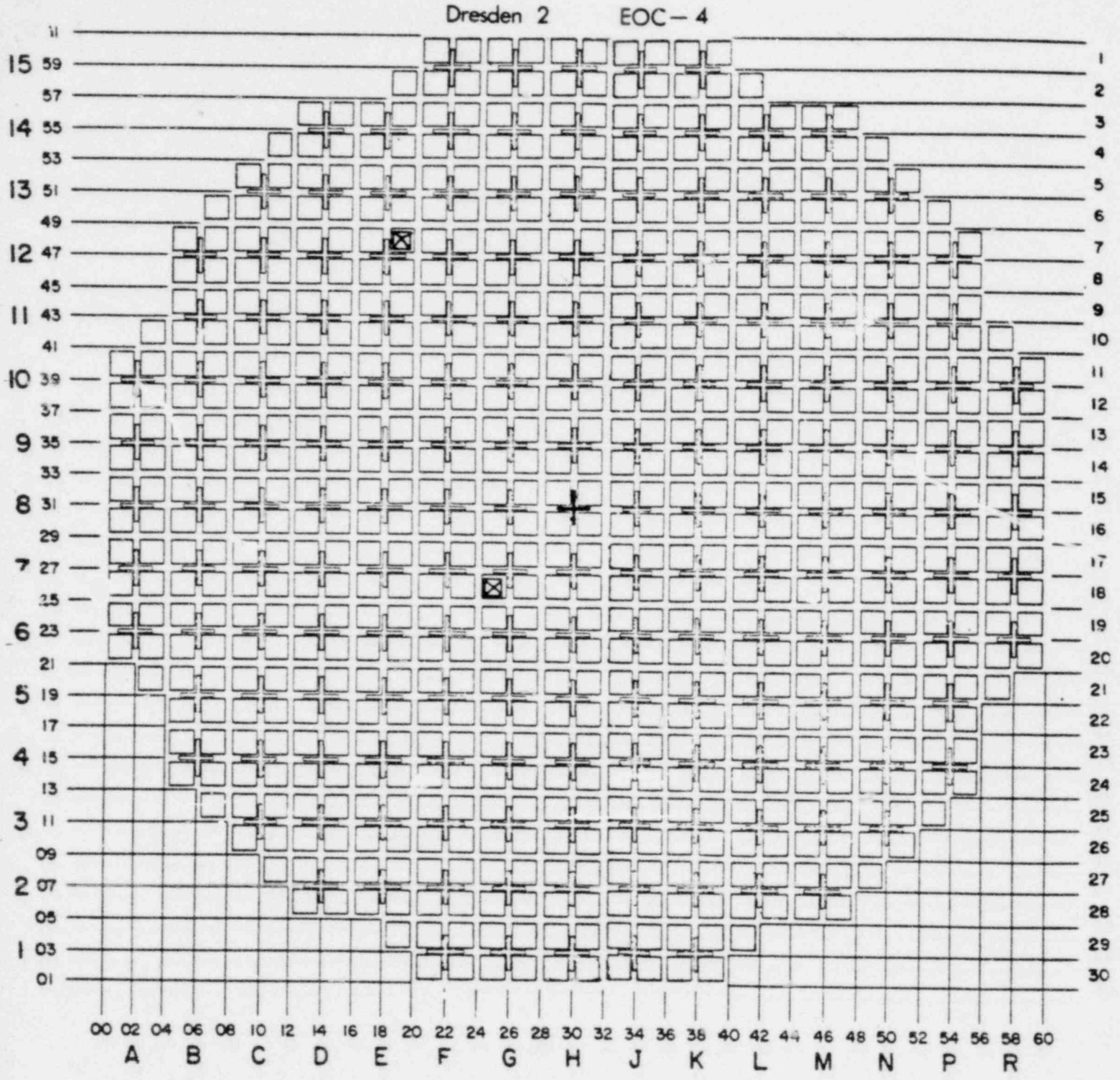
Unit 2 - Following shutdown on March 14 at EOC-4, a limited out-of-core wet sipping program was begun. Since the Cycle 4 offgas activity levels had been quite low with no increase events, very few failures were anticipated. Each of the 160 high-exposure discharge assemblies was sipped, plus each of the 56 assemblies whose removal was necessitated by LPRM replacement. Of the 216 assemblies thus sipped, only two failed assemblies were identified. The locations of these assemblies in the Cycle 4 core are listed in Table 2-1 and mapped in figure 2-1.

TABLE 2-1

FAILED FUEL ASSEMBLIES DETECTED AT EOC-4 : UNIT 2

	ASSEMBLY	CYCLE 4 LOCATION	EOC-4 EXPOSURE, MWd/T
1.	DN 1156	25-26	14733
2.	DN 854	19-48	14908

FIGURE 2-1

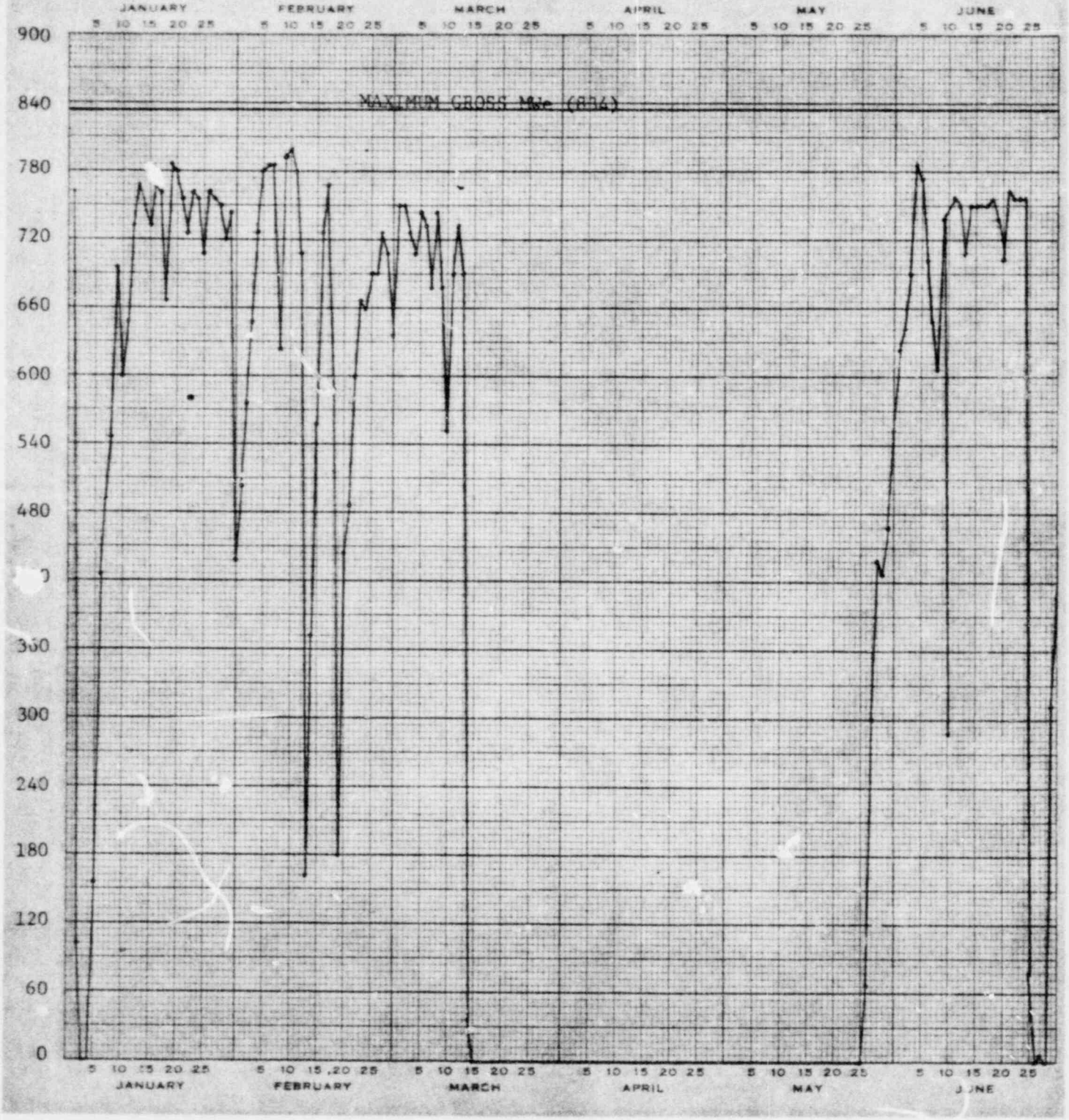


NET ELECTRICAL POWER GENERATION

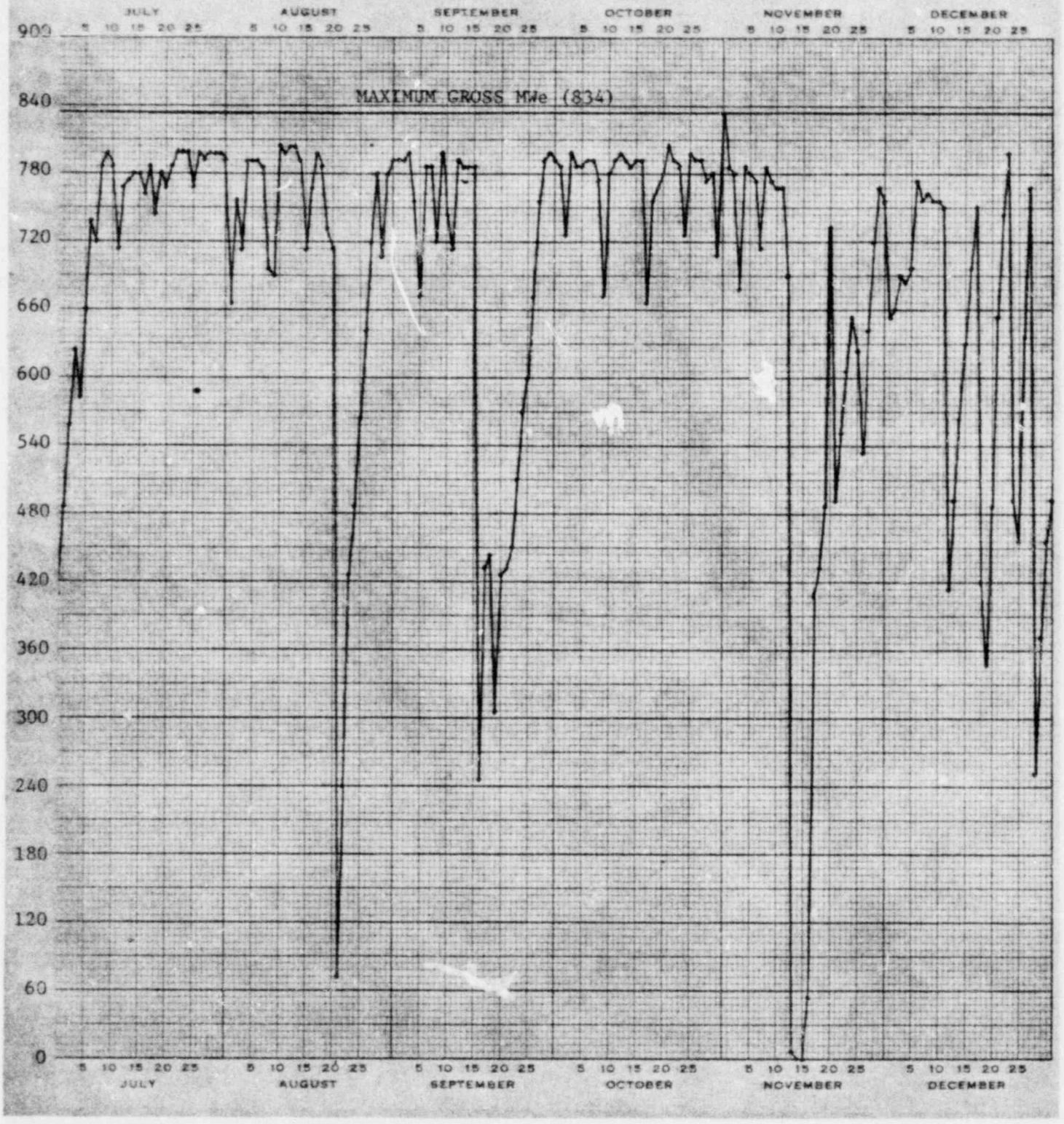
UNIT 2

	YEAR	CUMULATIVE
Number of hours the reactor was critical	6,873.98	42,576.18
Reactor reserve shutdown	0	0
Hours generator on-line	6,664.58	39,569.62
Unit reserve shutdown hours	0	0
Gross thermal energy generated (MWH)	14,281,659	74,857,672
Gross electrical energy generated (MWH)	4,610,359	24,020,712
Net electrical energy generated (MWH)	4,371,553.689	22,711,515.69
Reactor service factor	78.2	73.2
Reactor availability	78.2	73.2
Unit service factor	75.9	68.0
Unit availability factor	75.9	68.0
Unit capacity factor (using MDC)	64.5	50.6
Unit capacity factor (using design MWe)	61.5	48.2
Unit forced outage rate	4.1	17.1

UNIT 2 DAILY AVERAGE GROSS MWe



UNIT 2 DAILY AVERAGE GROSS MWe



UNIT 2 SHUTDOWNS AND F ED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
1-2-76	M 2-1*	77:30	A	3		HB	Valvex	Repair of steam leaks from #3 & #4 control valves was the critical path activity. The scram occurred during cooldown due to a faulty bypass pressure switch which was subsequently repaired.
2-13-76	F 2-2	15:26	A	2		CB	Valvex	Forced outage for excessive drywell floor drain leakage. Repacking of valve 202-7A was critical path activity.
2-18-76	F 2-3	18:43	A	3	76-6	CH	Valvex	Reactor scram from low water level after 2A feed reg valve stem broke & valve disc drifted shut (critical path). Several condensate demin gaskets were also replaced.
3-14-76	S 2-4	1762:07	C	2		RC	Fuel XX	4th Unit 2 refueling & maintenance outage. Critical path activity included: 1) Work necessary to expose the core 2) Fuel moves 3) Jet pump repairs 4) CRD overhaul (Cont.)

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 2 SHUTDOWNS AND RCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
3-14-76 (Cont.)								5) PT & UT of feedwater nozzles 6) Reassembly 7) Integrated primary containment leak-rate test.
6-7-76	F PR 2-1**	16:30	A	NA	76-40	MB	ZZZZZZ	Both air ejector rupture diaphragms ruptured. A forced power reduction from 792 to 250 MWe occurred until a temporary rupture diaphragm was installed.
6-25-76	M 2-5	45:09	B	1	-----	IE	Mec Fun	Maintenance outage to repair D TIP indexer (critical path). SJAE rupture discs were replaced.
6-27-76	F 2-6	44:30	A	3		HB	XXXXXX	Moisture separator high level caused a turbine trip.
8-21-76	M 2-7	23:48	B	1	-----	HA	Valvex	Critical path activity was the repair of an EHC oil leak. Gland steam system repairs & M-G brush replacement were also performed.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 2 SHUTDOWNS AND F(ED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
9-16-76	F 2-8	6:53	H	1		CB	Pump XX	Shutdown to refill "A" recirc pump oil reservoir following anticipatory low level alarm.
9-19-76	F 2-9	6:12	A	3		CH	CKTBRK	Blown fuse in B feed reg valve control circuit caused High water level scram. No critical path activity.
10-17-76	F PR 2-2**	6:06	A	NA	-----	CB	Pump XX	Spurious "A" recirc pump trip forced a temporary power reduction from 800 to 420 MWe. Recovery of "A" recirc loop was only critical activity.
11-3-76	F PR 2-3**	6:20	G	NA	-----	CB		Switching error caused temporary loss of B recirc pump which forced a temporary power reduction from 800 to 502 MWe.
11-13-76	M 2-10	90:09	B	2		IE	Mec Fun	A maintenance outage was taken to repair the B TIP indexer. Critical path activity was repair of the drywell vent valve which failed a leak-rate test.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 2 SHUTDOWNS AND RCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
12-18-76	F 2-11	11:05	H	3		IA	Instru	A switchyard voltage transient caused instrument spikes. A high APRM scram occurred. No critical path activity other than scram recovery.
12-28-76	F 2-12	17:53	A	2		HA	Valvex	Critical path activity was the repair of an EHC oil leak which forced the outage.

