DRESDEN NUCLEAR POWER STATION

UNITS #1, #2, AND #3

SEMI-ANNUAL REPORT

JANUARY 1, 1972 THROUGH JUNE 30, 1972

P R E F A C E

Section 6.6.D of the Dresden Unit 2 and Unit 3 Technical Specifications requires that a semi-annual report be submitted to the Atomic Energy Commission. To provide for a more logical, complete and concise report, and to eliminate duplication, the semi-annual reports for Dresden Units 1, 2 and 3 for the period January 1, 1972, through June 30, 1972, have been combined in this document. The document is divided into four sections: Section I - Dresden Unit 1 Operations and Maintenance; Section II - Dresden Unit 2 Operations and Maintenance; Section III - Dresden Unit 3 Operations and Maintenance; and Section IV - Dresden Station Radioactive Wastes and Environmental Monitoring.

DRESDEN NUCLEAR POWER STATION

SEMI-ANNUAL REPORT

JANUARY 1, 1972 THROUGH JUNE 30, 1972

SECTION I: DRESDEN UNIT 1 OPERATIONS AND MAINTENANCE

I. Unit #1

A. Introduction

Dresden Nuclear Power Station Unit 1 returned to operation February 1, following its seventh partial refueling outage. Following a brief period of early cycle physics testing, the unit operated at full power for a short time. The unit was then base loaded, operating between 80% and 90% power. The 10% and 20% power deratings were imposed to minimize off gas activity release. At the end of the report period, the unit was base loaded at approximately 80% power.

B. Operating Data

A brief summary of the nuclear and electrical operating data for the first half of 1972 is presented below. A more detailed summary, on a monthly basis, is provided in Table I-A and Figures I-A through I-F.

A listing of all reactor scrams and shutdowns, and their causes, is provided in Table I-B. Unit downtime following these shutdowns is also included.

Gross thermal generation	78,885.3 MWDt
Gross electrical generation	592,136.36 MWHe
Net electrical generation	561,978.90 MWHe
Number of criticals	21
Number of scrams from critical	7
Hours generator operated	3,388 Hrs. 28 Min.

C. Maintenance

A tabular summary of maintenance on systems and components designed to prevent or mitigate the consequences of nuclear accidents is set forth in Table I-C.

D. Facility Changes

Pursuant to the reporting requirements of paragraph 50.59 (b) of 10CFR Part 50, a brief description of facility changes made during the first half of 1972 without prior commission approval follows:

1. Core Spray Installation

A core spray system is in the process of being installed on Unit 1. This system is part of Commonwealth Edison's program to meet the AEC's adopted interim acceptance criteria for the performance of emergency core cooling systems (ECCS) for light water reactors with which we will have to comply by July 1, 1974. Completion of the system and operational checkout is not expected to be until late 1972. The description and design was covered in proposed change No. 17 to License DPR-2 dated October 10, 1968.

2. Vessel Level Sensor Installation

The old float-type Magnetrol reactor low water level sensors have been replaced by Yarway (indication type) level sensors. The magnetrol devices have been replaced because they had a history of unreliability due to crud accumulation which impaired the switch operation. Also, the Yarways have an additional set of contacts which will be used to initiate the core spray system that is being installed. No new safety item is involved since the reliability of the system has been increased.

3. Relocation of Motor Operators

From a past history of motor failure due to excessive heat, the motor operators on the emergency condenser condensate return lines, valves MO-101 and MO-109, were removed from the steam drum compartment to the Emergency Condenser (649') level.

The movement of these motor operators does in no way effect the safety function of these valves. It does allow access to the operators during unit operation.

TABLE I A

Dresden Unit 1 Operating Summary - 1972

Month	Hours Critical Hrs:Min	Hours Generator On-Line Hrs:Min	Core Thermal Power MWDt	Gross Electric Power MWHe	Net Electric Power MWHe	Number of Scrams & Shutdowns	Number of Times Critical	Duration of Downtime Hrs:Min
January	0	0	0	3.67	-1,929.2	0	0	744:00
February	665:46	602:46	11,439.3	85,161.0	80,128.7	5	16	30:14
March	744:00	744:00	18,783.0	139,290.25	133,190.3	0	0	0
April	716:41	712:10	17,426.0	133,020.79	127,171.8	1	1	2:19
May	702:14	680:10	16,397.1	124,410.34	118,580.2	3	3	41:46
June	664:51	649:22	14,839.9	110,250.31	104,837.1	1	1	55:09
Total	3,493:32	3,388:28	78,885.3	592,136.36	561,978.9	10	21	873:28

TABL I-B

Critical Date	Critical Time	Subcritical Date	Subcritical Time	Scram	Down Time	Reason for Shutdown
					752 Hr. 3 Min.	
2/1	0803	2/1	0836	Yes	6 Hr.27 Min.	Reactor Scram attributed to spurious undervoltage relay trip. Cause undetermined.
2/1	1503	2/1	1545	No	7 Hr.45 Min.	Low Power Physics Testing
2/1	2330	2/2	0039	No	11 Min.	Low Power Physics Testing
2/2	0050	2/2	0234	No	16 Min.	Low Power Physics Testing
2/2	0250	2/2	0327	No	9 Min.	Low Power Physics Testing
2/2	0336	2/2	0526	No	19 Min.	Low Power Physics Testing
2/2	0545	2/2	2055	Yes	3 Hr.35 Min.	Reactor scram due to low condenser vacuum. Loss of turbine seal steam pressure.
2/3	0030	2/3	0239	Yes	1 Hr.14 Min.	Reactor scram due to low condenser vacuum. Loss of turbine seal steam pressure.
2/3	0353	2/3	0542	No	1 Min.	Low Power Physics Testing
2/3	0543	2/3	0552	No	5 Min.	Low Power Physics Testing
2/3	0557	2/3	0604	No	11 Min.	Low Power Physics Testing
2/3	0615	2/3	0620	No	1 Min.	Low Power Physics Testing
2/3	0621	2/3	0650	No	7 Min.	Low Power Physics Testing
2/3	0657	2/3	1010	No	15 Min.	Low instrument air pressure allowed scram valve on D-7 to open slightly resulting in the drive drifting from 12 to 0 taking the reactor subcritical.

TAB I-B (cont'd)

Critical Date	Critical Time	Subcritical Date	Subcritical Time	Scram	Down Time	Reason for Shutdown
2/3	1025	2/14	1125	Yes	1 Hr.35 Min.	Reactor scram due to primary drum low water level caused by apparent sluggish feedwater control valve operation.
2/14	1300	4/17	0948	Yes	2 Hr.19 Min.	Reactor scram due to voltage surge caused by switchyard electrical malfunction.
4/17	1207	5/12	2235	No	32 Hr.53 Min.	Maintenance and Control Rod Drive testing shutdown.
5/14	0728	5/14	2250	Yes	8 Hr. 8 Min.	Reactor scram due to low condenser vacuum caused by a leaking heater shell relief valve.
5/15	0658	5/15	1025	Yes	45 Min.	Reactor scram during startup due to insufficient condenser vacuum with 200 psig reactor pressure.
5/15	1110	6/9	2344	No	55 Hr. 9 Min.	Scheduled shutdown for maintenance, surveillance, and control rod drive testing.
6/12	0653		----			
				Total	873 Hr.28 Min.	