* Unit #-Outage #
2-00
Corresponds to outage # used in Operating Data Report.

** Power Reductions

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 2

UNIQUE REPORTING REQUIREMENTS

There were no events on Unit 2 which require special reporting.

UNIT 3

INTRODUCTION

Dresden 3 is a single cycle boiling water reactor, owned by the Commonwealth Edison Company and located on a 953 acre site in Goose Lake Township, Grundy County, Illinois. The next maximum dependable capacities are 773 MWe during the summer and 794 MWe during the winter. The manufacturer of the nuclear steam supply system was General Electric Company; the architect/engineer was Sargent and Lundy; and the constructor was United Engineers and Constructors. This unit's basic method of condenser cooling is the use of an artificial cooling lake on a closed cycle basis. There is also provision for cooling via the Kankakee River as well as provision for cooling via lake and river combination. The plant is subject to Facility License No. DPR-25, issued January 12, 1971, pursuant to Docket No. 50-249. The date of initial reactor criticality was January 31, 1971 and commercial generation of power began November 16, 1971.

UNIT 3

HIGHLIGHTS

Among the significant events of the year was the power output restriction (derating) due to high off gas activity. Unit 3 began the year with a derating of 232 MWe and continued as such until shortly before the September 1976 refueling outage. It was at this time, approximately one month before the outage, that the Nuclear Engineering group decided to increase power. This power increase was to facilitate fuel failure detection during the refueling outage. Upon resumption of power after the refueling outage, the unit proceeded to increase towards its new maximum capability of 832 MWe, no longer restricted by the off gas problem.

Additionally, on February 26, 1976 we were, per an N.R.C. committment, required to maintain a positive differential pressure of one P.S.I. from the drywell to the torus (see explanation in the "Summary of Operating Experience"). As a result of this new requirement, a new system was designed and installed. The function of this system was to maintain the desired drywell to torus differential pressure. This "Pump Back System", as it is called, consists of two pump back air compressors, a Receiving Tank, and Piping Connections to the Nitrogen Make-Up system for discharge to the drywell and to the nitrogen inerting system for suction to the torus.

Of all the outages which occurred during the year 1976, those which were of major consequence are as follows:

A) "Off Gas Over-Pressurization", occurring 4/29/76 and lasting 5 days. Refer to Licensee Event Report no. 3-76-1.

B) "Excessive Drywell Floor Drain Leakage", occurring 8/29/76 and lasting 4 days.

C) "Moisture Separator Drain Line Leak", occurring 9/13/76 and lasting 1 day. Refer to Licensee Event Report no. 3-76-2.

D) "The Fourth Unit 3 Refueling Outage", beginning 9/19/76 and lasting 50 days.

SUMMARY OF OPERATING EXPERIENCE

UNIT 3

The following is a chronological description of plant operations including other pertinent items of interest for the twelve month period ending December 31, 1976.

1-1 At the beginning of this report the plant was operating at 71% power (590 MWe).

1-3 Control rods K-12 and K-13 scrammed when "B" safety system tripped. Holding at min. recirc flow to withdraw above rods. Found failure in the associated "A" safety system solenoids.

After repairs, unit began to increase load from 407 MWe at the rate of 3 MWe/hr.

1-5 Load increase terminated at 600 MWe.

1-9 Dropped load from 600 MWe to 400 MWe for surveillance testing. After satisfactory testing as well as replacement of scram solenoid test switch on control room panel, unit returned to 600 MWe, where it remained at a steady state through the end of the month.

2-2 Entry was made into the X-area (hi-rad) to repair packing leaks on motor operated valves 3-220-3 and 3-220-4.

2-14 Began load drop of 100 MWe/hr at 1900 hours in preparation for unit shutdown.

2-15 Unit shutdown at 0052 for control rod pattern changes. At 1415 hours the reactor was brought critical and at 2254 the generator was phased to the grid.

2-20 After an initial 24 hour soaking period, unit load increased to a level of 600 MWe, where it held steady until 2/26/76.

2-26 New N.R.C. Commitment to require a positive one P.S.I. differential from the drywell to the torus. (This would decrease the water level in the torus spider legs thereby lessening the water hammer effect of a blow down due to a L.O.C.A. It is suspected that a blow down with the water at its normal level, rather than at its anticipated 3 foot drop, would promote a reactive vertical upward movement resulting in damage to the torus structural support.) Drywell pressure is presently being held at approximately 1 PSIG & the torus pressure held at approximately 0.

2-26 (Continued)

A lock-up of the "B" feedwater regulating valve required an immediate load drop to 300 MWe. After repairs, a load increase was initiated, terminating at 600 MWe on 2-27. The unit held steady at this power level until 3-12-76.

3-12 With "B" recirc pump MG set scoop tube locked out, the IM's removed the controller. At this time the "A" scoop tube started to run back, but locked out with a 45 MWe drop. After load picked up to 600 MWe, the IM's cleaned the "A" Controller. Load remained steady at 600 MWe until 3-26.

3-26 Dropped unit load to 366 MWe and performed scram testing 50% of the core's control rod drives.

3-27 After the completion of scram testing, a load increase was initiated at 3 MWe/hr.

3-29 Load increase of 3 MWe/hr was still in progress when the reactor scrammed at 0446 due to the spurious speed spike of the reactor recirc pump. Precipitating a high power spike. After scram recovery, the reactor was brought critical at 1036 and was phased to the grid at 1500. Load was increased at the rate 3 MWe/hr to 600 MWe, where it will be held due to high off gas activity.

4-16 "B" recirc pump spiked downscale and created a pump mismatch with "A" recirc pump and an APRM high condition. After the "B" recirc pump MG set scoop tube was locked out, load pick-up began at the rate of 3 MWe/hr to 600 MWe.

4-24 "A" recirc pump MG set scoop tube was locked out. Both "A" and "B" are now in a locked out condition.

4-29 Began dropping load due to an over-pressurization of the offgas system. As conditions began to persist the decision was made to shut the unit down for repair and corrective action. At 1038 hours the generator was removed from the grid.

The unit remained shutdown for a period of 5 days, also during which time the seals of both reactor recirc pumps were replaced.

5-3 Reactor was brought critical at 1935.

5-4 After replacement of both "A" & "B" steam jet air ejector diaphragms in the off gas system, the generator was phased to the grid at 0715.

5-5 After a short soaking period, the unit began picking up load at 3 MWe/hr.

5-7 Load increase was terminated and a load drop was initiated to provide for surveillance testing at a reduced power level. After the completion of testing, load was again increased to 600 MWe and held, due to the "high off-gas activity" derating.

5-8 At approximately 1220, it was discovered that the low flow reg valve air operator had broken loose from its supports and was resting against a nearby beam. The valve was valved out and taken out of service; the air operator was roped off. The valve shaft was then replaced as well as three broken support bolts.

The failure of this valve was due to operational vibration. However, during the next refueling outage, snubbers will be installed on the feedwater line.

The safety related consequences of this failure were minimal, as the complete failure of the valve would have resulted in a reactor scram.

5-13 Reactor scrammed from power at 0914. The scram was due to a turbine trip precipitated by a moisture separator Hi Hi level condition. This condition resulted from "B" reactor recirc pump MG set spike and corresponding trip. IM's are checking the MG set's fluid coupler for problems.

5-14 Reactor was brought critical at 0553 and at 1546 the generator was phased to the grid. Unit power was increased to 600 MWe, where it leveled off due to the high offgas.

5-31 Unit is holding steady at 600 MWe.

6-4 Performed pre-op testing of "C" condensate booster pump after redesign of its impeller. Eventually, impellers in all four booster pumps will be resigned, per the same specifications, for conformity in flow. By trimming the outer diameter of the impeller vanes 1 inch, the redesign provides a smaller developed head and thereby a larger total possible flow.

6-9 Increased unit load to a new level of 650 MWe.

6-11 Dropped load to 355 MWe to establish a new rod pattern. After completing rod adjustment a load increase was initiated, with an expected termination of 600 MWe.

7-10 During the weekly surveillance test, #2 turbine control valve failed to show a closed indication. An investigation showed that the problem stemmed from a faulty test limit switch which was immediately replaced. The test switch does not affect the valve or RPS operability.

7-16 Dropped load to 350 MWe for the pre-op testing of "A" condensate/ booster pump after redesign of its impeller, and also due to 50% control rod scram testing. Both tests proved satisfactory. Unit 3 now has all booster pump impellers redesigned except "B" pump. Load increase was initiated, with an expected termination of 600 MWe.

7-17 Holding load steady at 600 MWe.

7-23 Load was dropping to 320 MWe for rod pattern adjustment, when an EHC oil leak to #2 turbine control valve was discovered.

7-24 Unit was removed from the grid at 1323 to contain the EHC oil leak. After repairs were completed, unit was brought critical at 2040.

7-25 Generator was phased to system grid at 0135. Load increase was held at 400 MWe for nuclear fuel evaluation.

7-26 Load increase of 3 MWe/hr was initiated, expecting to reach a maximum of 600 MWe.

7-28 Load holding steady at 600 MWe.

8-6 Dropped load to 390 MWe for pre-op testing of "B" condensate/ booster pump after redesign of its impeller. Load drop also enabled the nuclear group to adjust their rod pattern. Pre-op test proved satisfactory and there is now a full supplement of 4 pumps with the revised 23.5" impeller design. We can now operate with all possible pump combinations without being limited in total flow due to impeller design differences.

8-7 Load increase of 3 MWe/hr initiated, expecting to reach a maximum of 600 MWe.

8-10 Holding load steady at 600 MWe. The unit is still derated by 232 MWe due to high offgas activity.

8-13 Load increase is being initiated, upon recommendation by the nuclear group, to raise the level of power past its present operating limit of 600 MWe. By doing so, shortly before the refueling outage, the fuel failure possibility for fuel to be reused in the next fuel cycle will be lessened and also a more true signal will be received when sipping fuel during the refueling outage.

8-18 Holding load steady at 680 MWe.

8-23 Reactor scrammed from power at 1343 due to APRM Hi Hi condition. The condition was the end result of incorrect action taken by the operator in his attempt to drop load so that repairs could be made to the leaking inboard bearing of "C" reactor feed pump. The operator, in training at the time of the occurrence, did not dial in the speed correctly in his attempt to drop recirc flow. This caused a mismatch between demand speed and meter speed, while resetting the scoop tube and led to an APRM Hi Hi condition. At 1855 the reactor was brought critical and the generator was phased to the grid at 2227.

Began load increase at a rate of 3 MWe/hr.

8-25 Held increase at 515 MWe.

8-29 Due to excessive drywell leakage, unit load drop was initiated at 100 MWe/hr in preparation for Unit shutdown.

Unit was removed from the grid at 1125. Reactor remained in cold shutdown while entry into drywell was made for examination of leakage.

8-30 Although the hydro testing of "B" reactor recirc pump was inconclusive, the assumption was made that the pump seals were, in fact, failing.

8-31 "B" recirc pump seals were replaced and unit start-up commenced.

9-2 Reactor was brought critical at 0516, but scrammed at 0829 before going on line. Reactor was brought critical again at 1030 and the generator was phased to the grid at 2010.

9-3 The new reactor recirc pump seal purge system was initially placed into service. The purpose of this new system is two-fold: 1) To keep the recirculation pump seals clean by maintaining a clean flow of CRD water into the seal area; 2) To provide back-up cooling to seals upon loss of RBCCW cooling.

9-12 Found steam leak in moisture separator drain tank 3B drain line. An accumulation of 3" of water was found on hotwell floor. Started dropping load at 100 MWe/hr in preparation for unit shutdown.

9-13 Unit was removed from the grid at 0355, holding in hot standby.

9-14 Generator was phased to the grid at 0404.

9-16 After load increase, the unit held steady at a power level of 600 MWe.

9-19 Generator separated from the grid at 2243 for Unit 3's 4th scheduled refueling outage.

9-20 Reactor mode switch locked in shutdown. Disassembly of reactor internals is now in progress.

9-21 Detensioning of reactor head complete. Reactor vessel safety valves are presently being replaced.

9-22 After filling the vessel cavity, the reactor head and steam dryer were removed and stored in their respective storage areas.

9-23 Removed steam separator and stored in pit. Began feedwater sparger inspection.

9-24 Reactor mode in refuel. Removal of fuel assemblies has begun.

9-29 All fuel assemblies have been removed from the reactor vessel.

9-30 Sipping of fuel and CRD replacement in progress.

10-2 CRD replacement complete except for "E-9" removal. This has become a special project since it was discovered during the last Unit 3 refueling outage that CRD #E-9 could not be removed.

10-6 CRD #E-9 was removed from the reactor vessel.

10-10 Fuel sipping has been completed. 25 leakers were found.

10-14 Loading of the fuel assemblies into the core has begun.

10-20 Loading of all fuel assemblies into the core as well as their verification is complete.

10-27 Steam dryer and separator locked in place. Reactor wall washing in progress.

11-8 Reactor was brought critical at 0325 and held as such, after two prior critical attempts.

11-9 Generator was phased to the grid at 0351, ending the unit's 4th refueling outage.

At 0459, the reactor scrammed from power due to turbine trip on moisture separator Hi Hi level.

The reactor was brought critical at 0957 and the generator was phased to the grid at 1844.

11-12 After fuel soaking period and rod pattern adjustments, the unit load was allowed to increase at a preconditioning rate of 3 MWe/hr.

11-30 Unit 3 ended the month, holding steady at 804 MWe.

12-31 Unit 3 ended the month holding steady at 814 MWe, only dropping load for periodic surveillance testing. The unit was derated from its maximum capability due to the electrical and mechanical stops of the reactor recirc pumps.

AMENDMENTS TO FACILITY LICENSE

DPR-25 (UNIT 3) OR ASSOCIATED

TECHNICAL SPECIFICATIONS

AMENDMENT #11

On January 15, 1976, the Nuclear Regulatory Commission issued Amendment #11 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Sections 3.3.A.2 and 4.3.A.2 Reactivity Margin - Inoperable Control Rods.

AMENDMENT #12

On February 25, 1976, the Nuclear Regulatory Commission issued Amendment #12 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Section 1.0 Definitions. Page 1 was changed.

2) Revision of Section 1.0 Definitions. Changed surveillance intervals, paragraph cc.

3) Revision of Table 3.1.1 Reactor Protection System (Scram) Instrumentation Requirements. Changed requirements for following trip functions: 1) Turbine Condenser Low Vacuum; 2) Main Steamline High Radiation.

4) Revision of Bases 3.1. Changed requirement for scram due to "High Radioactivity in Main Steamline Tunnel".

5) Revision of Section 3.3.E Reactivity Anomalies. Changed description of reporting requirements to the N.R.C..

6) Revision of Section 6.1.G.1.a.4 Offsite Review and Investigative Function. Changed description of reporting requirements to the N.R.C..

7) Revision of Section 6.3 Action To Be Taken in the Event of a Reportable Occurrence in a Plant Operation.

AMENDMENT #13

On February 26, 1976, the Nuclear Regulatory Commission issued Amendment #13 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

AMENDMENT #13 (Continued)

1) Revision of Section 3.6.F, page 91a, Structural Integrity has been superceded by the revision per Amendment #25 (effective November 19, 1976).

2) Revision of Bases 3.6 paragraph H Recirculation Pump Flow Match. Stated restriction of "Single Recirc Loop" operation.

AMENDMENT #14

On May 12, 1976, the Nuclear Regulatory Commission issued Amendment #14 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Insertion of new Sections 3.11 and 4.11 High Energy Piping Integrity.

2) Addition of Table 4.11-1 Surveillance Requirements for High Energy Piping Outside Containment.

3) Addition of Bases for High Energy Piping Integrity.

AMENDMENT #15

On November 17, 1976, the Nuclear Regulatory Commission issued Amendment #15 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Sections 3.7.B and 4.7.B Standby Gas Treatment System. The revisions covered changes in Operating Limits and Surveillance Requirements for Standby Gas.

2) Revision of Bases 3.7.C and 4.7.B for the Standby Gas Treatment System.

AMENDMENT #16

On May 24, 1976, the Nuclear Regulatory Commission issued Amendment #16 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Table 3.7.1 Primary Containment Isolation. This changed the valving description per the nitrogen make-up system.

AMENDMENT #17

On May 4, 1976, the Nuclear Regulatory Commission issued Amendment #17 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment:

AMENDMENT #17 (Continued)

1) Revision of Section 4.3.C Scram Insertion Times. This deleted the requirement for 25 rod scram testing.

AMENDMENT #18

On June 9, 1976, the Nuclear Regulatory Commission issued Amendment #18 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Section 3.5.F.5 Minimum Core and Containment Cooling System Availability. This change covered the coolant availability requirements when irradiated fuel is in the reactor and the vessel head is removed.

2) Revision of Bases 3.5.F for emergency cooling availability. This change corresponds to the revision of Section 3.5.F.5.

3) Revision of Section 3.7.A.1 Primary Containment. This change covered the requirements for emergency core cooling.

AMENDMENT #19

On June 3 1976, the Nuclear Regulatory Commission issued Amendment #19 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Added Sections 3.10.F and 4.10.F Spent Fuel Cask Handling. This change covered the New Requirements for handling of the fuel cask in regards to the reactor building crane.

2) Added Bases 3.10.F, covering new requirements for fuel cask handling.

AMENDMENT #20

On August 9, 1976, the Nuclear Regulatory Commission issued Amendment #20 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Revision of Sections 3.7.D and 4.7.D Primary Containment Isolation Valves. These changes include the operation restriction and surveillance when any main steamline air pilot valve exceeds a temperature of 170°F.

AMENDMENT #21

On September 3, 1976, the Nuclear Regulatory Commission issued Amendment #21 to the Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Addition of Section 3.8.F Miscellaneous Radioactive Source Leakage Test. This new section provides for (a) leakage testing of the sources, (b) establishment of surveillance requirement for the tests, and (c) retention of test results.

2) Addition of Bases 3.8.F Miscellaneous Radioactive Material Sources. Stating the objectives of the specification.

3) Revision of Section 6.5 Plant Operating Records. This change adds the leakage test results to the proper log and record for review.

4) Revision of Table 6.6.1 Special Reports. This change adds "Radioactive Source Leak Testing" as an integral part of the Station Annual Report (to NRC).

AMENDMENT #22

On September 29, 1976, the Nuclear Regulatory Commission issued Amendment #22 to Dresden Facility License No. DPR-25. The following is a list of the changes in the Technical Specifications per the incorporation of this amendment.

1) Addition of Sections 3.6.I and 4.6.I Shock Suppressors (Snubbers). This new section describes the plant requirement after snubber failures and snubber surveillance requirements.

2) Addition of Table 3.6.1 Safety Related Shock Suppressors. This new table lists all the safety related snubbers that are to be tested for possible inoperability.

AMENDMENT #23

On November 4, 1976, the Nuclear Regulatory Commission issued Amendment #23 to Dresden Facility License No. DPR-25. The following is a list of changes in the Facility License and Technical Specifications per the incorporation of this amendment.

1) Revision of Paragraph "E" of the Facility License, covering Restrictions. This change involved reactor power level limitation during a pressure transient.

AMENDMENT #23 (Continued)

2) Revision of Bases 2.2 for Reactor Coolant System. The change includes revised pressure estimates within the [illegible] during a worst case pressurization transient.

3) Revision of Sections 3.5.I, 3.5.J, and 3.5.K - Local Linear Heat Generation Rate and Minimum Critical Power Ratio. These changes cover the initiated action taken if limits are exceeded.

AMENDMENT #24

On November 15, 1976, the Nuclear Regulatory Commission issued Amendment #24 to Dresden Facility License No. DPR-25. The following is a list of changes in the Technical Specifications per the incorporation of this amendment.

1) Corrected MCPR Limits issued by Amendment No. 23, Operation Section and Bases 3.5.K Minimum Critical Power Ratio (MCPR).

AMENDMENT #25

On November 19, 1976, the Nuclear Regulatory Commission issued Amendment #25 to Dresden Facility License No. DPR-25. The following is a list of changes in the Technical Specifications per the incorporation of this amendment.

1) Revisions of Section and Bases 3.6.F Structural Integrity of Primary System Boundary. This change included the application of the Summer 1975 Addenda, ASME Code Section XI.

UNIT 3

FACILITY OR PROCEDURE CHANGES REQUIRING NRC APPROVAL

There were no facility or procedure changes during the report year that required prior approval by the Nuclear Regulatory Commission.

UNIT 3

TESTS AND EXPERIMENTS REQUIRING NRC APPROVAL

There were no test or experiments during the report year that required prior approval by the Nuclear Regulatory Commission.

UNIT 3

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION NO. M-12-3-72-96

Post Accident Drywell Sampling

This change involved the installation of a switch to bypass the isolation signal to the dyrwell sample valves. The bypass switch is necessary to allow drywell sampling under post accident conditions. Administrative control is maintained by using a key locked switch.

The safety evaluation stated that this modification would affect the system as previously reviewed, however, the consequence of such an accident would not increase. A Technical Specification change and FSAR modification were approved for this installation.

MODIFICATION NO. M-12-3-73-190

Containment Cooling Service Water Pump Coolers

This change involved the installation of containment cooling service water pump coolers. The addition of these coolers was required by the flood protection modification which required the pumps to be enclosed in a concrete vault.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-73-192

Installation Of 3/4" Test Connection
On Line 3-1603-18"LX

This change is required to facilitate leak testing of valves 1601-60, 1601-62, 1601-61 and 1601-23.

The safety evaluation stated that the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-8

Installation Of 1/2" Valve To Allow For Local Leak Rate Testing

This change involves the installation of the 1/2" valve for low point draining between valves 0301-99 and 0301-98 on line 0308-4 in order to run leak rate checks.

The safety evaluation stated that this proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-124

TIP Detector Shield Limit Switches

This change involved the replacement of the mechanical limit switches on the TIP drive system with magnetic proximity switches. The TIP detectors, on several occassions, have been damaged beyond repair because malfunctioning mechanical switches allowed the detector to withdraw into the drive gear. The magnetic switches should reduce the probability of damage to the detector.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would eliminate the previous maintenance and repair problems.

MODIFICATION NO. M-12-3-74-125

LPCI Logic Reset Push Buttons

This change involved the installation of two momentary open push buttons for relays 197 and 297. This addition, conforming to applicable manufacturing and seismic requirements, allows the LPCI loop selection logic to be reset from panel 902-46. Previous arrangement required manual operation of the relay contacts to reset the system.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-143

Replacement Of HPCI Thermoswitches With
More Reliable Type Sensors

This change involves the replacement of the existing Fenwal thermoswitches with the thermocouple type. The thermocouple type has proved to be much more reliable in its operation and also provides easier verification of proper operation.

The safety evaluation stated that any failure of these new switches would be no more severe than the failure of the replaced switches. In fact, the new switches would provide a more reliable operation.

MODIFICATION NO. M-12-3-74-146

HPCI Steam Line High Flow Switch

This change involved the replacement of the HPCI steam line high flow isolation differential pressure unit with a comparable unit of a different range. Reduction of the units range from 400 inches to 200 inches increased the setpoint and indication accuracy. The setpoint value was shifted from 36% of full scale to a more useful 72%.

MODIFICATION NO. M-12-3-74-146 (Continued)

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-147

Core Spray Minimum Flow Switch

This change involved the replacement of the core spray minimum flow switch with a comparable unit of a different range. The previous instruments' range was 0-400 inches of water and its setpoint was 7 inches of water decreasing. An alarm setpoint change to a value of 3 inches of water dictated that the instrument be replaced with one with a 0-20 inch range to allow reliable and accurate setpoint adjustment with more error-free indication.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-150

Recirculation Pump Differential Pressure Switch

This change involved the replacement of the recirculation pump differential pressure switch bellows assemblies and indicator scales. The original 0-60 PSID equipment was replaced with comparable 0-6 PSID equipment to increase the sensitivity and accuracy about the 2 PSID setpoint.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-154

Installation Of Second Torus Level Alarm Indication

This change covers the installation of a completely independent indicating system, consisting of a level transmitter to provide another alarm circuit with annunciator in the control room. The reason for the second level alarm circuit is because the existing torus level instrumentation was too high of a water level range to maintain the level of accuracy required.

The safety evaluation stated that no new safety questions had been created because the taps into the torus for level indication were made in existing instrument lines.

MODIFICATION NO. M-12-3-74-155

Relocation Of Temperature Sensor To The Bottom
Of The 18" Nitrogen Inerting Line

This change involves the relocation of the subject temperature switch to the bottom of nitrogen inerting pipe 3-8506-18"LX. This will give a more reliable determination of whether or not liquid nitrogren is entering the line.

The safety evaluation stated that this proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-163

HPCI Speed Changer Power Supply

This change involved the rewiring of the HPCI speed changer to eliminate a potential source of equipment damage. With the original wiring arrangement, when the HPCI logic system power supply was deenergized for maintenance, the associated relays' "B" contacts provided a continuous decrease signal to the speed changer motor. The present wiring arrangement guarantees that when the logic system is defused the power supply to the speed changer field is also interrupted.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-74-165

Provide Testable Penetrations For
Drywell Personnel Air Lock

This change involved the installation of seal points necessary to provide testable penetrations for lighting and communications in the personnel air lock. During a recent integrated primary containment leak rate test, there was excessive leakage through the existing telephone and lighting conduit due to inadequate seal arrangement.

The safety evaluation stated that this modification would in fact enable us to perform more accurate leak rate testing.

MODIFICATION NO. M-12-3-74-175

Replacement Of X-Area Thermoswitches
With More Reliable Type Sensors

This change involves the replacement of the existing Fenwal thermoswitches with United Electric type F7 Model 76B temperature switches. The latter has proved to be much more accurate and reliable. Because these switches actuate MSL isolation, this is very important.

MODIFICATION NO. M-12-3-74-175 (Continued)

The safety evaluation stated that any failure of these new switches would be no more servere than the failure of the replaced switches. In fact, the new switches would provide a more reliable operation.

MODIFICATION NO. M-12-3-75-1

General Electric Type MC4.76 4KV Switchgear

This change involved the inspection of all G.E. 4KV switchgear for improper bolt tightness and for oversized roller trip bars. New bolt retainers were used to correct bolt problems. Oversized roller trip bars produced more frequent occurrences of the breaker tripping free following a closing operation and of the auxiliary contacts failing to close properly. The proper size roller trip bars were installed.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-75-55

Separate Feeds To MSL Drain And
Reactor Head Cooling Valves

This change involved the installation of non-fused individual disconnects at local starter panel 28-1-1. The original system used a gang type feed for the MSL drain and the reactor head cooling valves, severely restricting flexibility during refueling. The newly installed disconnects allow feed to the individual motor contactors to be separated.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would increase system flexibility.

MODIFICATION NO. M-12-3-75-56

Diesel Generator Fuel Oil Transfer Pump

This change involved the installation of a local start switch for the #3 emergency diesel oil transfer pump. The low level float switch on the diesel generator fuel oil day tank provided functional control of the transfer pump. This system was not modified, but a parallel switch network was added to allow the operator to perform the transfer pump operability tests required in the diesel generator surveillance procedures.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-75-64

Scram Solenoid Lights

This change involved the installation of an additional set of scram solenoid lights in parallel with the existing scram solenoids and scram solenoid lights. Prior to this change, during the monthly surveillance of the scram instrumentation, a half scram condition was initiated by an instrument mechanic and the front panel scram signal light condition was observed by the operator. The newly installed rear panel scram lights allow the instrument mechanic to personally observe the initiating half-scram condition and to verify that the signal was cleared before continuing.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-75-66

Installation Of Additional Acoustic Sensors
On The Feedwater Lines

This change involves the installation of one acoustic sensor per each of the four feedwater lines, to supplement the existing two acoustic sensors per line. The new additional sensor will enable a flaw locator unit to pinpoint the location of signals originating between any two adjacent feedwater nozzles.

The safety evaluation stated that the proposed change does not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-75-67

Stem Modification Of LPCI Heat Exchanger
Service Water Outlet Valve

This change involved the replacement of the existing 3/4" diameter stems in the subject valves with new 1" diameter stems of the same material but chrome plated. This replacement should eliminate the stem bending that occurred, with the chrome plating reducing corrosion and abrasion.

The safety evaluation stated that this replacement will in fact improve the reliability of the CCSW subsystem.

MODIFICATION NO. M-12-3-75-72

Conversion Of D/W Pneumatic Supply Solenoid
Valves From Resilient To "Metal To Metal" Seating

This change covered the conversion of the subject solenoid valves from resilient seating to "metal to metal" seating. This was

MODIFICATION NO. M-12-3-75-72 (Continued)

necessary due to the high failure history of resilient type through rubber aging. The "metal to metal" type contact should be more reliable and require less maintenance.

The safety evaluation stated that as a result of this conversion, the margin of safety should increase through increased reliability.

MODIFICATION NO. M-12-3-75-73

Acoustical Monitoring Of Recirc Bypass Line

This change involved the installation of transducers on the Dresden 3 Recirculation By-Pass Piping to provide acoustic emission signals to monitoring and recording equipment. The acoustic emission data would be correlated with ultrasonic testing results should a crack actually appear. This project would be strictly developmental and no action on station operation would be required by the N.R.C. based on signal data alone.

The safety evaluation stated that the addition of the acoustic monitoring system does not change the safety analysis of the recirc system and that its loss would not effect any safety system in the station.

MODIFICATION NO. M-12-3-75-79

MSL High Flow Sensor Isolation Valves

This change involved the installation of an isolation valve on the main steam line high flow sensor high side test tap. Following testing of the sensor, it was returned to service by valving it to main steam line pressure. The approximately 900 PSI transient could produce a "jolting" affect that would initiate a scram. The isolation valve installed by this change allows the sensor to be pressurized from an external source prior to being returned to service. The potential for an inadvertent scram is thus greatly reduced.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would prevent unnecessary protective system trips.

MODIFICATION NO. M-12-3-75-80

Replacement Of Isolation Valves On
The Reactor High Pressure Scram Sensors

This change involves the replacement of the existing subject valves with new needle valves. This new valve will reduce the sensing

MODIFICATION NO. M-12-3-75-80 (Continued)

of line transients during valving operations which will, in turn, decrease the possibility of a scram during valving operations.

The safety evaluation states the possiblity of an accident will be the same with needle valve as with the replaced valve.

MODIFICATION NO. M-12-3-75-100

Intermediate Range Monitor (IRM) Amplifier

This change involved the updating of several resistors and the addition of high permeability ceramic beads to the base of several transistors. The original IRM amplifier attenuator module had a potential for parasitic oscillations due to small variances in transistor characteristics causing circuit imbalances when the transistors became "hot". The addition of the high permeability ceramic beads will prohibit unwanted oscillations, improve circuit stability, and, with the updated resistor values, provide a more acceptable gain factor.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question and would improve IRM stability.