FIGURE I-A

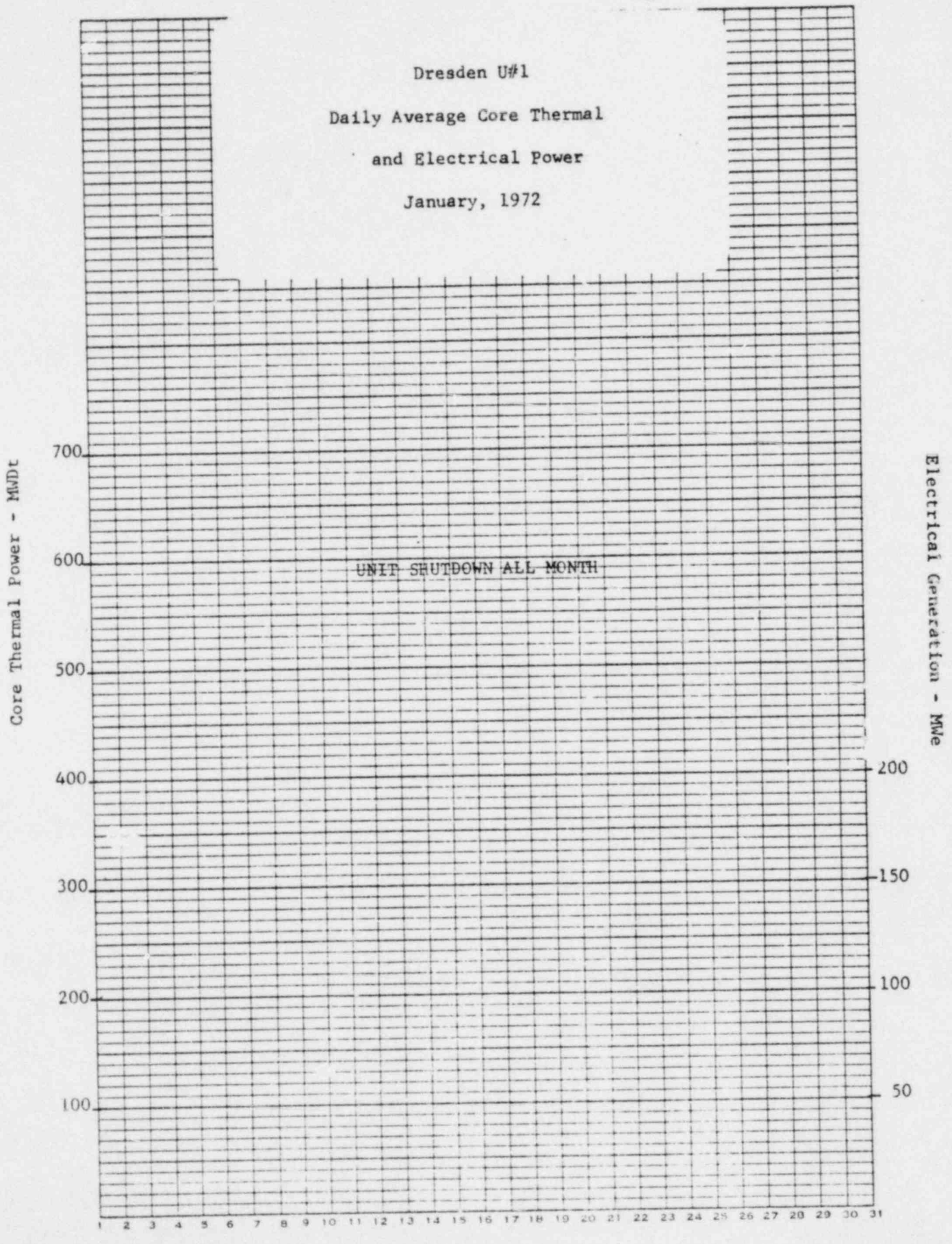


FIGURE I-B

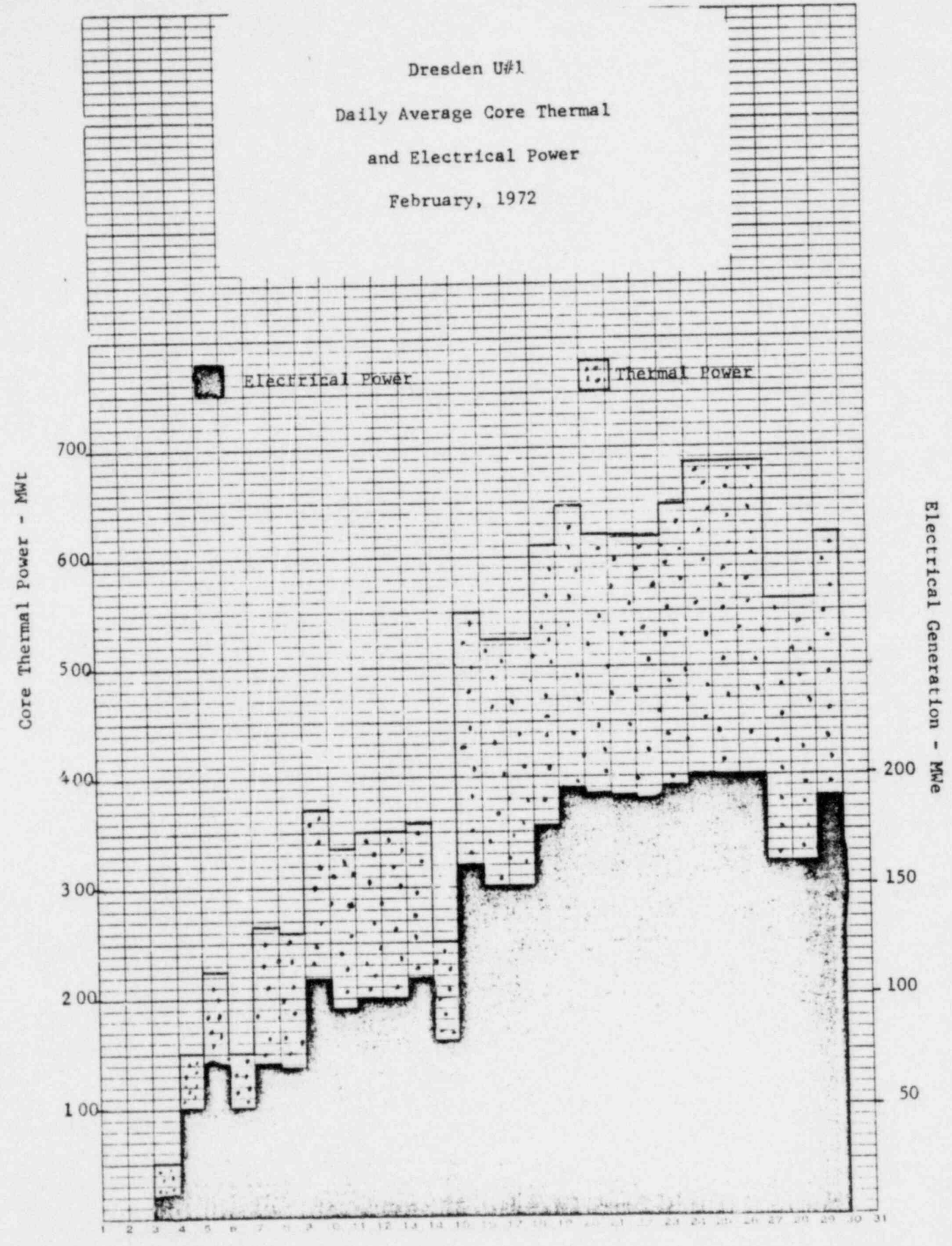


FIGURE I-C

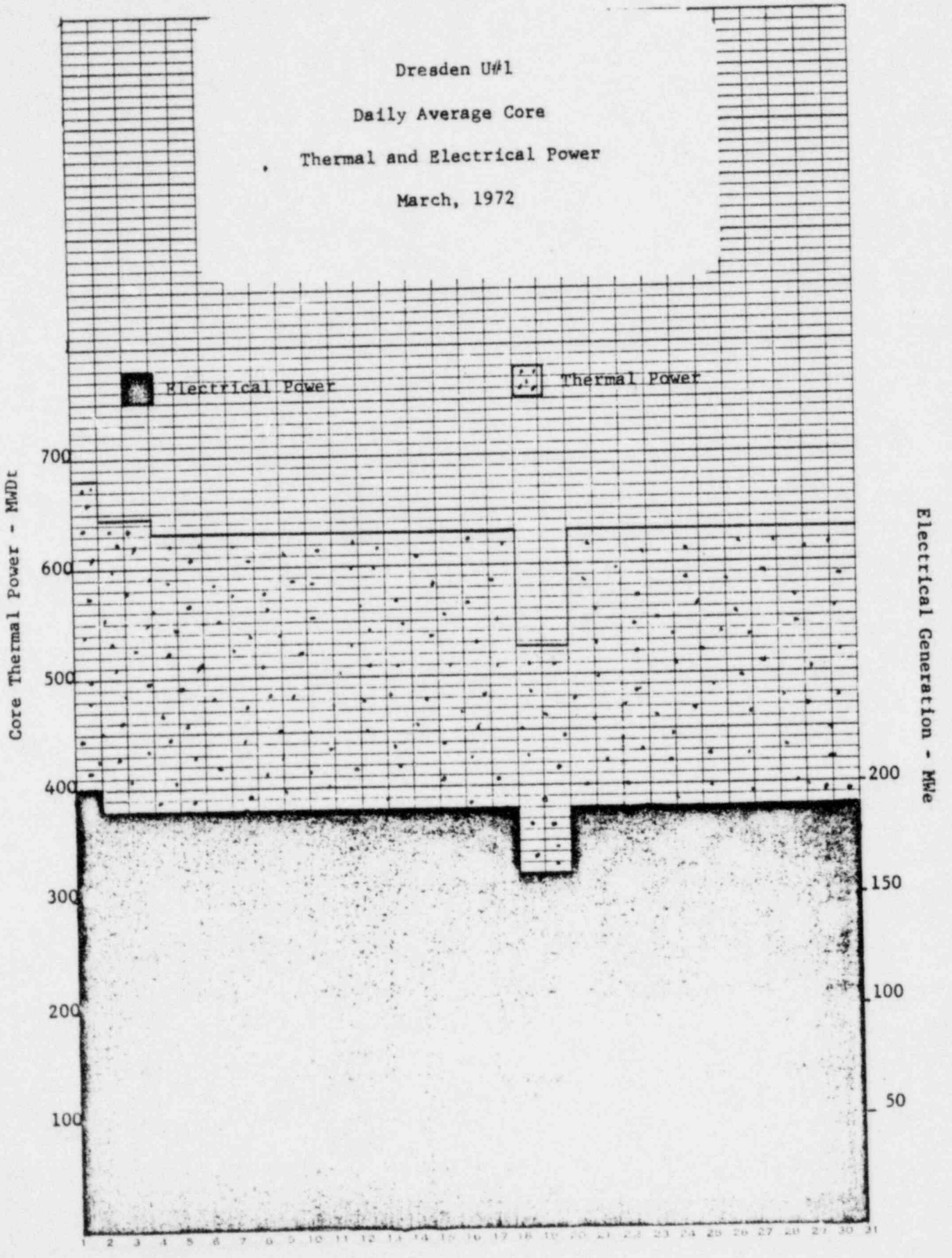


FIGURE I-D

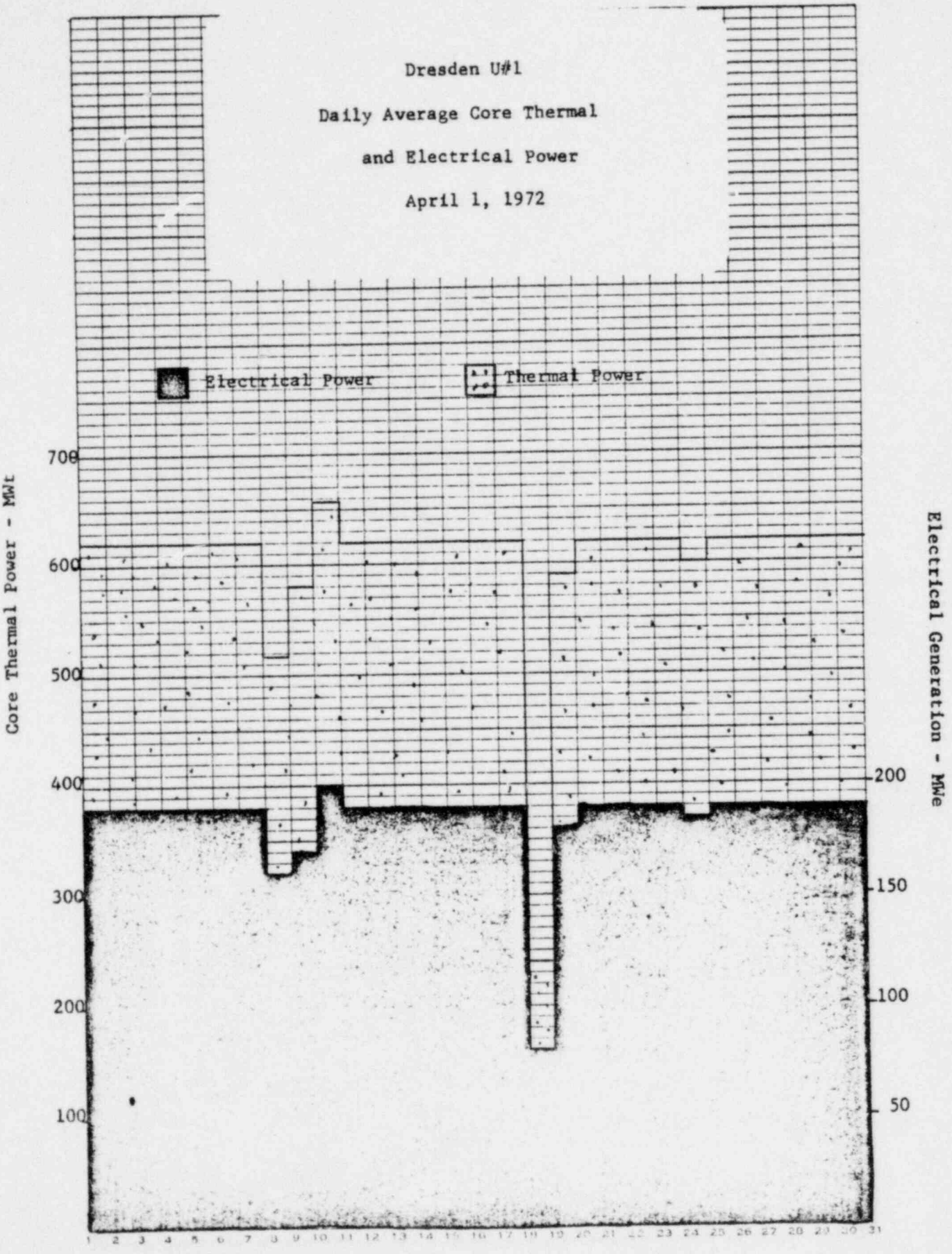


FIGURE I-E

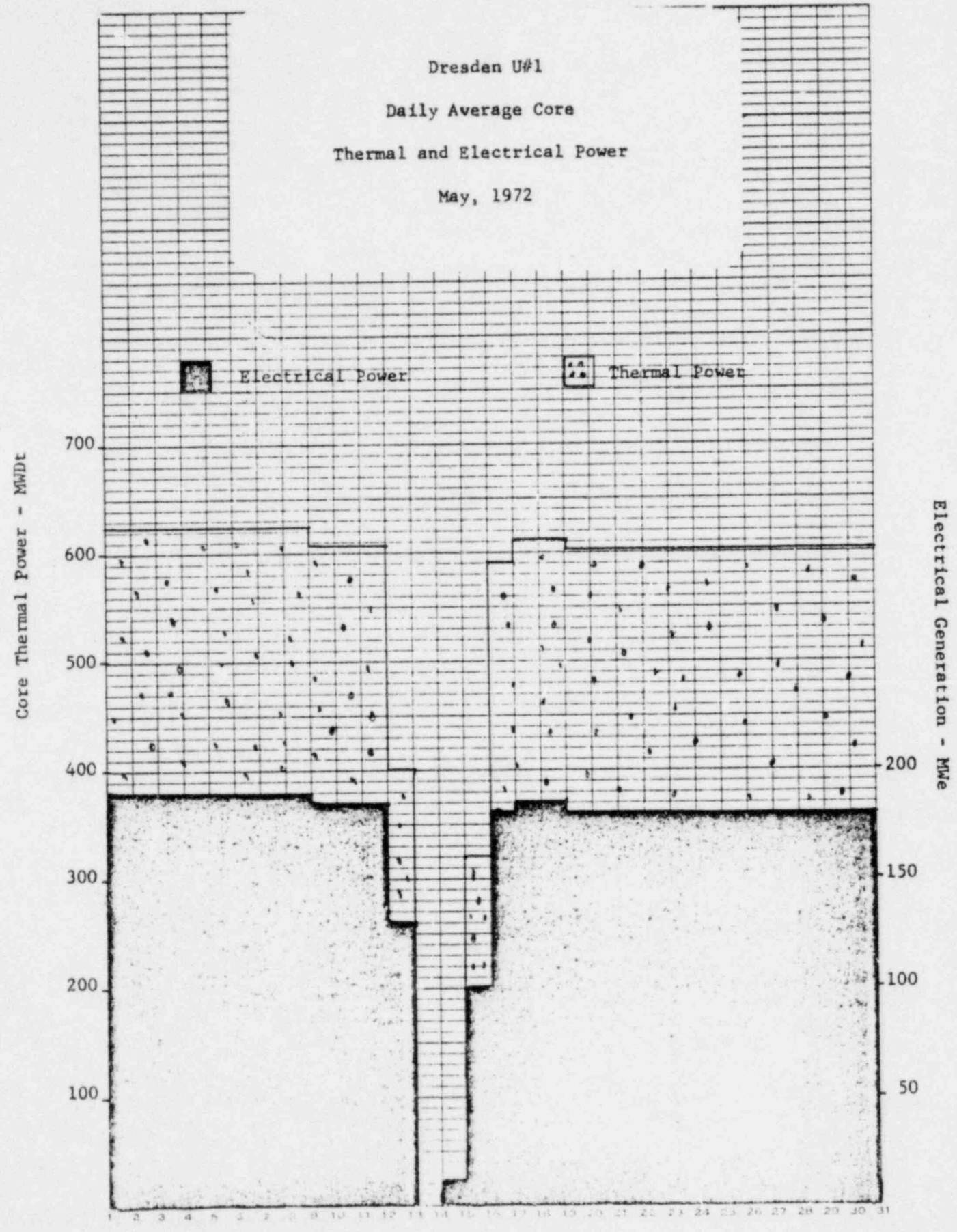


FIGURE I-F

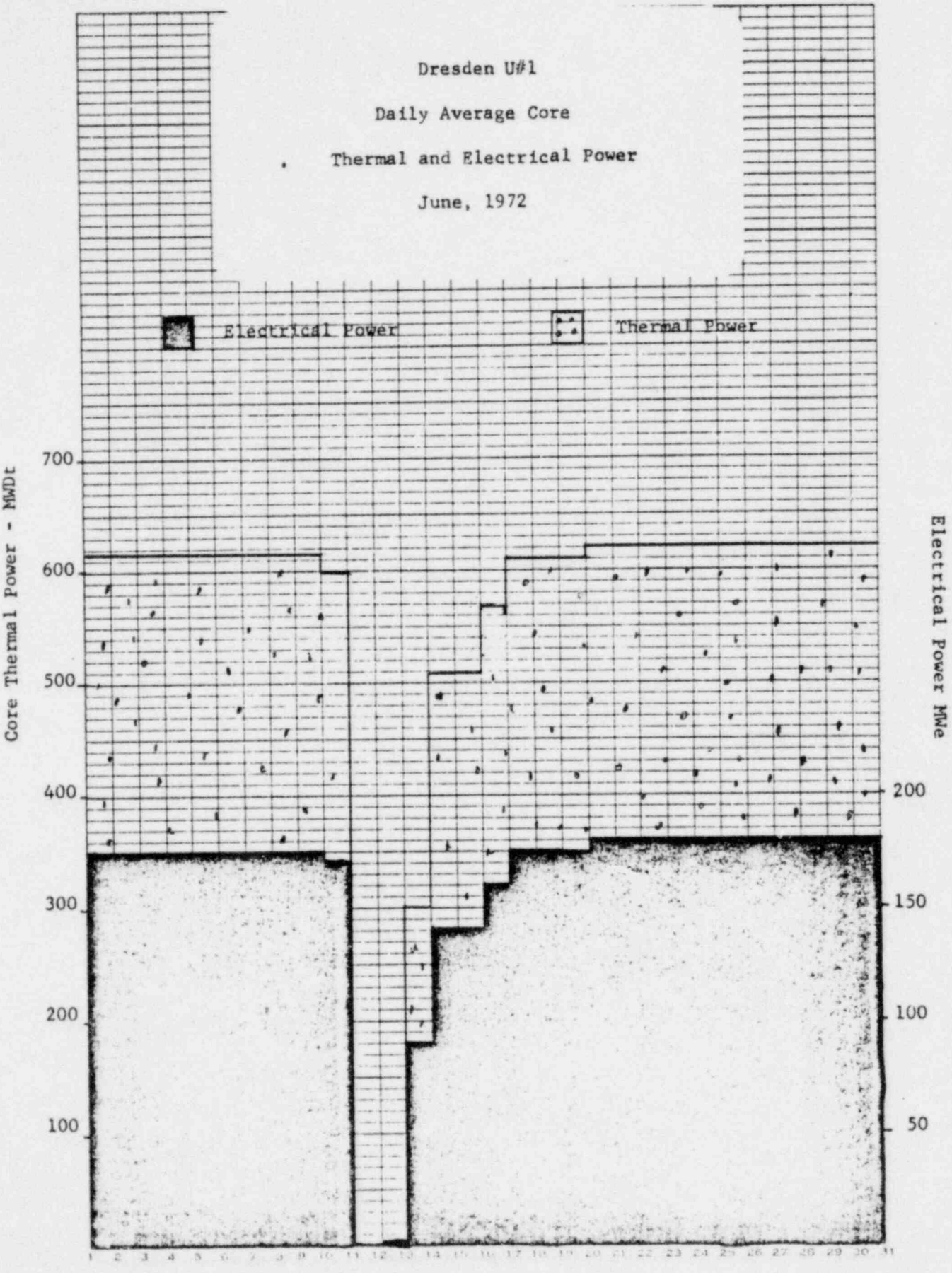


TABLE I-C

DRESDEN UNIT 1 MAINTENANCE SUMMARY 1972

Month	System	Component	Type of Maintenance	Cause of Malfunction	Effect of Malfunction	Action Taken to Preclude Recurrrence	Effect On Safe Operation Of Reactors	Time for Completion
January 5	Electrical	Diesel Generator	Corrective	Low Diesel Oil Temp.	Failure of Diesel to start.	Repaired thermo-statically controlled cooling valve and installed chain on radiator louvers.	None In shutdown	10 Hrs.
7	Reactor Auxiliary	"A" cleanup heat exchanger	Corrective	Tube leaks	Primary system leakage to closed cooling system.	Installed new heat exchanger and assoc-iated piping.	None	1500
9	Control Rod Drive	Pr + 200 Pressure Regulator	Corrective	Calibration Drift	Incorrect setting	Calibrated pressure regulator.	None	3
10	Reactor Safety	Neutron mon-itor channel #11 calibrate switch.	Corrective	Calibration Drift	Indicating high	Adjusted setting	None	2
11	Containment	Sphere exhaust valve AO-501 position switch	Corrective	Incorrect position switch setting.	No control room position indication	Adjusted position switch arm	None	2
11	Electrical	Diesel gener-ator battery	Corrective	Low battery voltage	Low battery voltage alarm	Replaced battery	None	4
12	Monitoring	Stack gas monitor recorder	Corrective	Faulty tube socket	Indicated full scale	Replaced tube socket	None	2

TABLE I-C (cont'd)

DRESDEN UNIT 1 MAINTENANCE SUMMARY 1972

Month	System	Component	Type of Maintenance	Cause of Malfunction	Effect of Malfunction	Action Taken to Preclude Recurrrence	Effect On Safe Operation Of Reactors	Time for Completion
January 13	Control Rod Drive	Drive G-8 position probe	Corrective	Faulty position probe	No position indication	Replaced position probe.	None	4 Hrs.
13	Control Rod Drive	Drive G-9 position probe	Corrective	Faulty position probe	No position indication	Replaced position probe.	None	4
13	Control Rod Drive	Drive B-5 position probe	Corrective	Faulty position probe	No position #12 indication	Replaced position probe.	None	4
13	Control Rod Drive	Drive accumulator #9 water alarm	Corrective	Loose wiring connection	No alarm function	Tightened connection	None	2
13	Control Rod Drive	Accumulator level switches 2, 17, 23	Corrective	Faulty switches	No control room alarm	Replaced switches	None	2
14	Control Rod Drive	Scram dump tank pressure indicator	Corrective	Faulty indicator motor coil	Incorrect indication	Replaced motor and calibrated indicator	None	3