MODIFICATION NO. M-12-3-76-24

Torus Support Column Sway Rod Wing Plate

This change involved removing a section from the outside torus support columns' wing plates. The wing plates transfer the seismic tie rod force to the base plates. The removal of a slot shaped piece from these plates did not affect their function since the wing plates were not limiting to the support column design and the slots were made in a low stress area. The as-modified equipment satisfies all of the original design criteria and will now allow the use of a lifting bar which is required to determine column loads.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-76-31

Containment Cooling Service Water (CCSW) Vault Doors

The change involved the providing of a watertight enclosure on the CCSW pump side of the vault's submarine door to allow required leak testing to be performed with all personnel outside the vault. The advantage of this arrangement is the ability to inspect the door during the pressurization and make any needed repairs without removing the test plate.

MODIFICATION NO. M-12-3-76-31 (Continued)

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-76-34

Change Overload Heaters On Various Valve Motors In Clean-Up, Isolation Condenser, Core Spray And LPCI Systems

This change covered the replacement of valve motor overload heaters to a larger size. This was done to lessen the amount of nuisance trips which had been occurring within the subject systems.

The safety evaluation stated that the replacement of overload heaters would in no way effect the logic for operating the valve.

MODIFICATION NO. M-12-3-76-53

Outer Torus Support Column Base Pins

This change involved the removal of up to .375" from the top surface of selected base pin. Since pin bearing area establishes the ultimate strength of a connection, the capacity of the pin/clevis support connection is not affected. The removal of this material was required to provide access for the lifting bar used in the process of column weighing and balancing.

The safety evaluation concluded the proposed change did not constitute an unreviewed safety question.

MODIFICATION NO. M-12-3-76-55

Reinstallation Of Old Type Diesel Generator Cooling Water Pump

This change involved the installation of a temporary non-submersible type pump in place of the submersible pump, which had been damaged and could not be repaired within the 7-day limit. This was a short term installation pending receiving the new pump.

The safety evaluation stated that the operability requirements for the diesel generator remains the same, with the non-submersible type cooling water pump. Should the cribhouse flood, which is where the pump is located, Unit 3 would be shut down immediately.

MODIFICATION NO. M-12-3-76-61

Removal Of HPCI "Peeco" Flow Switch

This change involved the removal of the switch due to the numerous problems it presented.

This action does not propose any degradations in operation or safety because low cooling water flow can be detected by other means and even if gland seal cooling water was lost, it would not effect HPCI operation.

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
U-3 Main Steam Safety Valve 3-203-B	Preventive WR-4408		N.A.	N.A.	Lapped seats
U-3 Main Steam Safety Valve 3-203-C	Preventive WR-4409		N.A.	N.A.	Cleaned & relapped seats
U-3 Main Steam Safety Valve 3-203-A	Preventive WR-4407		N.A.	N.A.	Adjusted & reset valve
U-3 Main Steam Safety Valve 3-203-D	Preventive WR-4410		N.A.	N.A.	Cleaned & lapped valves
U-3 Rx. Dryer Separator	Preventive WR-7502		N.A.	N.A.	Install dryer separator
Recirc. Disch. Bypass MO-3-0202-7 B	Preventive WR-9633		N.A.	N.A.	Replace operator bonnet boits
MSIV Limit Sw. 3-203-2A	Preventive WR-10665		N.A.	N.A.	Checked r lays & limit switches
1A - MSIV 3-203-1A	Corrective WR-12045		Loose Air Supply Line	Air Leak On Line To Pilot Assembly	Tighten air inlet pipe
MSIV - 2B Limit Switch	Corrective WR-12248		Screw On Switch Shaft Was Loose	Switch Limit Not Operating	Adjust limit & tighten screw
MSL Flow Indicator 3-D-261-2-5	Corrective WR-12152		Improper Meter Setting	Two Indicators Reading Diff. Valves	Equalized & recalibrated meter & checked switch

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
"A" Recirc. Pump #1 Seal Cavity Press. Transmitter	Preventive WR-467		N.A.	N.A.	Made test on check valve holding ability
MSIV 10% Limit AO-203-2C	Corrective WR-2482	Outage #3-4	Limit Switch Calibration	Test 1600-S-1 Went Greater Than 10%	Tested limit switch operated satisfactory
MSIV 10% Limit AO-203-2A	Corrective WR-2483	Outage #3-4	Limit Switch Adjustment	In Test 1600-S-1 Had To Hold Button To Get 10%	Limit switch adjusted
MSIV 10% Limit AO-203-2D	Corrective WR-2484	Outage #3-4	Undetermined	Test 1600-S-1 Greater Than 10%	Checked 3 times seems to work properly
Drywell Snubbers	Preventive WR-3709	Outage #3-4	N.A.	N.A.	Refill snubbers needing oil also replaced worn zerk
Reactor Recirc. Pump 3A-202	Preventive WR-3731	Outage #3-4	N.A.	N.A.	Replaced seals in #1 & #2 cavities
Reactor Recirc. Pump 3B-202	Preventive WR-3803	Outage #3-4	N.A.	N.A.	Replace spare seal and O-rings
MSIV 203-1A	Corrective WR-3849	Outage #3-4	Normal Operations	Timing Wrong It Is 5.5 sec.	Timing is adjusted to 4.8 seconds
Electromatic Relief Valve 3-203-3D	Corrective WR-4172	Outage #3-5	Worn Gasket Dirty Valve Body	Valve Leaked By	Valve cleaned & new disc valve & gasket installed
Recirc System Valve MO 202-9B	Preventive WR-4685	Outage #3-10	N.A.	N.A.	Replaced limitorque operator and set limits per worm gear replacement program

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Recirc System Valve MO-202-9A	Preventive WR-4686	Outage #3-10	N.A.	N.A.	Replaced limitorque operator & checked limits per worm gear program
Recirc System Valve MO-202-7B	Preventive WR-4687	Outage #3-10	N.A.	N.A.	Replaced limitorque operator & set limits per worm gear program
Recirc System Valve MO-202-7A	Preventive WR-4688	Outage #3-10	N.A.	N.A.	Replaced limitorque operator & set limits per worm gear program
MSL Drain Valve MO-220-1	Preventive WR-4689		N.A.	N.A.	Change limitorque operator and adjust limits per worm gear program
Rx. Head "O" Ring Leak Off Volume Chamber LS3-261-19	Corrective WR-8870	Outage #3-10	Loose Connection To Chamber	Valve Leaking From Top Of Chamber At 1000 PSIG Hydro	Retighten connection
Rx. Vessel Cont. Room Yarway 3-263-100A	Corrective WR-5077		Bad Electrical Connections	Level Indic. Periodically Drops Down Scale	Cleared electrical connections
Target Rock Safety Valve 3-203-4A	Preventive WR-5710	Outage #3-10	N.A.	N.A.	Entire valve & air operator replaced
B Recirc. Pump	Preventive WR-5447		N.A.	N.A.	Replaced "O" rings and checked for proper oper.
Target Rock Relief Valve	Corrective WR-8867	Outage #3-10	Loose Studs	Valve Fitting Leaked	Tightened studs
Electromatic Relief Valve "D"	Preventive WR-5605	Outage #3-10	N.A.	N.A.	New internals installed in valve; seal ring in lower plug changed.

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Reactor Head & Vent Line	Preventive WR-5976	Outage #3-10	N.A.	N.A.	Install reactor head & vent lines
Drywell Cover & Shield Blocks	Preventive WR-5969	Outage #3-10	N.A.	N.A.	Install drywell cover & shield blocks
Separator & Dryer	Preventive WR-5975	Outage #3-10	N.A.	N.A.	Install separator & dryer
Electromatic Relief Valve "B"	Preventive WR-6033	Outage #3-8	N.A.	N.A.	Replaced pilot valve assembly
Safety Valves 4E,4F,4G,4H	Preventive WR-6035	Outage #3-10	N.A.	N.A.	Installed new safety valves & gaskets
Recirc. Pump A	Preventive WR-6236		N.A.	N.A.	Replace #1 seal
Main Steam Line Drain Valve MO-3-220-1	Corrective WR-7151	Outage #3-8	Worn Packing	Valve Leaks	Repacked valve
MSIV 3-202-2B	Corrective WR-7253	LER #50-249/1976	Limit Actuator Arm Not Tight	Valve Not Closing	Tightened arm & adjusted limits
Target Rock Valve 3-203-3A	Corrective WR-7291	Outage #3-10	Faulty Amphenol Connector	Spurious Alarm On Valve	Replaced amphenol connector
Recirc. Loop Valve MO-3-0202-4A	Preventive WR-7545	Outage #3-10	N.A.	N.A.	Replace valve packing
Feedwater Check Valve 3-220-62A	Corrective WR-7732	Outage #3-10	Dirt In Valve Seat	Valve Leaked	Installed new clapper, O-ring, & seal ring

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Main Steam Line Drain Valve 3-220-1	Corrective WR-7786	Outage #3-10 LER #50-249/1976-20	Worn Seal Ring Surface	Valve Has Bonnet To Body Leak	Honed seal ring surface & installed new seal ring
Fuel Support Piece	Preventive WR-8158	Outage #3-10	N.A.	N.A.	Weld flow orifice to new fuel support piece
Feedwater Check Valve 3-220-58B	Corrective WR-8254	Outage #3-10 LER #50-249/1976-25	Dirt In Valve	Valve Did Not Check	Flushed check valve
Feedwater Check Valve 3-220-62B	Corrective WR-8255	Outage #3-10 LER #50-249/1976-25	Worn Internals	Valve Did Not Check	Replaced flapper assembly & seal ring
MOV 220-1 Motor	Corrective WR-8272	Outage #3-10	Burnt Out Motor	Valve Will Not Operate	Had motor rewound & replaced it
Instrument Line Check Valve 3-263-246	Corrective WR-8424	Outage #3-10	Worn Seal	Valve Leaked	Replaced poppet & spring
Recirc. System Special Signal Alarm Units 3-262-40 & 3-262-42A & B	Preventive WR-8686	Outage #3-10	N.A.	N.A.	Changed some current settings for mismatch trip
Head Spray Check Valve 3-205-2-7	Corrective WR-8840	Outage #3-10 LER #50-249/1976-31	Worn Valve	Valve Failed Leak Rate Test	Valve lapped & reassembled
Recirc. Pump Disch. Bypass Valve MO-3-202-7A	Corrective WR-8864	Outage #3-10	Pinched Wire	Valve Kept Tripping Breaker	Repaired pinched wire

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Fuel Pool Grapple Limit Switches	Preventive WR-8805	Outage #3-10	N.A.	N.A.	Replaced limit switches & cleared jumper log
Electromatic Relief Valve 3-203-3E	Corrective WR-8902	Outage #3-10	Limit Switch Adjustment	Valve Failed To Operate	Reset limit switch
MSIV 203-2B	Corrective WR-8930	Outage #3-10	Tight Packing	To Long Of Time To Close	Repacked valve
Rx. Recirc. Pump Disch. Valve MO 202-5A & B	Corrective WR-8868	Outage #3-10	Worn Packings	Failed Hydro Test	Repacked valve
MSL Drain Valve MO-3-220-1	Corrective WR-8945	Outage #3-10 LER #50-249/1976-20	Worn Seat	Failed Leak Test	Lapped valve seat
Inst. Flow Check Valves 3-220-67A,B,C 3-263-2-31B,E,C,H	Preventive WR-8952	Outage #3-10	N.A.	N.A.	Inspected & verified flow as required
Reactor Seal Ring Hi Level Alarm	Corrective WR-9806	Outage #3-10	Air Operated Valves Had Bad diaphragms	Could Not Drain To Check Leakage Rate	Replaced diaphragm & O-ring in valve
Control Rod Drive Hdr. Stop Valve	Preventive WR-95		N.A.	N.A.	Lapped valve
Cont. Rod Drive RPIS Probes	Preventive WR-5229		N.A.	N.A.	Removed and reinstalled CRD probes for CRD overhaul work

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Control Rod Drive Scram Inlet Valve 58-35	Corrective WR-9137		Out of Adjustment	Drive Drifted In	Adjusted valve
CRD Scram Air Header Pressure Switch 302-81	Corrective WR-9251		Pressure Switch Calibration	Alarms Are Off Set Point	Recalibrated
CRD Control System	Corrective WR-10154		Undetermined Suspect Dirty Contacts	Could Not Select Any Rods In Upper Half of Core	Problem cleared itself up. Ability to scram not affected.
CRD Accumulator 18-47	Preventive WR-10501		N.A.	N.A.	Replace connector cap
CRD Accumulator 14-31	Preventive WR-6091		N.A.	N.A.	Ground out #113 valve & replace with new 1/2" #950 Hancock gate valve
CRD Accumulator 26-31	Corrective WR-7387		Bad Valve	Valve Leaked Through	Replaced 113 valve with valve supplied
CRD Accumulator Pressure Switch 38-39	Corrective WR-8552		Switch Sticking	Pressure Switch Alarms At Wrong Pressure	Cleaned switch verified alarm & reset switch
Scram Discharge Volume Level Switch LS3-302-82A through F	Preventive WR-11082		N.A.	N.A.	Checked all valves, repaired bent stem
CRD Accumulator 42-39	Corrective WR-11948		Bad Accumulator Piston Rings	Water Getting In N_2 Side	Replace accumulator

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator 34-55	Corrective WR-12266		Faulty Cap	N_2 Fill Cap Leaking	Replaced fill cap
CRD Accumulator 26-03	Corrective WR-12401		Switch Tripping Too High	Low Pressure Alarm Will Not Clear	Checked gage and reset switch
CRD Accumulator 14-31	Corrective WR-12580		Bad Piston Rings	Blew Down 4 Times	Replaced accumulator
CRD Accumulator 14-11	Corrective WR-12657		N_2 Packing Leak	Get Alarm	Repacked accumulator
CRD Accumulator 22-43	Corrective WR-12659		Bad Accumulator Piston Rings	Hi Water Alarm Coming Up 2 to 3 Times A Shift	Replaced accumulator
Spare CRD Accumulator SN-A-2959	Preventive WR-12777		N.A.	N.A.	Worn beyond repair and destroyed
CRD Accumulator 22-43	Corrective WR-12780		Worn Fittings	N_2 Leaks at Cap & Bottom of Tank	Lapped connector & installed teflon tape on fitting
CRD Accumulator 14-11	Corrective WR-8		Worn Fittings	N_2 Cap Leaks	Lapped connector & checked connection with "snoop"
CRD Accumulator 22-51	Corrective WR-33		Worn Cap	N_2 Cap Leaks	Lapped in cap
CRD 38-47 Scram Solenoid	Corrective WR-89		Bad Solder Joint	Scram Solenoid Is In Deenergized Position	Repaired solder joint

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD 38-51 Scram Solenoid	Corrective WR-90		Bad Solder Joint	Solenoid Remains In Deenergized State	Repaired solder joint
Rod Scram Switches on 903-16 Panel	Preventive WR-338	Outage #3-10	N.A.	N.A.	Tested all solder joints for continuity
CRD Accumulator 30-51	Corrective WR-1200		Bad Packing	N_2 Valve Leaking	Repacked valve
CRD Accumulator 42-07	Corrective WR-1684		Bad Cap	N_2 Leak	Lapped connection to new cap
Spa· CRD S/N .90	Preventive WR-3589	Outage #3-4	N.A.	N.A.	Overhauled unit
Spare CRD S/N #883	Preventive WR-3590	Outage #3-4	N.A.	N.A.	Overhauled unit
Spare CRD S/N #1032	Preventive WR-3591	Outage #3-4	N.A.	N.A.	Overhauled unit
Spare CRD S/N #1213	Preventive WR-3592	Outage #3-4	N.A.	N.A.	Overhauled unit
Spare CRD S/N #815	Preventive WR-3593	Outage #3-4	N.A.	N.A.	During overhaul drive found unacceptable and destroyed
Spare CRD S/N #1099	Preventive WR-3594	Outage #3-4	N.A.	N.A.	Drive overhauled
Spare CRD S/N #1008	Preventive WR-3595	Outage #3-4	N.A.	N.A.	Drive overhauled