18	Emergency Core cooling.	"B" post incident L1-505B	Corrective	Plugged bubbler tubing	Full scale indication	Cleaned bubbler tubing	None	4

TABLE I-C

DRESDEN UNIT 1 MAINTENANCE SUMMARY 1972

Month	System	Component	Type of Maintenance	Cause of Malfunction	Effect of Malfunction	Action Taken to Preclude Recurrrence	Effect On Safe Operation Of Reactors	Time for Completion
January 26	Monitoring	Composite sample pump	Corrective	Frozen suction line.	No water sample	Thawed suction line	None	4 Hrs.
28	Reactor Safety	Neutron monitor channel #7 recorder standardizer	Corrective	Faulty slide-wire holding bracket	Improper standardizing	Replaced bracket and calibrated standardizer	None	2
29	Primary Piping	Reactor vessel vent line flange	Corrective	Leak in "donut" flange	Primary system leak.	Replaced "donut" with standard flange.	None	22
February 1	Reactor Safety	Scram circuit and safety system	Preventive	None	None	Surveillance	None	6
4	Reactor Safety	Incore 116A scram light	Corrective	Faulty resistor on range selector switch	Instrument scram indicated	Replaced resistor	None	2
4	Reactor Safety	Incore 114A	Corrective	Detector sensitivity high	Indicated full scale	Decreased readout sensitivity	None	2
5	Containment	Sphere exhaust valve AO-501 diaphragm	Corrective	Faulty valve diaphragm	Slow valve operation	Replaced diaphragm	None	4

TABLE I-C (cont'd)

DRESDEN UNIT #1 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
February 11	Reactor Safety	Neutron monitor channel #7	Corrective	Failed tube	Erratic operation.	Replaced tube	None	2 Hrs.
12	Reactor Safety	Incore 106C	Corrective	Faulty auctioneer.	Zero indication.	Replaced auctioneer	None	3
18	Emergency Core Cooling	Diesel fire pump engine	Corrective	Exhaust line leak	Fumes in crib house	Replaced exhaust line with flexible pipe.	None	8
March 6	Electrical	Diesel generator batteries	Preventative	None	None	Replaced batteries	None	4
23	Emergency Core Cooling	Emergency condenser level transmitter and indicator.	Preventative	None	None	Surveillance	None	2
23	Reactor Safety	Neutron monitor channel #1 recorder	Corrective	Dirty slide wire.	Erratic operation.	Cleaned slide wire	None	2
April 7	Emergency Core Cooling	Diesel fire pump tachometer	Corrective	Faulty tachometer and cable.	Incorrect speed indication	Installed new tachometer and cable.	None	5

TABLE I-C

DRESDEN UNIT 1 MAINTENANCE SUMMARY 1972

Month	System	Component	Type of Maintenance	Cause of Malfunction	Effect of Malfunction	Action Taken to Preclude Recurrrence	Effect On Safe Operation Of Reactors	Time for Completion
April 12	Control Rod Drive	Drives D-1 and E-1	Corrective	Shorted bulb socket	Blew fuses	Insulated socket	None	3 Hrs.