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Spare CRD S/N #973	Preventive WR-3596	Outage #3-4	N.A.	N.A.	Drive overhauled
Spare CRD S/N #760	Preventive WR-3597	Outage #3-4	N.A.	N.A.	Drive overhauled
Spare CRD S/N #229A	Preventive WR-3598	Outage #3-4	N.A.	N.A.	Drive overhauled
Spare CRD S/N #427	Preventive WR-3599	Outage #3-4	N.A.	N.A.	Drive overhauled
Reactor Manual Control (Rod Movement) Switch	Corrective WR-3657	Outage #3-4	Dirty Switch Contacts	Sticks In Rod Movement Positions	Cleaned switch contacts
Rod Select Switches Panel 903-5	Preventive WR-3772	Outage #3-10	N.A.	N.A.	Checked all solder joints
CRD Accumulator 18-19	Corrective WR-4236		Worn Cap	N_2 Block Cap Leaks	Cleaned cap & connector
CRD Accumulator 18-47	Corrective WR-4656	Outage #3-10	Worn Valve	Charging H_2O Leaking Through	Replaced charging valve #113
CRD Accumulator 18-11	Corrective WR-4745		Worn Cap	N_2 Leak	Replace cap
CRD Accumulator Press. Switches 3-305-130 177 Completed	Preventive WR-4978	Outage #3-10	N.A.	N.A.	Calibrated & readjusted as needed
CRD Accumulator 14-11	Corrective WR-5000	Outage #3-10	Worn Valve	Charging H_2O Leaking Through	Replaced charging valve #113

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Scram Disch. Volume Vents & Drain SO3-0302-18	Corrective WR-6743	Outage #3-8	Port In Solenoid Not Switching	Valve Will Not Close	Checked solenoid worked properly
CRD #1835	Preventive WR-6815	Outage #3-10	N.A.	N.A.	Replaced drive with rebuilt #1055
CRD N-9	Preventive WR-6816	Outage #3-10	N.A.	N.A.	Replaced drive
CRD #1048	Preventive WR-6817	Outage #3-10	N.A.	N.A.	Replaced drive with #6402
CRD #1055	Preventive WR-6818	Outage #3-10	N.A.	N.A.	Replaced drive with #537C
CRD #5461	Preventive WR-6819	Outage #3-10	N.A.	N.A.	Replaced drive with #6317
CRD #856	Preventive WR-6820	Outage #3-10	N.A.	N.A.	Replaced drive with #6421
CRD #895	Preventive WR-6821	Outage #3-10	N.A.	N.A.	Replaced drive with #107
CRD #1034	Preventive WR-6822	Outage #3-10	N.A.	N.A.	Replaced drive with #93
CRD #1216	Preventive WR-6823	Outage #3-10	N.A.	N.A.	Replaced drive with #747C
CRD #720C	Preventive WR-6824	Outage #3-10	N.A.	N.A.	Replaced drive with #895C

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Steel Work	Preventive WR-6851	age #3-10	N.A.	N.A.	Installed shoot out steel removed during CRD maint. work
CRD Scram Inlet Valve	Corrective WR-7264		Loose Valve Stem	Valve Leaks Through	Tightened valve stem
CRD Accumulator 30-27	Corrective WR-7413		Worn Accumulator	H_2O Leaked Through	Replaced accumulator
CRD 30-35	Corrective WR-7809	Outage #3-10	Connector Was Separated From Probe	Could Not Get Full In Signal From Drive	Reworked connection on drive
CRD 14-27 Scram Inlet Valve CV3-0305-126	Corrective WR-8304	Outage #3-10	Loose Valve Stem	Valve Leaks Through	Tightened down valve stem one notch
CRD Scram Inlet Valve B-10 CV3-0305-126	Corrective WR-8305	Outage #3-10	Loose Valve Stem	Valve Leaks	Tightened down valve stem
CRD Accumulator 26-19	Corrective WR-8402	Outage #3-10	Torn Teflon Seal	Drive Overtravel	Replaced seals & O-rings
CRD 14-27 Scram Inlet Valve	Corrective WR-8577	Outage #3-10	Loose Valve Stem	Scram Inlet Valve Leaking	Tightened stem one turn
CRD Check Valve 3-0301-98	Corrective WR-8747	Outage #3-10 LER #50-249/1976-29	Worn Valve	Failed Leak Rate Test	Lapped valve
CRD Accumulator 14-23	Corrective WR-8921	Outage #3-10	Worn N_2 Cap	N_2 Charge Leaking	Replaced N_2 charging fitting

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
CRD Accumulator 10-27	Corrective WR-8922	Outage #3-10	Worn N_2 Cap	N_2 Charge Leaking	Replaced N_2 charging fitting
CRD Accumulator 22-27	Corrective WR-8923	Outage #3-10	Worn N_2 Cap	N_2 Charge Leaking	Replaced N_2 charging fitting
CRD Accumulator 30-51	Corrective WR-8924	Outage #3-10	Worn N_2 Cap	N_2 Charge Leaking	Replace N_2 charging fitting
CRD Accumulator 10-19	Corrective WR-8925	Outage #3-10	Worn N_2 Fitting	N_2 Charge Leaking	Replaced N_2 charging nipple
CRD 02-39 Scram Inlet Valve	Corrective WR-8936	Outage #3-10	Loose Valve Stem	Valve Leaking	Tightened lower stem
RPS Relay 590-108G	Corrective WR-4955		Relay Out of Adjustment	Relay Tripped Twice Also Had Loud Chatter	Cleaned & adjusted relay
Isolation Condenser Relay 595-117C	Preventive WR-5292	Outage #3-8	N.A.	N.A.	Removed relay to shop, did inspection test per N.R.C. request
Rx. Mode Switch	Preventive WR-7562	Outage #3-10	N.A.	N.A.	Contacts cleaned & checked for continuity
RPIS Full In & Accumulator Press. Level Rod Blocks	Preventive WR-7656	Outage #3-10	N.A.	N.A.	Installed jumpers & blocks for CRD overhaul work after all fuel removed
Main Steam Line High Temp. Relay 595-101B	Corrective WR-7679	Outage #3-10	Out Of Calibration	Relay Periodically De-energizes	Relay & associated temperature switches checked

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Instrument Flow Check Valves 3-263-2-42A,B	Preventive WR-8909	Outage #3-10	N.A.	N.A.	Installed & adjusted all valves for proper leakage
Instrument Flow Check Valves 3-220-67E,F,G,H	Preventive WR-8910	Outage #3-10	N.A.	N.A.	Inspected & corrected valve flow
Rx. Mode Switch	Corrective WR-9745	Outage #3-4	Dirty Contacts	Could Not Clear Rod Block Until Almost In Refuel Mode	Cleaned contacts
Feedwater Flow Indicator 3-644A,B,C	Preventive WR-2083		N.A.	N.A.	Checked calibration of meters, one needed adjustment
RPIS System	Preventive WR-12195	Outage #3-10	N.A.	N.A.	Removed board & associated circuitry which was installed for RPIS relay timing tests
Neutron Flux Instrument	Preventive WR-4488		N.A.	N.A.	Installing data acquisition system with guidance from G.E.
RPIS	Preventive WR-4489		N.A.	N.A.	Installing data acquisition system with guidance from G.E.
APRM #6	Corrective WR-8293		Dirty Contacts	During Test 500-S-III APRM #6 Malfunct.	Cleaned contacts
SRM Channel 24 Detector	Corrective WR-8850		Bad Cable In Integrator	Count Rate Meter Dropped to Zero & Remained There After Startup	Replaced cable & ran functional test

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
APRM Flow Convertors A & B	Corrective WR-9521		Instrument Out Of Calibration	APRM Flow Bias Off Normal Alarm	Recalibrated flow convertors
APRM R.B. & Scram Function	Corrective WR-11009		Instrument Out Of Adjustment	Got Rod Block At 105 Instead of 104	Readjusted setting on APRM scram/rod block instruments
LPRM 24-09B	Corrective WR-11568		Undetermined	Reading On LPRM Seemed Low	While trying to locate problem readings returned to normal
APRM 6	Corrective WR-11951		Unit In Shutdown Mode	APRM Shows Hi & HiHi Alarms	This condition occurs because of gains from various LPRM's during shutdown
LPRM 40-49D	Corrective WR-178		Calibration Problem	LPRM Reads 80% TIP Indicates ~ 24%	Recalibrated LPRM
APRM Channel 1	Corrective WR-215		Undetermined	APRM Reads Low Compared To Other APRM's	When checked out all channels agreed
SRM 21	Corrective WR-548		Bad Voltage Regulator	Channel Reads Downscale & Inop. At 600 MWe	Replaced voltage regulator
APRM #1	Corrective WR-932		Calibration Off	Rod Block Set-point Exceeded Calculated Value	Changed rod block setpoints to within limits of 33-700-IV ± 2%
SRM 21	Corrective WR-1151		Volt Regulator Too High	Not Within Surveillance Test Specs.	Adjusted 15.0 Volts output from regulator

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
APRM #6	Corrective WR-1690		Bad DC Amplifier	By Changing DC Amp Position "APRM" Meter Indic. Changed 5%	Changed DC amp.
LPRM 40-41	Corrective WR-2258		Bad Components In Instrument	LPRM Indic. 18 w/cm^2 But Giving Downscale Alarm & Light	Replaced LPRM card & IC Chip G3
APRM Channel 6	Corrective WR-2427		Possibly LPRM Problems	APRM Drifts Downscale & Is Erratic	When checked out worked properly
LPRM's (56-25D, 40-09D, 40-41D, 40-57B, 24-57D, 08-41D)	Preventive WR-2469		N.A.	N.A.	Checked all alarm points
LPRM 24-17B	Corrective WR-2678		Calibration Problem	Monitor Reading High Level	Calibrated and worked properly
SRM & IRM Sub-Pile Room Cables	Preventive WR-3174	Outage #3-10	N.A.	N.A.	New cables installed. These will eliminate use of jumpers
LPRM 40-33B	Corrective WR-3403		Bad Instrument Components	Even with LPRM Bypassed Still Get Downscale Alarm	Repaired card & reassembled unit
RBM-7	Corrective WR-4582		Undetermined	Problem With "Inop" Trip Circuitry	Upon investigation unit working properly

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
LPRM Group #1	Corrective WR-4625		Bad Voltage Regulator	Have Downscale Lights On Full Core Display	Replaced VR2. All alarms cleared
SRM/IRM Refuel Cables	Preventive WR-4977	Outage #3-10	N.A.	N.A.	Return SRM/IRM cables to normal routing
LPRM 48-41A	Corrective WR-5037		Undetermined	Downscale Alarm Flashes In At 26%	Checked out downscale alarm found no problem
APRM DC Amplifiers	Preventive WR-5874		N.A.	N.A.	Checked solder connections on all channels
LPRM 08-49B	Corrective WR-5920		Bad Connection	Meter Reads Downscale	Found bad connection in pause assembly, while trying to find exact location problem disappeared
IRM #13	Corrective WR-6174	Outage #3-6	Bad Pre-Amp	Range Indications Inconsistent	Replaced DC pre-amplifier
APRM #1	Corrective WR-7062		Undetermined	Rod Block 1% High Determ. By DOS 500-3	Checked limits found proper per 33-700-IV
LPRM 16-09A	Corrective WR-7433		Undetermined	Discrepancy Between LPRM & TIP	Checked current calibration found proper
APRM #4	Corrective WR-7436	Outage #3-10	Shorted Jack Connector	APRM Reading Changes When Door Is Moved	Repaired connector pins on J-38

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
LPRM 08-17, 08-33,08-41,16-09, 16-25,16-33,24-25,24-41,24-49, 32-09,40-17,48-09,48-17,56-41	Preventive WR-7559	Outage #3-10	N.A.	N.A.	Replaced LPRM's during outage
SRM/IRM Shorting Links	Preventive WR-7795	Outage #3-10	N.A.	N.A.	Removed shorting links
Fuel Load/ Unload Chambers Channel 21	Preventive WR-7984	Outage #3-10	N.A.	N.A.	Adjusted fuel loading chamber channel 21
Fuel Load/ Unload Chambers Channel 22	Preventive WR-7999	Outage #3-10	N.A.	N.A.	Installed & adjusted FLC channel 22
SRM #21 Detector	Corrective WR-8972	Outage #3-10	Ground On Shield	Detector Inoperable	Replaced detector
Fuel Load/ Unload CHamber Channel 23	Preventive WR-8000	Outage #3-10	N.A.	N.A.	Installed & adjusted FLC channel 23
SRM/IRM Shorting Links	Preventive WR-8335	Outage #3-10	N.A.	N.A.	Removed SRM/IRM shorting links
SRM 21 Drive	Corrective WR-8352	Outage #3-10	Drive Caught CRD Platform	Drive Keeps Blowing Fuses	Freed drive
IRM 14 Detector	Corrective WR-8958	Outage #3-10	Ground On Shield Of Detector	Detector Inoperable	Replaced detector
IRM 18	Corrective WR-8513	Outage #3-10	Bad Cable Connector In Drywell	Get Spurious Hi Hi Alarm In A Rx. Scram	Replaced bad cable

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
IRM 18	Corrective WR-8695	Outage #3-10	Bad Connector Under Rx. Vessel	Get Spurious Trips	Replaced connector
IRM 12 Detector	Corrective WR-8971	Outage #3-10	Ground On Shield Of Detector	Loss Of Signal	Replaced detector
LPRM 16-33-2A	Corrective WR-9317		Dirty LPRM Mode Switch	LPRM Reading Downscale	Exercised mode switch
SRM 21	Corrective WR-12058		Worn Cable & Connector	Indicator Behaved Erratic	Replaced cable & connector
Refuel Grapple	Preventive WR-4849		N.A.	N.A.	Performed complete inspection of grapple
Refuel Grapple	Preventive WR-6541		N.A.	N.A.	Replaced main cable on grapple
Refuel Platform	Corrective WR-6724		Slack Cable	Brake Slips	Adjusted slack cable
Refuel Platform	Corrective WR-7249	Outage #3-10	Bad Relay	Control Room Losing Rod Permissive Check Relays	Replaced relay
Refuel Platform	Corrective WR-7642		Improper Operation	With Platform "Racked Out" No Rod Block Received	Found that plug must be pulled out not just "Racked Out"
Refuel Platform	Corrective WR-7827	Outage #3-10	Worn Spring	Grapple Hoist Control Switch Sticks	Replaced spring
Refuel Grapple	Corrective WR-8298	Outage #3-10	Worn Wire Insulation	Get Rod Block On East 2/3 Of Pool	Replaced wire

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Refuel Platform	Corrective WR-8908	Outage #3-10	Switch Out Of Adjustment	Grapple Does Not Come Up High Enough	Adjusted switch
Squib Valve Indication SBLC 3-11068	Corrective WR-114		Burnt Out Bulb	Squib Valve Potential Light Not Lit	Replaced bulb
SBLC Relief Valve RV-1105A	Corrective WR-3029		Cap Dirty	Liquid Leaking From Around Cap	Cleaned around cap & reinstalled
SBLC Pump A	Corrective WR-5148		Loose Packing	Pump Leaked	Tightened down packing on all three pistons
SBLC Temperature Hi/Lo Switch TS-1155	Corrective WR-5167		Setpoints Off	Temperature Switch Alarmed	Setpoints corrected by calibration
SBLC Explosive Valve	Preventive WR-6239	Outage #3-10	N.A.	N.A.	Installed new valve "A" following actuation after refuel outage surveillance test.
SBLC Relief Valves	Preventive WR-6245	Outage #3-10	N.A.	N.A.	Checked relief valve setpoints.
SBLC Valve 3-1101-1	Corrective WR-8097	Outage #3-10	Switch Needs To Be Relocated	Need To Remove Handwheel To Operate Valve	Fabricated mounting plate for limit switches & actuator
SBLC Pump A & B	Preventive WR-9120		N.A.	N.A.	Repacked pumps
CUD Non Regen. Heater 3B-1204-B	Corrective WR-5211	LER #50-249/1976-10	Gasket Blown & Bad Weld	Leaks	Remove head & repaired defective weld
Isolation Condenser Initiation Logic	Preventive WR-2239	Outage #3-4 LER #50-249/1976-5	N.A.	N.A.	Cleaned & adjusted all contacts on reset switch

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Isolation Condenser Vent Monitor 3-1736A & B	Preventive WR-4777		N.A.	N.A.	Changed alarm setpoint from 20 to 10 MR/HR as per NRC request.
Isolation Condenser Valve Flow Check Union 1301-23	Corrective WR-9039	LER #50-249/1976-33 Outage #3-10	Worn Seal Surface	Check Valve Leaked	Lapped union mating surface
ECCS Jockey Pump	Corrective WR-283	Outage #3-2	Worn Packing	Water Spraying From Pump	Repacked pump with lead packing
Core Spray Downstream Disch. MO Valve 3-1402-25C	Corrective WR-4075	Outage #3-10 LER #50-249/1976-9	Problems With Heaters	Valve Tripped Thermally	Changed heater
Core Spray Header Δ P Barton Switch Housing	Preventive WR-4797	Outage #3-10	N.A.	N.A.	Locking device slot stripped so installed nutsert for locking
Core Spray Pump 3-C	Corrective WR-8385	Outage #3-10	Loose Pipe	Water Leaked Into Oil	Tightened pipe & replaced oil
Core Spray Pump 3-C	Corrective WR-8895	Outage #3-10	Insufficient Flushing Following Completion of WR 8335	Water Still In Bearing Oil	Drained oil, flushed out casing
Core Spray Δ P DPIS-3-1459A	Corrective WR-9128		Switch Calibration	Meter Reads Full Scale But No Alarm	Recalibrated pressure switch
Containment Cooling Service Water Pump "3A"	Corrective WR-316		Worn Packing	Pump Leaks	Repacked pump

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Containment Cooling Heat Exchangers 3A/B-1503	Preventive WR-1973	Outage #3-10	N.A.	N.A.	Cleaned tubes
Containment Cooling Service Water Vault Penetrations	Corrective WR-3708	Outage #3-4 LER #50-249/1976-8	Leaking Seals	Leaking Penetrations	Applied RTV sealant to all leaks
Containment Spray Interlock Switch PS 3-1501-62A,B,C,D	Preventive WR-4499		N.A.	N.A.	Changed setpoint as required because of addition of pump back system
Containment Cooling Pump Discharge Valve 3-1501-2D	Corrective WR-5700	Outage #3-10	Dirty Valve	Valve Will Not Close	Cleaned & repacked valve
CCSW Pump 2A-1501-44	Corrective WR-6134	Outage #3-6	Worn Packing	Pump Leaked	Repacked inboard & outboard glands
CCSW Pump 2D-1501-44	Corrective WR-6135		Worn Packing	Pump Leaked	Repacked pump
LPCI Valve MO1501-38B	Corrective WR-7026		Bad Seal	Oil Leaked From Operator	Replaced grease seal
CCSW Pump A,B,C, D - 3-1501-44	Preventiv WR-7826	Outage #3-10	N.A.	N.A.	Cleaned & replaced pumps
LPCI Valve 1501-25B	Corrective WR-7866	Outage #3-10	Undetermined	Check Valve Gave Double Indication	At time of repair no double indication

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE. 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
LPCI Pump Breaker 3C	Corrective WR-8038	Outage #3-10	Trip Coil Burnt Out	Breaker Would Not Trip	Replace trip coil
LPCI Loop Break Detection Switch DPIS 3-261-34A	Corrective WR-8057	Outage #3-10 LER #50-249/1976-22	Switch Calibration	Switch Fails To Close	Recalibrated switch
LPCI Heat Exchanger Δ P Transmitter DPT-3-1543B	Corrective WR-8058	Outage #3-10	Bad Transmitter	Output Is Fluctuating	Replaced strain gage & calibrated transmitter
LPCI Valve MO3-1501-27A	Corrective WR-8346	Outage #3-10 LER #50-249/1976-26	Loose Wire	Valve Will Not Open From Control Room	Corrected loose connection
LPCI Injection Valve 3-1501-25B	Corrective WR-8227	Outage #3-10 LER #50-249/1976-23	Valve Packing Worn	Valve Leaked Through	Disassembled, lapped & replaced packing
CCSW Vault Penetrations	Corrective WR-8347	Outage #3-10 LER #50-249/1976-27	Loose Flanges & Mechanical Seals	Penetrations Leaking	Sealed penetrations with RTV
CCSW Pump 3A-1501-44	Corrective WR-9029		Worn Packing	Pump Leaks	Repacked pump
Drywell Vent Valve 1601-22	Preventive WR-10460		N.A.	N.A.	Installed rebuilt valve
Torus Level Indicator 3-1626	Corrective WR-11440		Calibration	Wrong Level Indication	Recalibrated transmitter & set level alarms
Drywell Snubber #25	Corrective WR-12048		Worn Oil Zerk	Snubber Leaks	Replaced Zerk & added oil

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Torus Level Switch LS3-1602-6	Corrective WR-12278		Alarm Setpoint Off	No Alarm Present	Reset both high & lo alarm points
Torus Level Transmitter LT3-1626	Corrective WR-598		Transmitter Output Wrong	Faulty Alarm Indication	Rezeroed transmitter
Torus Level Transmitter LT 3-1626	Corrective WR-3156		Undetermined	Level Reading In Control Room & Sight Glass Don't Agree	Checked out alarm unit functioning properly
Torus Snubbers #8, #9, #16	Preventive WR-3419		N.A.	N.A.	Added G.E. silicone fluid SF1154
Drywell Equipment Hatch	Preventive WR-3770	Outage #3-4	N.A.	N.A.	Remove & reinstall hatch for weekend outage
Torus Snubber #16	Corrective WR-4165		Worn Accumulator Indicating Rod	Snubber Leaks	Installed new snubber
Torus Level Switch 3-1602-6	Corrective WR-4655		Present Set Point Is Too Close To Tech Spec. Limit	Narrow Margin When Operating At 1 PSIG	Decided to change low level setpoint from 4.5" to 4.0"
Drywell Nitrogen Makeup Isolation Valve 1601-57	Preventive WR-4684	Outage #3-10	N.A.	N.A.	Changed motor because of worn gear replacement program
Torus Water Level Indication 3-1602-3	Corrective WR-5163		Operator Not Able To Read Sight Glass Properly	Sight Glass & Control Room Readings Differ	IM checks out problem but readings agreed

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Drywell Vent Valve 3-1601-21	Preventive WR-5748	Outage #3-10	N.A.	N.A.	Replaced valve because close to Tech. Spec. Limit
Snubbers #2, #24, #28, #30	Preventive WR-5780	Outage #3-10 LER #50-249/1976-21	N.A.	N.A.	Bench checked snubbers & replaced 1
Drywell CRD Hatch	Preventive WR-6192	Outage #3-10	N.A.	N.A.	Needed to be removed for outage
Torus Manway	Preventive WR-6193	Outage #3-10	N.A.	N.A.	Removed manway for outage work, LLRT before removal.
Drywell Equipment Hatch	Preventive WR-6194	Outage #3-8	N.A.	N.A.	Replaced hatch after outage
Torus & Drywell Pressure Transmitters	Corrective WR-6547		Trans. Calibration	Difference In Reading When Pressure Equalized	Recalibrated transmitters
Torus Outer Column #4	Preventive WR-6783		N.A.	N.A.	Check clearance between lower yoke plate & support pin
X Area Secondary Containment Seal Penetrations	Corrective WR-7029		Open Seals	Failed Containment Test	Sealed penetrations on specified walls
Rx. Bldg. To Turb Bldg. Door Interlock	Corrective WR-7034		Loose Mounting Screw	Loose Interlock System	Tightened loose sheet metal screw
Drywell Equipment Hatch	Preventive WR-7172	Outage #3-10	N.A.	N.A.	Closed hatch at end of outage

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Drywell Equipment Hatch	Preventive WR-7173	Outage #3-10	N.A.	N.A.	Open hatch for drywell work
Vacuum Breakers	Preventive WR-7563	Outage #3-10	N.A.	N.A.	Inspected 25% of torus/ drywell vac. breakers
Torus/Drywell Vacuum Breakers 3-1601-33G, 33D, 33E	Preventive WR-7564	Outage #3-10	N.A.	N.A.	Test limit switches positions
Primary Containment Isolation Valves	Preventive WR-7568	Outage #3-10	N.A.	N.A.	Lubricated air operated isolation valves
Torus/Drywell Vac. Breakers	Preventive WR-7570	Outage #3-10	N.A.	N.A.	Performed lift force test
Personal And Equipment Air Lock Doors	Preventive WR-7567	Outage #3-10	N.A.	N.A.	Inspected seals & installed two new bearings
Torus/Rx. Bldg. Vacuum Breaker 3-1601-31A & B	Preventive WR-7618	Outage #3-10	N.A.	N.A.	Performed lift force test
Drywell Vent Valve 3-1601-23	Corrective WR-7671	Outage #3-10 LER #50-249/1976-16	Bad Packing	Found Leak During LLRT	Repacked valve
Drywell To Torus Vacuum Breaker 3-1601-32E	Corrective WR-8018	Outage #3-10	Dirty Shaft Seal	Breaker Leaks	Cleaned & lubricated shaft
Drywell/Torus Vacuum Breaker 3-1601-32D	Corrective WR-8019	Outage #3-10	Shaft Seal Dirty	Breaker Leaking Through	Lubricated both shaft seal

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Drywell/Torus Vacuum Breaker 3-1601-33A	Corrective WR-8020	Outage #3-10	Shaft Seal Dirty	Breaker Leaking Through	Lubricated shaft
Valve AO-3-1601-20B	Corrective WR-8130	Outage #3-10	Bad Solenoid	Valve Leaks	Replaced solenoid
Torus/Reactor Bldg. Vacuum Breaker Valve Control PS3-1601-20B	Corrective WR-8627	Outage #3-10	Pressure Switch Set Wrong	Valve Cycles	Adjusted pressure switch
TIP Purge Check Valve	Corrective WR-8678	Outage #3-10 LER #50-249/1976-30	Dirty Check Valve	Valve Found Leaking Through During LLRT	Removed & cleaned check valve
Instrument Flow Check Valves 3-1301-19A,20A, 29	Corrective WR-8884	Outage #3-10	Bad Valve Plungers	Too Much Leakage	Changed plungers & filed grooves
Torus/Drywell Vacuum Breaker Open Alarm 1601-33A	Corrective WR-9890	LER #50-249/1976-35	Relay "DA" Has Dirty Contacts	No Open Alarm In Control Room	Cleaned contacts in relay
Fuel Pool Radiation Monitor ARM 3-1743B	Corrective WR-12489		Cable Problem	Monitor Failed Downscale	Reworked cable connection
Main Steam Line Monitors 1705-3	Preventive WR-1826		N.A.	N.A.	Changed trip point for high rad scram & isolation to 1100
MSL Radiation Monitor "A"	Corrective WR-5294		Calibration	Hi Alarm Does Not Come In Until 720	Reset limits to be within 500 → 700 range

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
MSL Radiation Monitor C	Corrective WR-8746	Outage #3-10	Bad Relay	Monitor Reading Hangs Up	Replaced relay
Rx. Bldg. Vent Stack ARM	Corrective WR-6746		High Background Levels	ARM Seemed To Be Reading High	Check with Rad Dept. found out about higher background
Offgas Monitor Log Recorder 3-1705-13	Preventive WR-12209		N.A.	N.A.	Adjusted alarm & trip point setting to most recent data.
Fuel Pool ARM ARM3-1743A	Corrective WR-1477		Bad Sensor Converter	Indicator Trip Failed Downscale	Repaired sensor converter
Fuel Pool ARM 3-1743A	Corrective WR-1611		ARM Bad	Spiking Upscale Causing Trips	Replaced & calibrated ARM
HPCI 3-2301 Pump	Corrective WR-315	Outage #3-4	Undetermined	Trips Off Turning Gear With Emerg. Oil Pump On	Checked out turning gear with factory rep. present, operated properly
HPCI Pump Discharge Valve 2301-8	Corrective WR-5557		Burnt Out Motor	Valve Does Not Operate	Installed new motor checked limits
HPCI Drain Pot Trap Inlet 3-2301-54	Corrective WR-11251		Bad Packing	Steam Leak	Repacked valve
HPCI Valve 3-2301-3	Corrective WR-11253		Bad Packing	Valve Leaked	Repacked valve
HPCI Turbine Steam Supply 3-2305-10B	Corrective WR-12514		Bad Gasket	Flange Leaked	Replaced gasket

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
HPCI H.P. Pump Seal Water Line	Corrective WR-1580	Outage #3-4	Bad Pipe Fitting	Fitting Leaks	Replaced fitting
HPCI Turning Gear	Preventive WR-3613	Outage #3-4	N.A.	N.A.	Inspected turning gear
HPCI Drain Pot Valves	Preventive WR-6235	Outage #3-10	N.A.	N.A.	Repacked all drain valves
HPCI Motor Gear Unit	Corrective WR-7334	Outage #3-10	N.A.	During Testing Got Alarm 125 VDC GRD.	Investigated found alarm should annunciate
HPCI Motor Gear Unit	Preventive WR-7626	Outage #3-10	N.A.	N.A.	Checked all of HPCI MG wiring
Suppression Chamber High Level Switch LS3-2351-A & B	Preventive WR-8084	Outage #3-10	N.A.	N.A.	Checked switch for proper operation
HPCI AC Cooling Pump	Preventive WR-8676	Outage #3-10	N.A.	N.A.	Repacked Coupling
HPCI 2nd Stage North Bearing	Corrective WR-8707	Outage #3-10	Bad Bushing	Oil Leak At Bushing	Replaced bushing
HPCI MSC (HSS Limit Switch)	Corrective WR-9091	Outage #3-10	Dirty Limit Switch	Limit Switch Stuck In	Cleaned & lubricated limit switch
Drywell Equip. Drn. Sump 3-2001-3	Corrective WR-4320	Outage #3-10	Valve Leaking Through	Sump Level Drops When System On Recirc	Determined that some leakage can be expected because of slug installed to prevent complete closure of discharge valve AO 3-2001-3

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
HPCI MO-2301-4	Corrective WR-8788	Outage #3-10	Burnt Out Motor	Valve Will Not Operate	Replaced motor & limit switches
Electromatic Relief Valves C & E	Preventive WR-7405	Outage #3-10	N.A.	N.A.	Relief valves rebuilt
Motor Operator For MO-3706	Preventive WR-4683	Outage #3-10	N.A.	N.A.	Replaced operator per worn gear replacement program
Diesel Cooling Pump Discharge Valve 3-3930-501	Preventive WR-5942		N.A.	N.A.	Internals of valve were replaced
Air Ejector Suction Valve 3-5402-B	Corrective WR-2900	Outage #3-4	Valve Dry	Did Not Auto Close	Lubricated valve
SJAE (A & B) Rupture Diaphragm	Corrective WR-3762	Outage #3-4 LER #50-249/1976-7	Suspect Offgas Explosion	Ruptured Diaphragms	Replaced old rupture diaphragm
Offgas Filter 2B-5403	Preventive WR-3764	Outage #3-4	N.A.	N.A.	Replaced filter & gaskets
Offgas Monitor "A"	Corrective WR-4364		Calibration	Chart & Meter Do Not Agree	Adjusted zero & span on recorder
Offgas Monitor Log Recorder 3-1705-13	Preventive WR-6901		N.A.	N.A.	Adjust alarm & trip point to agree with data
Check Valve Next To Valve 3-4722	Corrective WR-8469	Outage #3-10	Check Valve Leaking Through	Failed LLRT	Replaced check valve