12	Reactor Safety	Neutron monitor channel #6 standardization switch	Corrective	Calibration drift	Incorrect indication	Calibrated standard	None	2
12	Poison	Poison system temp. recorder	Corrective	Amplifier and recorder out of calibration	Erratic indication	Calibrated amplifier and recorder.	None	3
20	Reactor Safety	Neutron monitor channel #6	Corrective	Faulty power supply	Erratic operation	Replaced power supply	None	4
20	Reactor Safety	Neutron monitor channel #1	Corrective	Faulty amplifier tubes	Spurious signals	Replaced faulty tubes	None	2
27	Reactor Safety	Neutron monitor channel #1	Corrective	Faulty power supply	Spurious trip	Replaced power supply	None	4
May 3	Monitoring	Stack gas monitor recorder	Corrective	Dirty recorder slidewire and low battery voltage	Erratic operation	Cleaned slidewire and changed battery	None	3

TABLE I-C (cont'd)

DRESDEN UNIT #1 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 9	Emergency Core Cooling	Diesel Fire pump engine	Corrective	Engine setting and tolerance change.	Failure to start	Engine overhaul	None	30 Hrs.
15	Monitoring	River discharge recorder	Corrective	Faulty chart drive motor	Incorrect response	Replaced chart drive motor	None	3
17	Dew Cell Sampling	Dew Cell sample pump	Corrective	Oversized vacuum pump	Motor failed	Installed new pump and motor.	None	5
June 10	Electrical	Diesel generator batteries	Preventative			Replaced all batteries		6
10	Electrical	Diesel generator water circulation pump.	Corrective	Faulty mechanical.	Diesel coolant leakage.	Replaced mechanical seal.	None	4
11	Containment	"A" sphere inlet ventillation valve	Corrective	Valve seat torn and cracked.	Valve leakage	Replaced valve seat	None	12

DRESDEN NUCLEAR POWER STATION

SEMI-ANNUAL REPORT

JANUARY 1, 1972 THROUGH JUNE 30, 1972

SECTION II: DRESDEN UNIT #2 OPERATIONS AND MAINTENANCE

II. UNIT #2

A. Introduction

Dresden Nuclear Power Station Unit #2 continued to be base loaded at 500 MWe until February 19, 1972 when the unit was shutdown for its second refueling outage. Major efforts during the outage included replacement of 509 fuel assemblies, replacement of 15 LPRM strings, reworking 80 control rod drives, turbine inspection and modification, numerous plant modifications, torus painting and primary system inservice inspection. A containment integrated leak rate test was performed and the unit was returned to service on May 10, 1972, upon completion of the outage. The reactor was made critical and power was subsequently increased in a stepwise fashion to 100% power in accordance with the startup test program.

B. Operating Data

A brief summary of the nuclear and electrical operating data for the first half of 1972 is presented below. A more detailed summary, on a monthly basis, is provided in Table II-A and Figures II-A through II-F.