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Offgas Monitor "B"	Corrective WR-9059	Outage #3-10	Undetermined	Reads Downscale	Performed normal surveillance checked out properly
Turbine Control Valve #2 Fast Acting Solenoid	Corrective WR-92	LER #50-249/1976-1	Solenoid Plunger Sticking	Received No 1/2 Scram On Closure Of #2 Control Valve	During repair valve plunger loosened up
Turbine Control Valve #2 Fast Acting Solenoid	Preventive WR-97	LER #50-249/1976-2	N.A.	N.A.	Installed new solenoid
EHC Valve Wiring	Preventive WR-11585	Outage #3-10	N.A.	N.A.	Rewire all terminal points on all EHC valves
Fuel Pool Jib Crane	Corrective WR-12221		Brush Holders Loose	Controls Not Working Properly	Tightened & shimmed brushes
Rx. Building Grapple	Corrective WR-12464		Tachometer Gear Loose On Shaft	Speed Control Faulty	Pinned gear to shaft
Diesel Generator	Preventive WR-7338		N.A.	N.A.	Changed starting motors
Diesel Generator	Preventive WR-12019		N.A.	N.A.	6 month insp. replaced start solenoid
Diesel Generator Governor	Corrective WR-12150		Loose Lock Nut	Control Switch Will No Control Engine	Called factory rep. work done under WR-12179
Diesel Generator Governor	Corrective WR-12179		Loose Lock Nut	Governor Control Switch Will Not Control Engine	Adjusted governor shut down screw

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Diesel Generator	Preventive WR-12311		N.A.	N.A.	Changed oil filter
Diesel Generator	Preventive WR-367		N.A.	N.A.	1 Month inspection (January)
Diesel Generator	Preventive WR-1362		N.A.	N.A.	1 Month inspection (February)
Diesel Generator Starting Air Compressor	Corrective WR-1677		Switch Adjustment	Compressor Would Bring Pressure Up To 250#	Readjusted pressure control switch
Diesel Generator Governor	Corrective WR-1978	LER #50-249/1976-4	Loose Wire	Engine Governor Could Be Raised But Not Lowered From Control Room	Wire connection lug replaced
Diesel Generator	Preventive WR-2008		N.A.	N.A.	Quarterly inspection (March)
Diesel Generator	Preventive WR-3107		N.A.	N.A.	1 Month inspection
Diesel Generator	Preventive WR-3965		N.A.	N.A.	1 Month inspection
Diesel Generator	Preventive WR-4781		N.A.	N.A.	Yearly, semi-annual, quarterly, & monthly inspection
Diesel Generator	Preventive WR-4851	Outage #3-10	N.A.	N.A.	Performed 5 year maintenance program
Diesel Generator Air Compressor	Corrective WR-5224		Pressure Switch Adjustment	Cuts Off At Too Low Pressure	Adjusted pressure switches

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
Diesel Generator Air Compressor "A"	Corrective WR-5869		Bad Compressor	Pressure Problems	Installed new compressor
DG Cooling Water Pump 3-3903	Corrective WR-5864	LER #50-249/1976-13	Motor Grounded	Breaker Tripped	Replaced pump & motor
Diesel Generator	Preventive WR-7285	Outage #3-10	N.A.	N.A.	Performed quarterly inspection & installed new soak back filter
Diesel Generators	Preventive WR-8049	Outage #3-10	N.A.	N.A.	Perform 1,3, & 6 month inspections
Diesel Generator Governor	Corrective WR-8277	Outage #3-10 LER #50-249/1976-24	Loose Terminal	Governor Will Not Respond In Increase Direction	Tightened terminal strip lugs
Diesel Generator Governor	Corrective WR-8937	Outage #3-10 LER #50-249/1976-32	Limit Switch Adjustment	Governor Can Not Be Raised From Control Room Or Local Panel	Adjusted limit switches
4 KV Breakers	Preventive WR-4818		N.A.	N.A.	Overhaul breakers
480 Volt Breakers	Preventive WR-6019	Outage #3-10	N.A.	N.A.	Inspected breakers per DMP-206; switch gear per DMP 505
4 KV Breakers	Preventive WR-6020	Outage #3-10	N.A.	N.A.	Inspect breakers per DMP 202 & 505
Trip Coil On Breaker Bus 34 To 34-1	Corrective WR-8754		Trip Coil Burned U	Breaker Nonfunctional	Replaced trip coil

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
480 Volt Motor Control Center ECCS Contacts	Preventive WR-6021	Outage #3-10	N.A.	N.A.	Inspect ECCS contractors per DMP 207
Feed To ESS MG Set Drivemeter	Corrective WR-8965	Outage #3-10	Ground Problem	Problem With Drivemeter	Cleaned brush holder of carbon
125V DC System	Corrective WR-8816	Outage #3-10	Pinched Wire	Ground On System	Repaired pinched wire on limit switch on 3A-MSIV
250 Volt DC Charger	Corrective WR-9055		Bad SCR	Trip Alarm Up But No Trip	Replaced SCR & adjusted
125 Volt Battery	Preventive WR-6403	Outage #3-10	N.A.	N.A.	Performed discharge test per DMP 250 DOP 6900-2
24/48 Volt Battery	Preventive WR-6404	Outage #3-10	N.A.	N.A.	Performed discharge test per DMP 250
Essential Service MG Set	Preventive WR-6160	Outage #3-10	N.A.	N.A.	Checked out automatic bus transfer equipment.
ESS MG Set	Preventive WR-6406	Outage #3-8	N.A.	N.A.	Replace brushes on generator, inspect & clean tachometer & brush holders
Bus 29 Feed To MCC 39-2	Corrective WR-7760	Outage #3-10	N.A.	N.A.	Disconnected Cables 21352,21353,21354 used during construction

DRESDEN UNIT 3

SAFETY RELATED MAINTENANCE, 1976

EQUIPMENT	NATURE OF MAINTENANCE	LER OR OUTAGE NUMBER	MALFUNCTION		CORRECTIVE ACTION
			CAUSE	RESULT	
O_2 Sample System Isolation Valves	Preventive WR-7561	Outage #3-10	N.A.	N.A.	Lubricated valves
24/48 Volt Batteries	Preventive WR-8552	Outage #3-10	N.A.	N.A.	Replace 15 of the batteries
24/48 Volt Batteries	Preventive WR-8553	Outage #3-10	N.A.	N.A.	Inspect chargers equalize values, check voltage
Recirc MG Set Scoop Tubes	Preventive WR-10007		N.A.	N.A.	Adjusted mechanical stops At 20" on A & At 17" on B
Diesel Generator	Preventive WR-10025		N.A.	N.A.	Performed 1 & 3 month inspection
Diesel Generator Shutdown Solenoid	Preventive WR-9149		N.A.	N.A.	Had factory rep. check adjustment of shutdown solenoid
Instrument Line Flow Check Valve	Corrective WR-9039		Worr Faces	Union Leak	Lapped union faces

LICENSEE EVENT REPORTS

UNIT 3

During the reporting period of January-December, 1976, two events classified as Licensee Event Reports took place with reference to a Unit 3 forced outage or forced reduction in power.

The reports are summarized as follows:

3-76-1 Off Gas Explosion - April 28, 1976

During normal operation following the removal of the rechar system from service, an apparent explosion occurred in the "3B" off gas system. The charcoal absorbers and filters were by-passed at 0120 hours. Off gas analyzer Hi Hi alarms were received and reactor power was reduced to clear the alarms. After the alarms had cleared, power was slowly increased until 0450 hours, when an apparent off gas explosion occurred. Reactor power was further reduced to approximately 360 MWe. Standby Steam Jet Air Ejector (SJAE) "3A" was placed into service. However, further investigation indicated that the rupture diaphragm in both SJAE's had been damaged and a unit shutdown was initiated and completed by 1038 hours.

The cause of the explosion is not known; however, it is suspected that the hydrogen was ignited by a spark caused by static electricity. The explosion apparently failed both SJAE diaphragms at the same time. It is assumed that the pressure wave failed the rupture diaphragms in both the operating SJAE "3B" and the standby SJAE "3A" due to leakage through the discharge valve. Although personnel on shift at the time reported hearing two explosions, no evidence could be found to support this theory. The "3B" off gas filter in service at the time of the explosion was damaged and subsequently replaced. Prior to the unit start-up, both filters were tested and off gas system valve lineups were verified to be correct.

An investigation of this and other previous off gas explosions has been initiated. The investigation will address the origin and prevention of off gas system explosions.

3-76-2 Discovered Hole In "B" Moisture Separator Drain Tank Line - September 12, 1976

During a routine plant inspection, a steam leak was found in an elbow on the "B" Moisture Separator Drain Tank to the "D" Feedwater Heaters. The unit was placed in "Standby" and a temporary repair was initiated. All leakage was contained in the plant drain system, thereby precluding any uncontrolled release.

A surge in the process stream resulted in the failure of a support bolt on a rigid line hanger. The resultant additional force on a downstream support which was welded to the process line, caused a crack to develop in the process pipe in the area of the attachment weld. The crack was ground and covered with weld material as a temporary repair. The affected area was permanently repaired during the current refueling outage.

This section of piping has occasionally experienced system surges and oscillations. Additional restraints were already scheduled for installation before the failure occurred. Installation of these additional shock suppression devices should preclude a recurrence of this nature.

OTHER EVENTS OF INTEREST

During 1976, Unit 3 had no forced outages in which releases of radioactivity or radiation exposures exceeded 10 percent of annual allowable limits.

EXAMINATIONS OF IRRADIATED FUEL

Unit 3 - The unit shutdown for its fourth partial refueling outage on September 20. Since Cycle 4 offgas activity levels had been high, with a step increase having occurred on November 26, 1975, approximately 30 failed assemblies were anticipated, especially in the original core (7 x 7) fuel. Appropriately, a rather extensive out-of-core wet sipping program was conducted. All 540 of the initial core and improved 7 x 7 fuel assemblies were sipped, plus 99 of the 184 8 x 8 assemblies. No 8 x 8 failures were expected and none were found. A total of 27 failed 7 x 7 assemblies were identified. The locations of these assemblies in the Cycle 4 core are listed in Table 3-1 and mapped in figure 3-1.

Additionally, a visual and non-destructive examination (NDE) program for failed fuel assemblies was conducted in November. Selected failed assemblies from the EOC-3 and EOC-4 discharge lots were visually inspected with high-quality underwater optics. Many of those with no obvious visible defects were disassembled, and the individual rods were examined visually and with ultrasonic and eddy current tests. The ultrasonic tests served to detect the presence of water in the rods, a definite indication of rod perforation, and the eddy current tests served to locate potential sites of perforation. Finally, visual scrutiny of indicated potential perforation sites served to verify and characterize any actual failures.

A synopsis of the preliminary inspection results appears below.

FAILED FUEL ASSEMBLIES	DISCHARGED EOC-3	DISCHARGED EOC-4
Total Assemblies Visually Inspected:	20	7
Total Assemblies Disassembled for NDE:	14	0

INDIVIDUAL RODS FROM FAILED FUEL ASSEMBLIES	DISCHARGED EOC-3
Total Rods Non-Destructively Examined:	673
Rods With Probable Cladding Perforations:	119 (18%)

There were no new modes of failure observed, and all but one of the observed failures were minor or moderate in physical magnitude. Most of the observed failures were deemed on a preliminary basis to be characteristic of pellet-clad interaction (PCI).

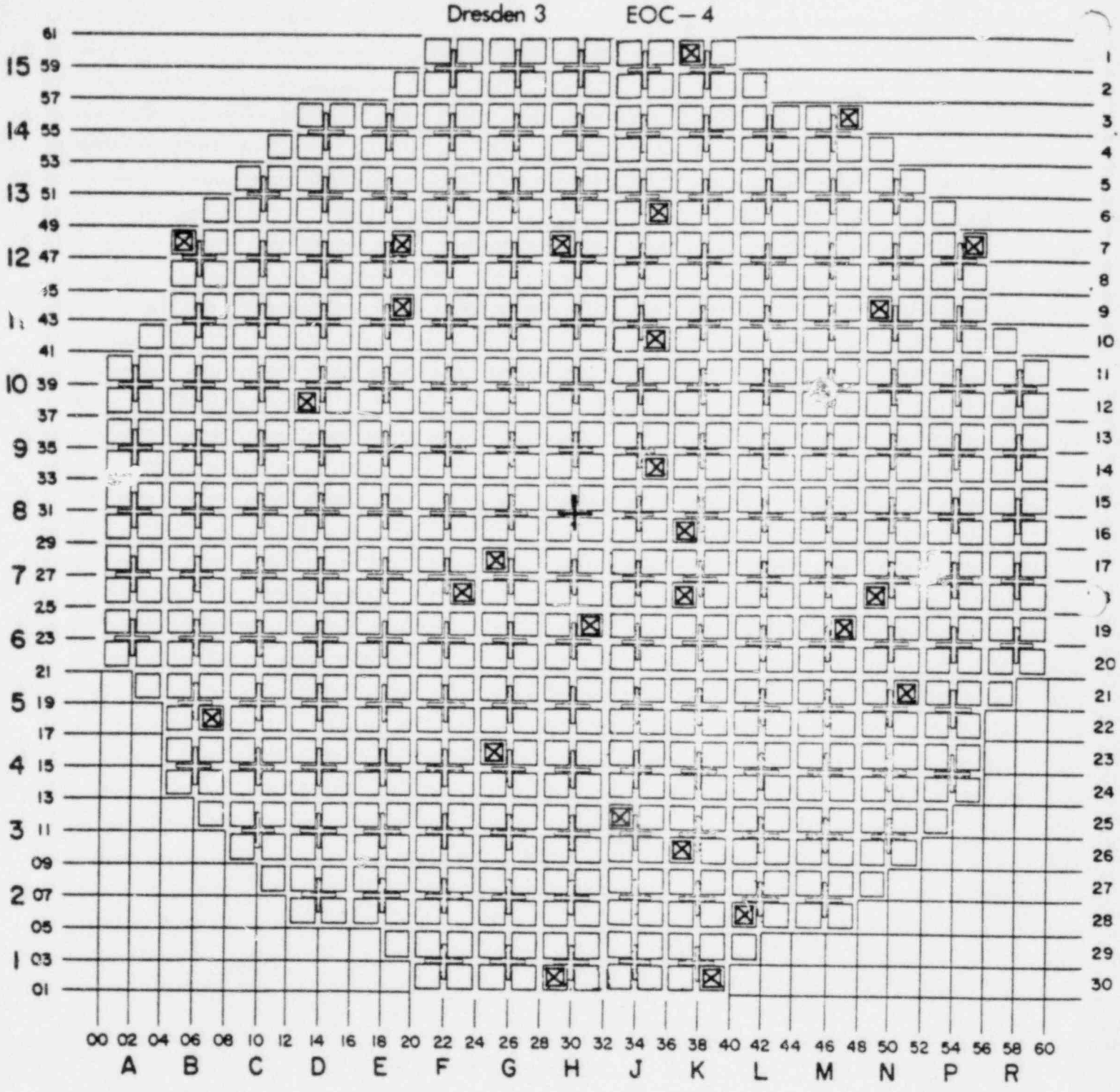
The single relatively gross failure observed was in one rod of an EOC-4 discharge assembly, DD 418, which had been located peripherally (core location 37-60) during Cycle 4. It is suspected that this particular failure was initiated during Cycle 3 operation, and contributed substantially to the unexplained step increase in offgas activity experienced on November 26, 1975.