A list of all reactor scrams and shutdowns, and their causes, is provided in Table II-B. The unit down time following these shutdowns is also included.

Gross Thermal Generation	158,492.5 MWDt
Gross Electrical Generation	1,232,302.0 MWHe
Net Electrical Generation	1,161,839.0 MWHe
Number of Criticals	12
Number of Scrams from critical	10
Hours Generator operated	2192.0 hours

C. Maintenance

A tabular summary of maintenance on systems and components designed to prevent or mitigate consequences of nuclear accidents is set forth in Table II-C.

D. Facility Changes

Pursuant to the reporting requirements of paragraph 50.59 (b) of 10 CFR Part 50, a brief description of facility changes made during the first half of 1972 without prior commission approval follows:

1) Reactor Building Door Interlock By-Pass Switch

A weatherproof type door interlock by-pass switch was installed outside door #75 (on turbine building roof side) and wired in series with the existing by-pass switches.

This bypass switch will prevent personnel from being trapped on the turbine building roof if the door interlock malfunctions. This change does not involve any safety related components or equipment.

2) Feedwater Control Valve Air Accumulator

The feedwater control valves have had larger air lines and air accumulators installed to increase the air supply and thereby eliminate spurious low pressure lock-up of the valves.

With the present settings, no air pressure problems have been experienced.

This modification presents no safety problems that have not been reviewed.

3) HPCI Turbine Stop Valve Position Indication

The HPCI turbine stop valve not reset and control valve full closed condition is now observable from the main control room on panel 902-3. An indicating light was installed with appropriate markings in order to inform operations when a HPCI turbine may be initiated. This change does not involve an unreviewed question since it does not degrade the HPCI system but does provide the operator with additional information regarding system operability.

4) Fire Protection For T.G. Bearing #10 and Exciter

The outboard turbine generator bearing #10 and exciter are now protected against fire by the Cardox Fire Protection System. To insure proper pressurization of the concerned bearing area, metal cover plates were attached to the floor opening around the outboard portion of the bearing to eliminate any escape route for the CO_2. This modification presents no safety problems that have not been reviewed.

5) CRD Drain Vacuum Valve

The scram discharge volume was developing a partial vacuum in the line while being drained down after a scram. This problem resulted in allowing trapped water in the line to run back into the scram discharge volume and reinitiate the high level alarm. The vacuum relief valves were installed immediately down stream of the CRD vent valves; they are spring loaded, carbon steel, ball check valves which are normally closed and operate only in the event of vacuum build-up in the line. The valves and piping are in the low pressure portion of the system and are of the same quality and material specifications as the existing equipment.

Installation of this hardware does not compromise system operation or constitute an unreviewed safety item.

6) Corrosion Test Loop Valves

Necessary wiring changes were made to provide an interlock to corrosion test loop valves 5001-1,2,3, & 4 that will close the valves or prevent their opening when there is a group 3 isolation signal present. This change does not involve safety related components or equipment.

7) Automatic Reactor Feed Pump Trip

In order to provide safeguards against overfilling of the reactor vessel, the necessary logic was installed to automatically trip the reactor feed pumps when a high water level in the reactor occurs. This function is a 2 out of 2 logic circuit.

A RFP trip "override" switch will be provided.

This change does not involve safety related components or equipment.

8) Refueling With Gadolinia Bearing Fuel

The replacement fuel used consisted of 509 DN type assemblies containing 2 gadolinia rods per assembly.

A detailed description, analyses and safety evaluation is presented in References 1 and 2.

Following reconstitution of the core, shutdown margin tests were satisfactorily conducted as required by the Technical Specifications.

TABLE II A

Dresden Unit 2 Operating Summary - 1972

Month	Hours Critical Hrs:Min	Hours Generator On-Line Hrs:Min	Core Thermal Power MWDt	Gross Electric Power MWHe	Net Electric Power MWHe	Number of Scrams & Shutdowns	Number of Times Critical	Duration of Downtime Hrs:Min
January	744:00	744:00	49,258.5	380,968.0	361,560.0	0	0	0
February	438:15	436:20	28,907.9	219,691.0	206,037.0	1	1	257:45
March	0:00	0:00	0.0	42.0	-4,150.0	0	0	744:00
April	0:00	0:00	0.0	25.0	-2,250.0	0	0	719:00
May	489:42	438:17	27,560.2	212,955.0	200,552.0	6	6	254:18
June	609:04	573:21	52,765.9	418,621.0	400,090.0	5	5	110:56
Totals	2281:01	2191:58	158,492.5	1,232,302.0	1,161,839.0	12	12	2085:59

Critical Date	Critical Time	Subcritical Date	Subcritical Time	Scram	Down Time	Reason for Shutdown
--	--	2/19	0515	No	257 hrs.45 min.	Second refueling outage.
2/24	0600	2/24	0700	No	1677 hrs.04 min.	Shutdown margin checks, second refueling outage.
5/09	2204	5/09	2305	No	2 hrs.10 min.	Trouble with control rod insert/withdraw switch.
5/10	0115	5/10	1916	Yes	1 hrs.29 min.	Reactor scram from IRM Hi Hi signal - trouble shooting EHC system opened and closed bypass valves.
5/10	2045	5/18	2200	Yes	32 hrs.48 min.	Turbine trip from 75% power. (Startup Testing)
5/20	0648	5/23	0933	Yes	3 hrs.47 min.	Group I isolation resulting from trouble shooting #3 control valve.
5/23	1320	6/12	1035	No	41 hrs.30 min.	Condenser tube leak.
6/14	0405	6/16	1051	Yes	9 hrs.57 min.	Spurious turbine trip.
6/22	0958	6/22	1615	No	9 hrs.43 min.	Reactor scram - Low EHC oil pressure sensors at the turbine control valves caused the"load reject relays to operate - EHC oil pressure oscillation during turbine surveillance.
6/23	0455	6/25	0941	Yes	12 hrs.40 min.	Steam leak in X-area.
6/26	2247	--	--	--	37 hrs.06 min.	Reactor scram from Group I isolation. Broken fitting on test pilot bled the air off the valve operator causing 1B MSIV to close.
TOTAL DOWNTIME					2085 hrs.59 min.	

TABLE II-C

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
December 27/71	Electrical	250 volt battery charger.	Corrective	A bad diode and resistor in charger.	Charger inoperable.	Replaced diode and resistor with new ones.	None-other charger remained operable.	16 hr.
January 3	Primary	Electromatic 203-3C	Corrective	Control switch malfunction	Valve would not operate in auto	Switch replaced	None-still had manual and auto blowdown capability.	16 hr.
6	Electrical	2B recirc. pump MG set.	Preventative	Brushes on MG set shorted.	None	Replaced the brushes.	None	4 hr.
13	Electrical	2/3 diesel generator	Preventative	None	None	Routine Inspection	None	18 hr.
18	Electrical	2 diesel generator	Preventative	None	None	Routine Inspection	None	5 hr.
February 28	Containment	Reactor vessel head nut #25	Corrective	Manufacturing defect	Failed ultrasonic test.	Replaced with new nut.	None	10 hr.
March 2	Electrical	2 diesel generator	Corrective	Lower air motor had bad rear bearings.	Diesel would not start in automatic.	Lower air motor was replaced.	None-unit in cold shutdown	16 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
March 4	Containment	Torus vacuum breaker check valves.	Corrective	Bushings of valves were dirty.	Several valves were stiff and would not operate freely.	Bushings were removed, cleaned and machined where needed.	None	200 hr.
6	Emergency Core Cooling	LPCI valve 1501-25B indicating light.	Corrective	Improper position switch setting.	Position indication incorrect.	Position switch reset.	None	48 hr.
6	Primary	MSIV 203-1B	Corrective	Closed Position limit switch	Improper position indication.	Repaired switch	None	16 hr.
6	Containment	Condenser off gas valves 5401-A&B	Corrective	Valve would sometimes overtravel in open position and bind.	Valves would not close.	Disassembled valve operator and installed a slug in open direction (shortened open stroke by 1").	None-unit in cold shutdown	32 hr.
15	Reactor Protection System	Rod block monitor #8	Corrective	Bad proportional amplifier in driver card.	Gave rod blocks	Proportional amplifier was replaced;RBM recalibrated.	None-failure in safe direction.	5 hr.
15	Reactor Protection System	APRM Channel #5	Corrective	Drilling by electrical contractors in a nearby panel.	Spurious trip gave a half scram.	Investigation-no instrumentation problem could be identified.	None	1 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
March 22	Control Rod Drives	Accumulators 30-03&22-31	Corrective	Inside of accumulators were pitted and rough	Accumulators leaked by and would not hold charge.	Accumulators were replaced	None	32 hr.
22	Control Rod Drives	Scram valve for 22-31	Corrective	Teflon seat was bad.	Valve leaked through causing drive to drift.	Valve was removed and a new seat installed.	None	8 hr.
23	Control Rod Drives	2B CRD pump	Corrective	Bushings worn, casing rings worn, & impeller wearing rings worn.	Pump was pulling high amps & running hot.	A new rotating element was installed with new style bushings and bearings.	None	200 hr.
23	Emergency Core Cooling	Core spray flow meter.	Corrective	Zero drift on meter.	Gave indication with no flow on system.	Rezeroed the indicator and checked calibration of the meter with its transmitter.	None	3 hr.
26	Electrical	#2-250 volt battery charger.	Corrective	Bad diodes	Charger would not charge.	Replaced bad diodes	None	12 hr.
27	Electrical	#2/3-250 volt battery charger	Corrective	Bad diode	Charger would not charge.	Replaced bad diode	None	16 hr.
28	Primary	Pilots & solenoids on MSIV 203-1D.	Preventative	None	None	Cleaned pilot piston and pilot sleeve.	None	32 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
March 28	Primary	Pilots & solenoids on MSIV 203-2A.	Preventative	None	None	Cleaned pilot piston and piston sleeve. Replaced core assembly, disc holders & gaskets.	None	32 hr.
28	Primary	Pilots & solenoids on MSIV 203-2B.	Preventative	None	None	Replaced core assembly, disc holders & gaskets.	None	32 hr.
28	Primary	Pilots & solenoids on MSIV 203-2C.	Preventative	None	None	Cleaned pilot piston & sleeve. Replaced core assembly, disc holders & gaskets.	None	32 hr.
28	Primary	Pilots & solenoids on MSIV 203-2D	Preventative	None	None	Cleaned pilot piston. Replaced core assembly, disc holder & gaskets.	None	32 hr.
31	Emergency Core Cooling	LPCI valve MO-1501-21A	Corrective	Improperly set time delay relay.	Valve stays open too long.	Replaced time delay relay.	None	6 hr.
April 4	Primary	Pilot & solenoids on MSIV 203 .	Preventative	None	None	Cleaned piston sleeve. Repaired limit switch.	None	32 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 4	Primary	Pilot & solenoid on MSIV 203-1B.	Preventative	None	None	Cleaned piston & piston sleeve. Replaced core assembly, disc holders & gaskets.	None	32 hr.
7	Primary	Pilot & solenoid on MSIV 203-1A	Preventative	None	None	Cleaned pilot piston. Replaced core assembly, disc holders & gaskets.	None	32 hr.
10	Control Rod Drive.	Accumulator #46-19 pressure gauge.	Corrective	Pressure in accumulator was zero. Accumulator was not charged.	Pressure indication of zero on gauge.	The gauge was recalibrated and the accumulator recharged.	None	2 hr.
11	Emergency Core Cooling	LPCI service water dp indication.	Corrective	Improper calibration of dp instrument.	Incorrect indication on meter.	Recalibrated all four dp transmitters.	None	7 hr.
12	Electrical	2 diesel generator.	Preventative	None	None	Routine Inspection	None	16 hr.
18	Containment	Vent valve 1601-20B	Corrective	Rubber seat cracked & torn.	Allowed leakage.	Cleaned parts. Replaced valve with rebuilt from factory. Replaced gaskets.	None-mechanical valve in series was operable.	80 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 20	Primary	Electromatic relief 203-3A pilot valve.	Preventative	None	None	Cleaned & lapped seat. Cleaned parts. Peplaced gaskets.	None	16 hr.
20	Primary	Electromatic relief 203-2B pilot valve.	Preventative	None	None	Cleaned & lapped seat. Cleaned parts. Replaced gaskets.	None	24 hr.
20	Primary	Electromatic relief 203-2C pilot valve.	Preventative	None	None	Cleaned & lapped seat. Cleaned parts. Replaced gaskets.	None	32 hr.
20	Primary	Electromatic relief 203-2D pilot valve.	Preventative	None	None	Cleaned & lapped seat. Cleaned parts. Replaced gaskets.	None	16 hr.
20	Primary	Electromatic relief 203-2E pilot valve.	Preventative	None	None	Cleaned & lapped seat. Cleaned parts. Replaced gaskets.	None	24 hr.
21	Containment	Vent valve 1601-56	Corrective	Rubber seat cracked & torn.	Allowed leakage.	Cleaned parts. Replaced valve with one from Quad Cities Station. Replaced gaskets.	Would have permitted some leakage to the secondary containment in the event of an accident.	80 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 21	Containment	Vent valve 1601-22	Corrective	Rubber seat cracked & torn.	Allowed leakage.	Cleaned parts. Replaced valve with rebuilt from factory. Replaced gaskets.	Would have permitted some leakage to the secondary containment in the event of an accident.	80 hr.
21	Containment	Vent valve 1601-21	Corrective	Rubber seat cracked & torn.	Allowed leakage.	Cleaned parts. Replaced valve with rebuilt from factory. Replaced gaskets.	Would have permitted some leakage to the secondary containment in the event of an accident.	80 hr.
23	Emergency Core Cooling	LPCI valve MO-1501-20A	Corrective	Limit switch found open	Valve would not open.	Cleaned limit switch.	None	8 hr.
23	Primary	Safety valve 203-4A	Preventative	None	None	Replaced valve with rebuilt. Cleaned & replaced gaskets.	None	80 hr.
23	Primary	Safety valve 203-4B	Corrective	Ruptured diaphragm	None	Cleaned & replaced ruptured diaphragm.	None	16 hr.
25	Emergency Core Cooling	HPCI valve 2-2301-4	Corrective	Dirty contact	Valve failed to open.	Cleaned contacts	None	6 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 23	Primary	Safety valve 203-4C.	Preventative	None	None	Replaced valve with rebuilt. Cleaned and replaced gaskets.	None	80 hr.
23	Primary	Safety valve 203-4E	Corrective	Ruptured diaphragm.	None	Cleaned & replaced ruptured diaphragm.	None	16 hr.
23	Primary	Safety valve 203-4F	Preventative	None	None	Replaced valve with rebuilt. Cleaned and replaced gaskets.	None	80 hr.
23	Primary	Safety valve 203-4H	Preventative	None	None	Replaced valve with rebuilt. Cleaned and replaced gaskets.	None	80 hr.
25	Emergency Core Cooling	LPCI valve MO-1501-13A	Corrective	Worm gear in operator worn out.	Valve would not operate	Replaced worn parts for worm gears.	None	32 hr.
25	Standby Liquid Control	Emergency Explosion Valves	Preventative	None	None	Test and Inspection	None	48 hr.
May 2	Emergency Core Cooling	HPCI turbine	Corrective	Loose wire to turbine reset solenoid.	Turbine would not reset.	Loose wire reconnected.	None	12 hr.
1	Containment	"C" TIP machine ball valve.	Corrective	Insufficient spring tension on valve.	Valve would not close	Increased spring tension on valve.	None	24 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completio
May 6	Reactor Protection System	IRM Cha.#14	Corrective	Zener diode in calibrate and logic unit failed.	False reading on the IRM	Zener diode CR-3 was replaced.	None	8 hr.
6	Reactor Protection System	IRM Cha.#11	Corrective	Loose input cable connection	False readings on recorder and meter.	Loose input cable was tightened.	None	2 hr.
6	Control Rod Drive	CRD module 46-15	Corrective	Internal damage to nitrogen valve 177 and damage to conduit box.	Unable to charge accumulator	Repaired conduit box and nitrogen valve.	None	18 hr.
6	Primary	Pilot and solenoid for MSIV 2-203-2D	Corrective	Pilot valve solenoid leaking air out exhaust port.	Air leaking out of exhaust port.	Removed and cleaned internals of solenoid. Replaced copper tubing.	None	16 hr.
6	Isolation Condenser	Isolation condenser valve 1301-14	Corrective	Packing no good.	Valve packing leak.	Repacked valve and lubricated stem.	None	16 hr.
9	Standby Liquid Control.	Explosive valves.	Preventative	None	None	Test and Inspection	None	40 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 9	Containment	Valve 220-62B	Corrective	Improper seat to disc fit.	Would not hold for air test.	Changed valve trim, machined seal ring, cleaned parts.	Remote possibility of leakage to secondary containment in event of an accident.	300 hr.
9	Containment	Valve 220-58B	Corrective	Improper seat to disc fit.	Would not hold for air test.	Lapped disc to seat, lapped seal ring, cleaned parts.	Remote possibility of leakage to secondary containment in event of an accident.	150 hr.
9	Primary	Valves 202-6A&6B	Preventative	None	None	Reinforced bonnet leak off lines.	None	80 hr.
12	Electrical	#2 diesel generator	Preventative	None	None	Routine Inspection	None	16 hr.
16	Standby Liquid Control	B Squib Valve	Corrective	Light bulb out in B Squib alarm.	False annunciation.	Replaced bulb.	None	6 hr.
17	Control Rod Drive	Accumulator 46-19	Corrective	N_2 fill connection leaking.	Required frequent charging.	Replaced N_2 connection.	None	8 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 19	Containment	Drywell outer door on personnel lock.	Corrective	Door hard to operate.	None	Cleaned and lubricated door parts, adjusted motor and micro switch.	None-inner door leaktight.	8 hr.
19	Standby Liquid Control	A&B standby liquid control pumps.	Corrective	Pump cover gaskets leaking	Slight leakage. Pumping capacity still within Specs.	Cleaned covers and replaced 4 cover gaskets.	None	8 hr.
19	Isolation Condenser	Isolation Condenser valve 1301-44	Corrective	Bad packing	Packing leak	Repacked valve, replaced gland studs and nuts.	None	16 hr.
19	Isolation Condenser	Isolation Condenser valve 1301-15	Preventative	None	None	Tighten packing	None	4 hr.
19	Emergency Core Cooling	HPCI steam line drain pot.	Corrective	Deteriorated bonnet gasket	Steam leak	Removed and cleaned steam trap, installed new bonnet gasket.	None	8 hr.
19	Emergency Core Cooling	HPCI testable check 2301-7	Corrective	Bad packing	Packing leak	Repacked with new packing, replaced flexitalic gasket.	None	32 hr.
19	Control Rod Drive	Accumulator 46-19	Corrective	Leaking fittings	Accumulator N_2 charge bleeds down about once per shift.	Tighten up on three fittings on N_2 side.	None	16 hr.