TABLE 3-1

FAILED FUEL ASSEMBLIES DETECTED AT EOC-4 : UNIT 3

	ASSEMBLY	CYCLE 4 LOCATION	EOC-4 EXPOSURE, MWd/T
1.	DD 058	55-48	14727
2.	DD084	51-20	16436
3.	DD 164	05-48	14517
4.	DD 194	07-18	16170
5.	DD 203	35-42	15998
6.	DD 259	23-26	15209
7.	DD 297	29-02	13511
8.	DD 359	25-16	16661
9.	DD 360	37-26	15081
10.	DD 373	49-26	17178
11.	DD 374	31-24	14277
12.	DD 397	37-10	16613
13.	DD 417	29.48	15537
14.	DD 418	37-60	14878
15.	DD 432	49-44	16406
16.	DD 454	25-28	15601
17.	DD 492	39-02	13575
18.	DD 501	13-38	17278
19.	DD 502	35-50	17108
20.	DD 513	33-14	16659
21.	DD 550	35-34	15476
22.	DD 551	19-48	17161
23.	DD 555	47-24	17314
24.	DD 562	41-06	15585
25.	DD 610	47-56	14375
26.	DD 614	37-30	14356
27.	DD 695	19-44	16791

FIGURE 3-1



⊠ = failed assembly

Feedwater Nozzle - U.T.

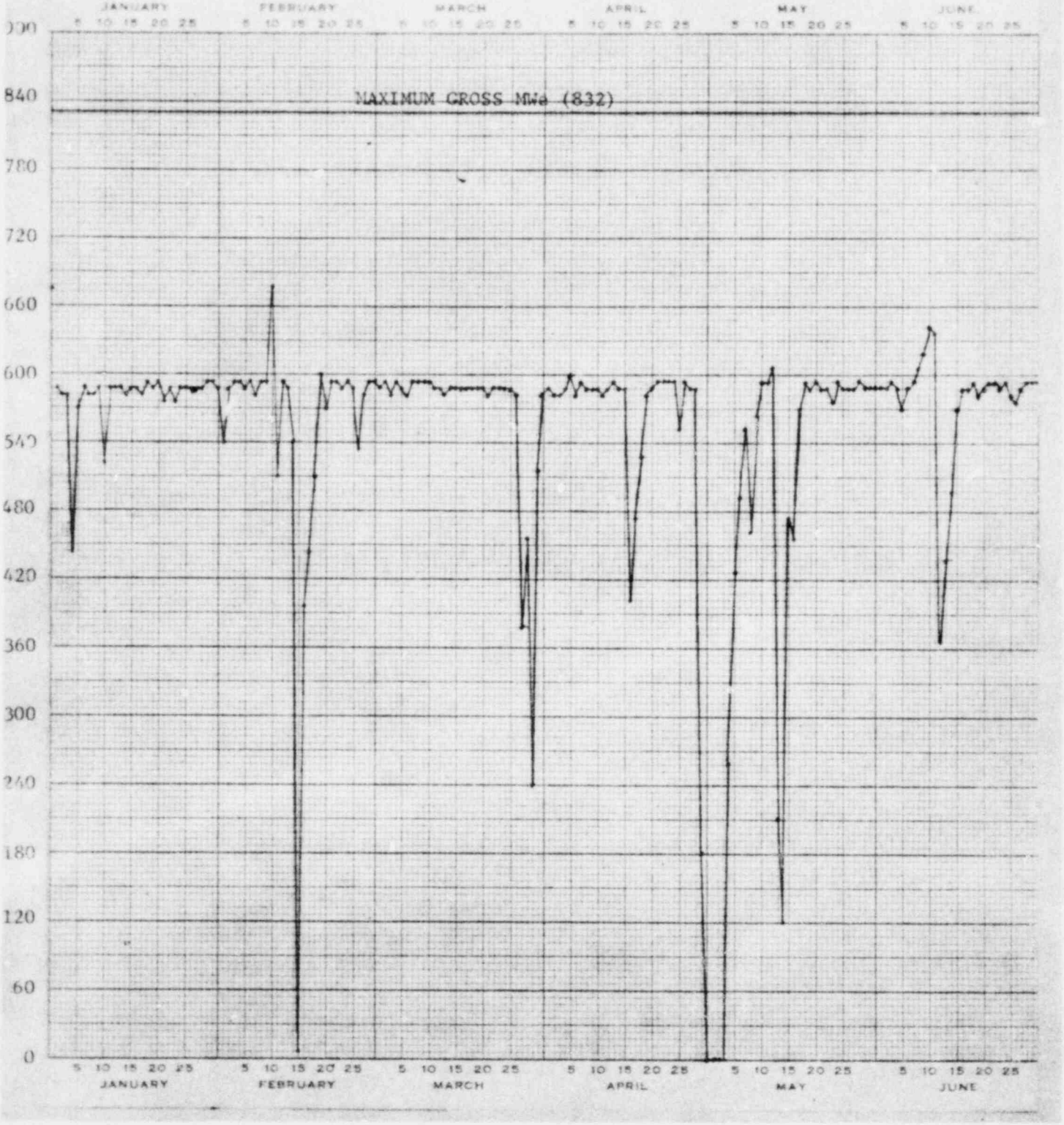
During the Unit 3 fall refueling outage. a newly developed ultrasonic testing technique was used to examine the inner radius and inner bore areas of the feedwater nozzles. The purpose of the examination was to determine whether or not there were thermal fatigue cracks in the feedwater nozzles whose depth would penetrate the stainless cladding into parent metal. The so called "Breda" technique uses a replica of a feedwater nozzle as a standard for calibration. The examinations revealed two indications in the bore region and one in the inner radii of the four nozzles. Due to the characteristics of these indications, they were determined to be minor cladding defects not cracks.

NET ELECTRICAL POWER GENERATION

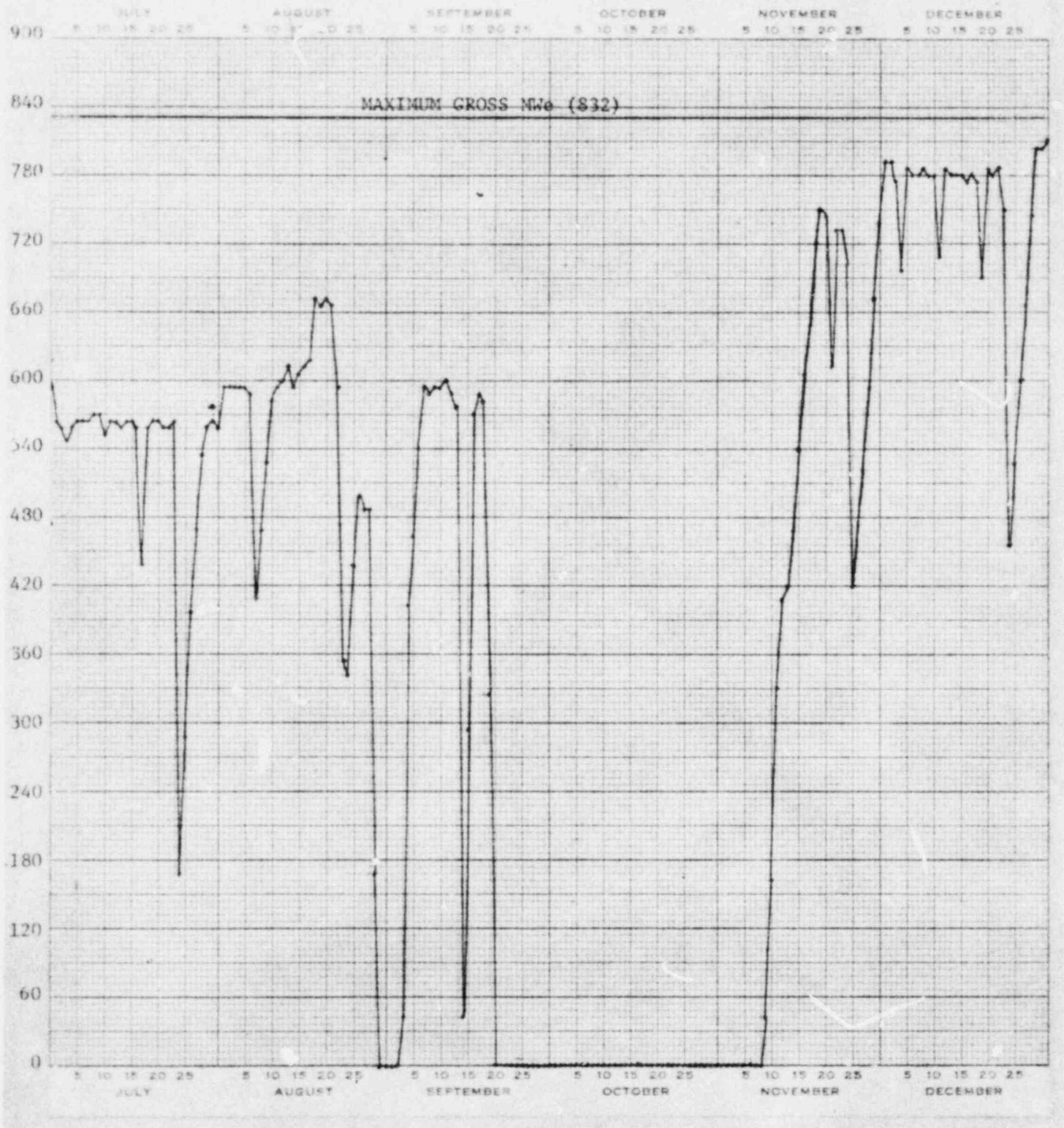
UNIT 3

	YEAR	CUMULATIVE
Number of hours the reactor was critical	7,363.5	34,848.91
Reactor reserve shutdown	0	0
Hours generator on-line	7,234.86	33,031.58
Unit reserve shutdown hours	0	0
Gross thermal energy generated (MWH)	13,233,238	61,268,079
Gross electrical energy generated (MWH)	4,250,296.25	20,227,548.25
Net electrical energy generated (MWH)	4,034,251	19,199,511
Reactor service factor	83.8	72.9
Reactor availability	83.8	72.9
Unit service factor	82.4	69.2
Unit availability factor	82.4	69.2
Unit capacity factor (using MDC)	59.4	52.0
Unit capacity factor (using design MWe)	56.8	49.7
Unit forced outage rate	4.2	15.7

UNIT 3 DAILY AVERAGE GROSS MWe



UNIT 3 DAILY AVERAGE GROSS MWe



UNIT 3 SHUTDOWNS AND F. ED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
2-15-76	S 3-1*	22.0	F	1	----	RC	Fuel XX	Adjusted rod pattern
2-26-76	F 3-2* **	18.2	G	-	----	CH	Valve X	"A" feedwater reg valve locked up due to personnel inadvertently bumping pressure switch. Rapid load reduction followed. Corrective action was to inform personnel of importance of being careful when work near control instrumentation.

* Unit #-Outage #
3-00
Corresponds to outage # used in Operating Data Report (to N.R.C.).

** Power reductions.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 3 SHUTDOWNS AND RCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
3-29-76	F 3-3*	10.2	A	3	----	CB	Mec Fun	Reactor scram precipitated by spurious recirc pump spike. No critical path activity, other than scram recovery and the evential locking out of the scoop tubes.
4-29-76	F 3-4*	116.6	A	1	76-7	MB	ZZZZZZ	Off gas explosion failed both "A" & "B" SJAE rupture diaphragms. Critical path time was spent replacing the diaphragms. Explosion is as yet unexplained.
5-13-76	F 3-5*	30.5	B	3	----	CB	Mec Fun	During work on "B" MG set by IM's, the clamp which locks scoop tube positioner was removed. When clamp couldn't be reinserted, MG set tripped. Critical path activity was attributed to redesign of clamp and its securement to scoop tube.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 3 SHUTDOWNS AND F\ .ED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
7-24-76	F 3-6*	12.2	A	1	----	HA	Valve X	EHC oil leak was discovered leading to turbine control valve. Critical path activity was time attributed to securement of leak.
8-23-76	F 3-7*	8.7	G	3	----	CB		Reactor scrammed as a result of an incorrect action taken by the operator. No critical path activity other than scram recovery.
8-29-76	F 3-8*	60.6	F	1	----	MA	Vessel	Forced outage due to excessive floor drain leakage. However, outage was preventative and did not exceed Tech. Spec. Limit. Critical path activity included replacement of "B" recirc pump seals.
9-13-76	F 3-9*	24.2	A	1	76-15	HH	Pipe XX	Forced outage due to moisture separator drain line leak. Critical path activity included performing effective repair of cracked pipe.

(1) REASON:
A - Equipment failure (explain)
B - Maintenance or test
C - Refueling
D - Regulatory restriction
E - Operator training & license examination
F - Administrative
G - Oper tional error (explain)
H - Other (explain)

(2) METHOD:
1 - Manual
2 - Manual scram
3 - Automatic scram
4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 3 SHUTDOWNS AND FORCED POWER REDUCTIONS

DATE	TYPE[3] M:MAINTENANCE F:FORCED S:SCHEDULED	DURATION[3] (HOURS)	REASON[3](1)	METHOD OF SHUTTING DOWN THE REACTOR(2)	REPORTABLE 3 OCCURRENCE #	SYSTEM 4 CODE	COMPONENT 4 CODE	CORRECTIVE[4] ACTION TO PREVENT RECURRENCE
9-19-76	S 3-10*	1206.2	C	1	----	RC	Fuel XX	4th Unit 3 refueling and maintenance outage. Critical path activities included: 1) Work necessary to expose core 2) Fuel moves 3) CRD overhaul 4) Removal of stuck CRD #E-9 5) Retrieval of dropped mask filter in vessel after installation of separator and dryer 6) Reinstallation of steam separator and dryer
11-9-76	F 3-11*	13.8	A	3	----	HH	HTEXCH	Turbine tripped due to moisture separator Hi Hi level condition. Situation was due to a broken air line to "A" controller. Condition was repaired as a critical path activity.

(1) 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)

(2) METHOD:
- 1 - Manual
- 2 - Manual scram
- 3 - Automatic scram
- 4 - Other (explain)

(3) COLUMNS to be completed by NRC

(4) COLUMNS to be completed by licensee

UNIT 3

UNIQUE REPORTING REQUIREMENTS

There were no events on Unit 3 which require special reporting.

NUMBER OF PERSONNEL AND MAN/REM

EXPOSURE BY WORK AND JOB FUNCTION

This information is contained in the Dresden Nuclear Power Station Radioactive Waste, Environmental Monitoring and Occupational Personnel Radiation Exposure Report covering the period July through December 1976.

GLOSSARY

The following is a list of abbreviations which may appear in this report.

AO - Pneumatic Operated Valve

APRM - Average Power Range Monitor

ARMS - Area Radiation Monitoring System

BKR - Motor Control Center or Bus Breaker

CCSW - Containment Cooling Service Water Pump

CRD - Control Rod Drive

CUD - Reactor Water Cleanup Demineralizer System

DPIS - Differential Pressure Indicating Switch

ECCS - Emergency Core Cooling System

EGC - Economic Generation Control

EHC - Electro-Hydraulic Control

ESS - Essential Service System

FIC - Flow Indicating Controler

HO - Hydraulic Operated Valve

HPCI - High Pressure Coolant Injection System

HVAC - Heating, Ventilation and Air Conditioning

HVPS - High Voltage Power Supply

IRM - Intermediate Range Monitor

LPCI - Low Pressure Coolant Injection System

LPRM - Local Power Range Monitor

MG - Motor Generator Set

MO or MOV - Electric Motor Operated Valve

MSIV - Main Steam Isolation Valve

MSL - Main Steam Line

MSV - Main Stop Valve

GLOSSARY (Continued)

RBCCW - Reactor Building Closed Cooling Water System

RBM - Rod Block Monitor

RM - Remotely Operated Manual Valve

RPIS - Control Rod Position Indication System

RWM - Rod Worth Minimizer

SBLC - Standby Liquid Control System

SO - Solenoid Operated Valve

SGTS - Standby Gas Treatment System

SRM - Source Range Monitor

SSG - Secondary Steam Generator

TBCCW - Turbine Building Closed Cooling Water System

TIP - Traversing In-core Probe

uuA Meter - micro micro ammeter Nuclear Instrument

RPS - Reactor Protection System