TABLE II-C(cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 19	Containment	2B torus purge fan breaker.	Corrective	Burned out light bulbs for indication.	No indication	Replaced light	None	4 hr.
20	Secondary Containment	Interlock doors 517' level-north door.	Corrective	Door operator failure.	Door would not open.	Installed new type door operator.	None	64 hr.
22	Emergency Core Cooling	LPCI valve 1501-21	Modification	None	None	Installed new worm gear and motor.	None	32 hr.
24	Emergency Core Cooling	HPCI turbine turning gear indicating lights.	Correction	Limit switches out of adjustment.	Turning gear position indicating lights not working.	Adjusted limit switches.	None	8 hr.
26	Control Rod Drive	CRD module 30-11, valve 302-111	Corrective	Damaged bonnet	Valve leak	Replaced packing, disc, "O" rings and remachined bonnet.	None	8 hr.
June 1	Control Rod Drive	Accumulator 46-07	Corrective	Broken "O" rings.	Frequent High water alarms.	Installed new "O" rings and teflon rings.	None	16 hr.
1	Isolation Condenser	Isolation condenser valve 1301-10	Modification	None	None	Installed new worm gear and motor.	None	16 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
June								
1	Emergency Core Cooling	LPCI valve 1501-19B	Modification	None	None	Installed new worm gear and motor.	None	16 hr.
1	Emergency Core Cooling	LPCI valve 1501-19A	Modification	None	None	Installed new worm gear and motor.	None	16 hr.
1	Emergency Core Cooling	LPCI valve 1501-13B	Modification	None	None	Installed new worm gear and motor.	None	16 hr.
1	Emergency Core Cooling	LPCI valve 1501-13A	Modification	None	None	Installed new worm gear and motor.	None	16 hr.
6	Electrical	#2/3 diesel generator	Preventative	None	None	Routine Inspection	None	16 hr.
12	Electrical	#2 diesel generator	Preventative	None	None	Routine Inspection	None	8 hr.
13	Reactor Protection System	Recirc. flow transmitter dPT-2-261-6C	Corrective	Flow mismatch due to zero drift in transmitter.	APRM flow bias scram setpoint drifted low.	Flow transmitter was replaced with spare transmitter.	None	8 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
June 13	Reactor Protection System	Pressure switch 261-30-C test line.	Corrective	Sensing line was damaged.	Leakage	Removed damaged line from system and replaced with new line.	None-Reactor in cold shutdown.	36 hr.
14	Containment	MSIV 203-1B	Corrective	Failed test solenoid.	Valve went fully closed and then re-opened automatically during test.	New test solenoid was installed.	None	10 hr.
14	Emergency Core Cooling	HPCI high pressure steam trap.	Corrective	Bad gasket	Steam leak	Replaced with new gasket.	None	6 hr.
19	Control Rod Drive	Rod D-13 rod selector matrix button.	Corrective	Dirty switch.	Rod would not move from position 46 to position 48.	Cleaned button contacts with spray cleaner.	None	6 hr.
25	Primary	MSIV 203-1B	Corrective	Broken nipple on pilot, test pilot sticking.	Air leak, valve closure, and reactor scram.	Repaired broken nipple, cleaned test pilot assembly.	None	16 hr.
26	Containment	Clean up system valve 1201-1.	Corrective	Loose packing.	Packing leak.	Tighten packing.	None	2 hr.
26	Containment	Shutdown cooling valve 1001-1A.	Corrective	Loose packing.	Packing leak.	Tighten packing.	None	2 hr.

TABLE II-C (cont'd)

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
June 26	Containment	Shutdown cooling valve 1001-1B.	Corrective	Loose packing.	Packing leak.	Tighten packing.	None	2 hr.
26	Containment	Shutdown cooling valve 1001-1B.	Corrective	Improper torque switch settings.	Valve would not open.	Changed torque switch settings.	None	8 hr.
27	Containment	Steam drain isolation valve 220-2	Corrective	Breaker overload was tripped, reset button to short to function.	Valve motor would not operate.	Reset overload, extended reset button.	None	8 hr.
27	Emergency Core Cooling	HPCI valve MO-2301-4	Corrective	Interlock between 2301-4 & 2301-5 was jumpered.	2301-4 would open even through 2301-5 was shut.	Removed jumper	None	8 hr.

FIGURE IIA

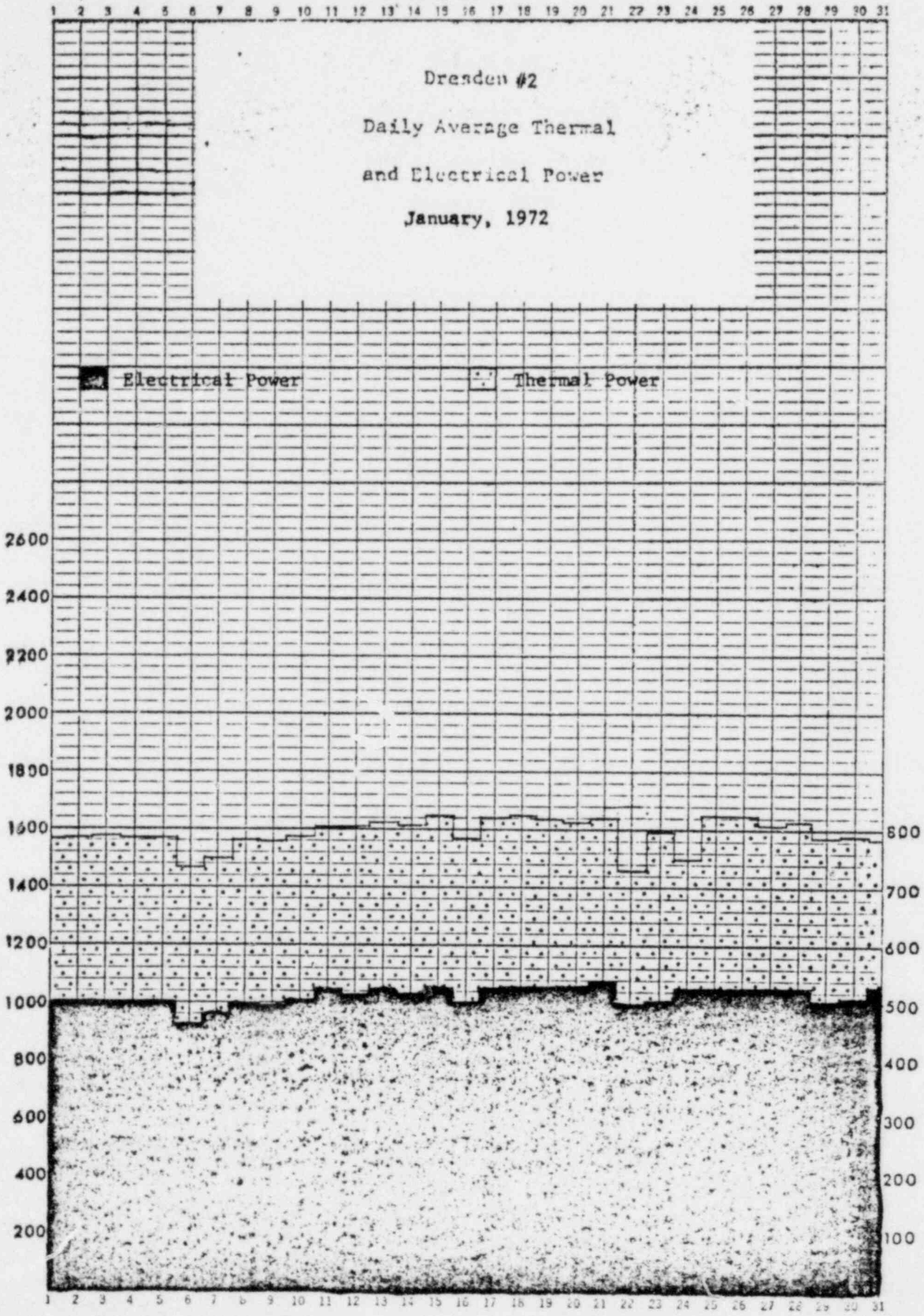


FIGURE IIB

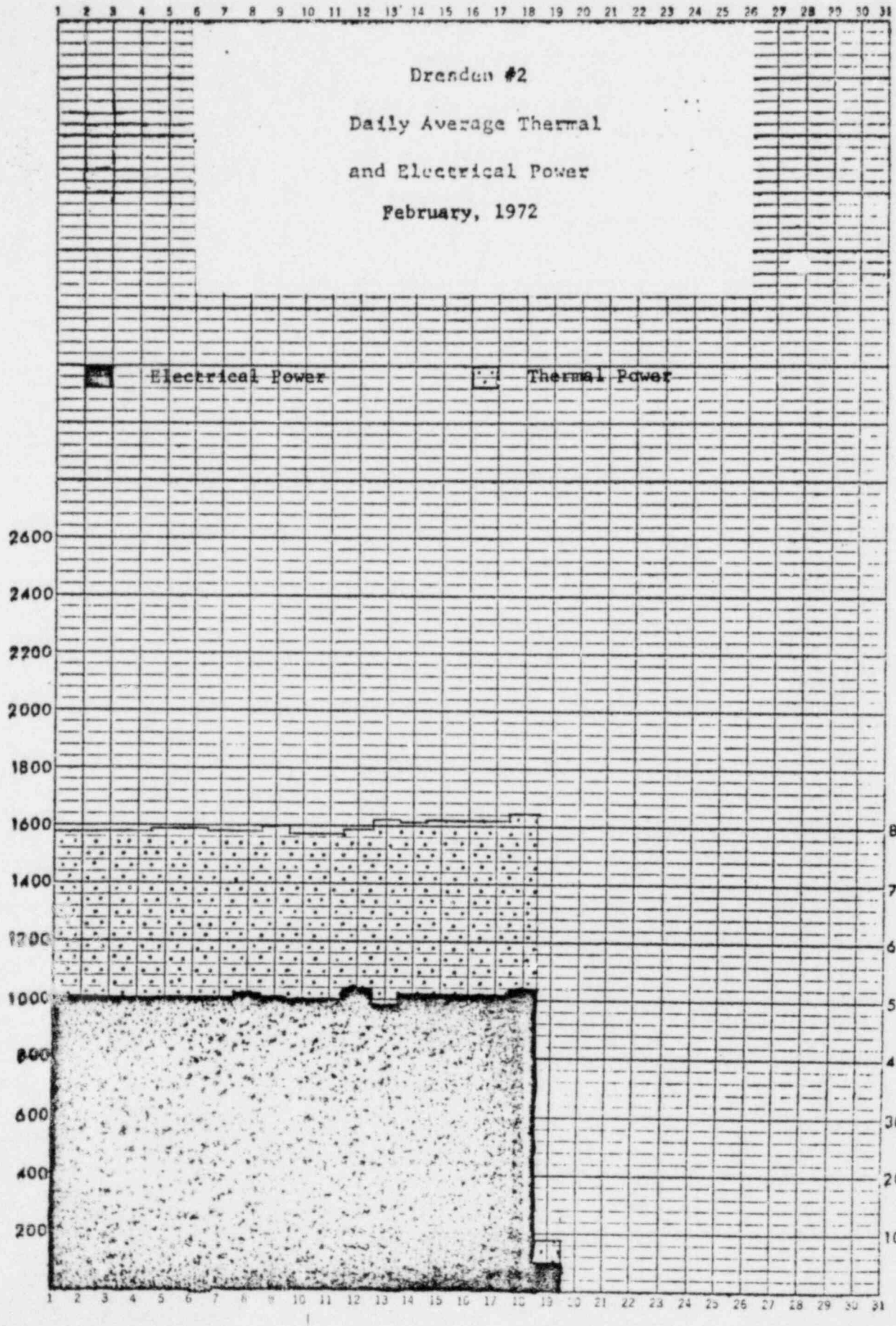


FIGURE IIC

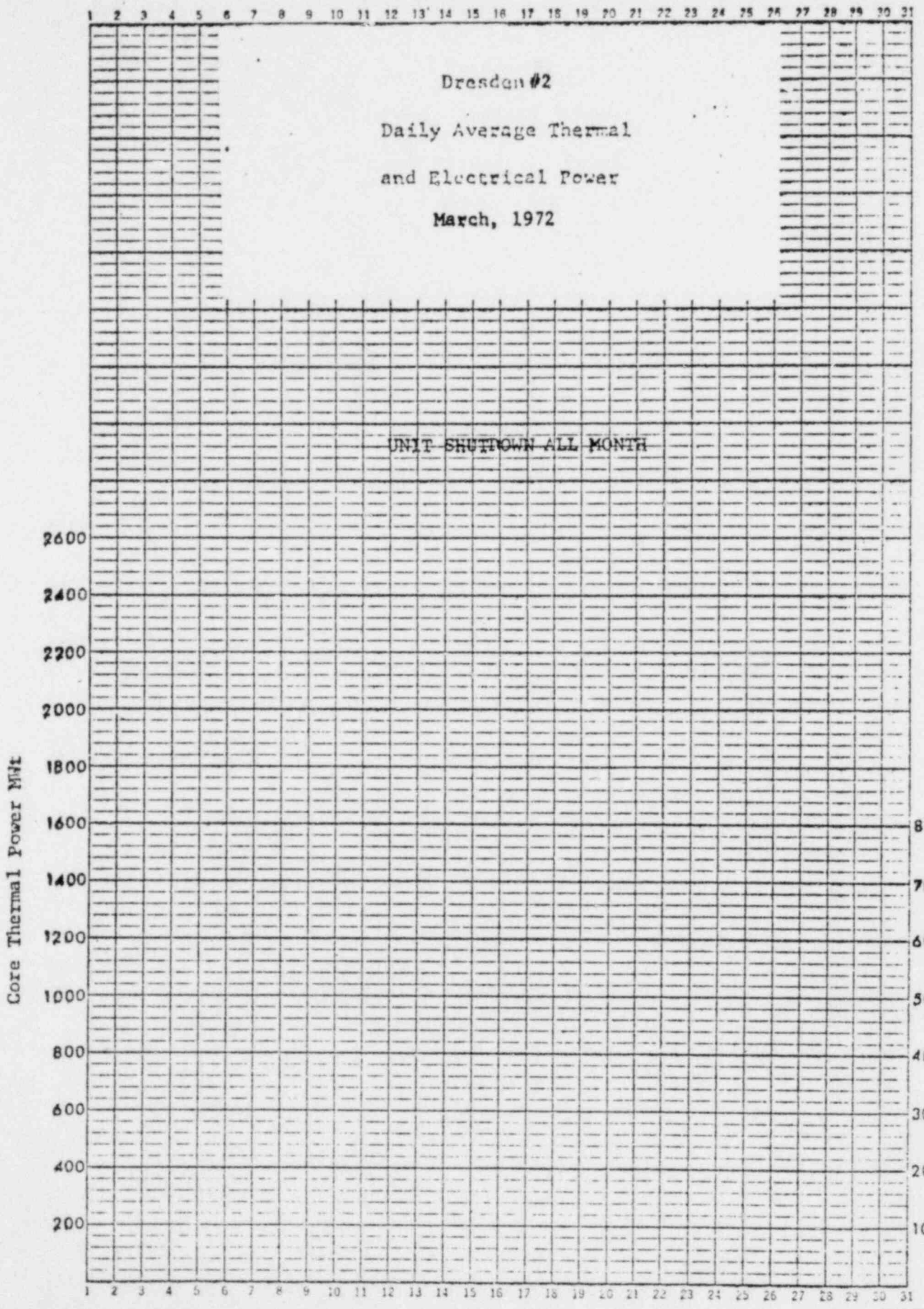


FIGURE XID

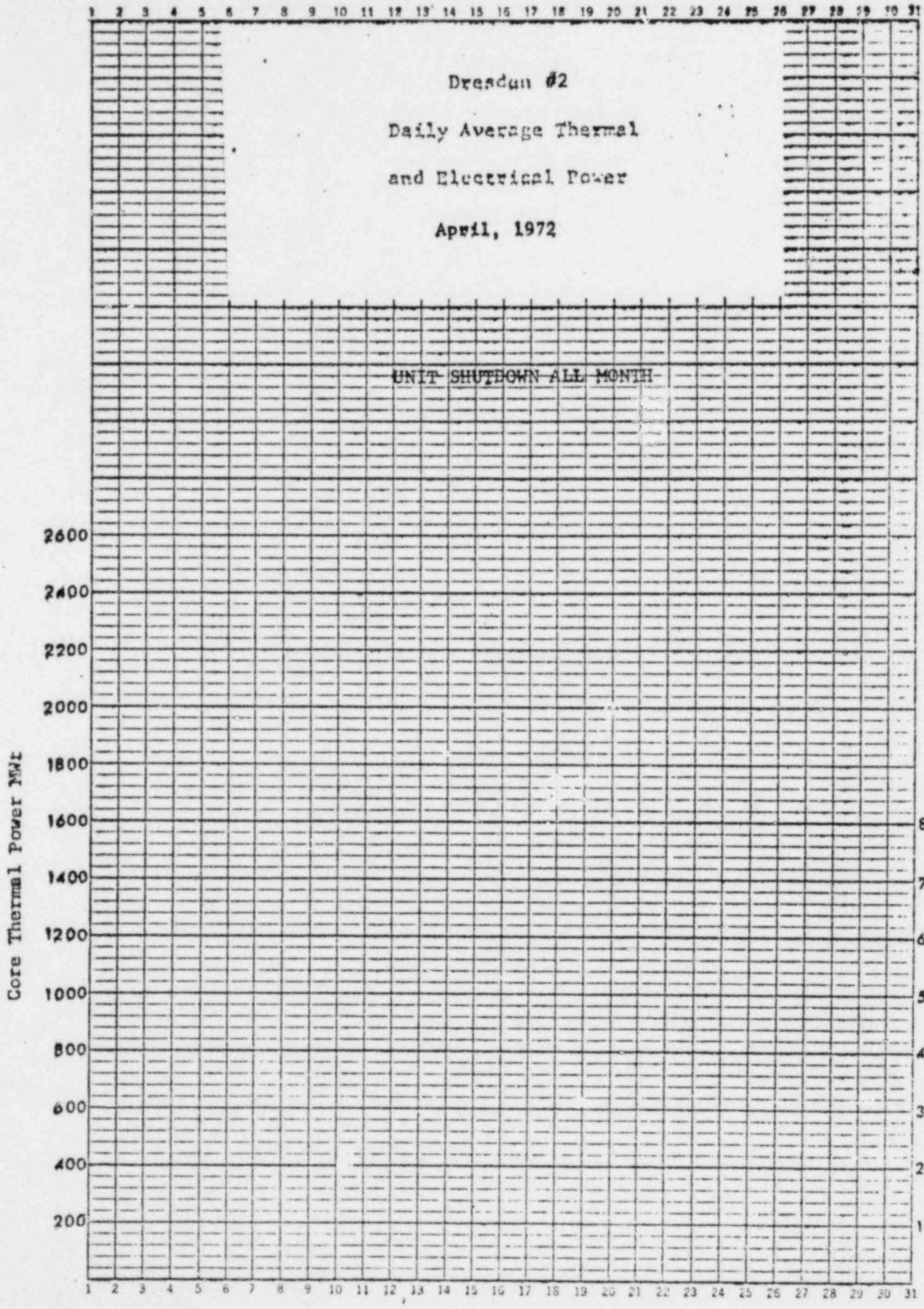


FIGURE IIE

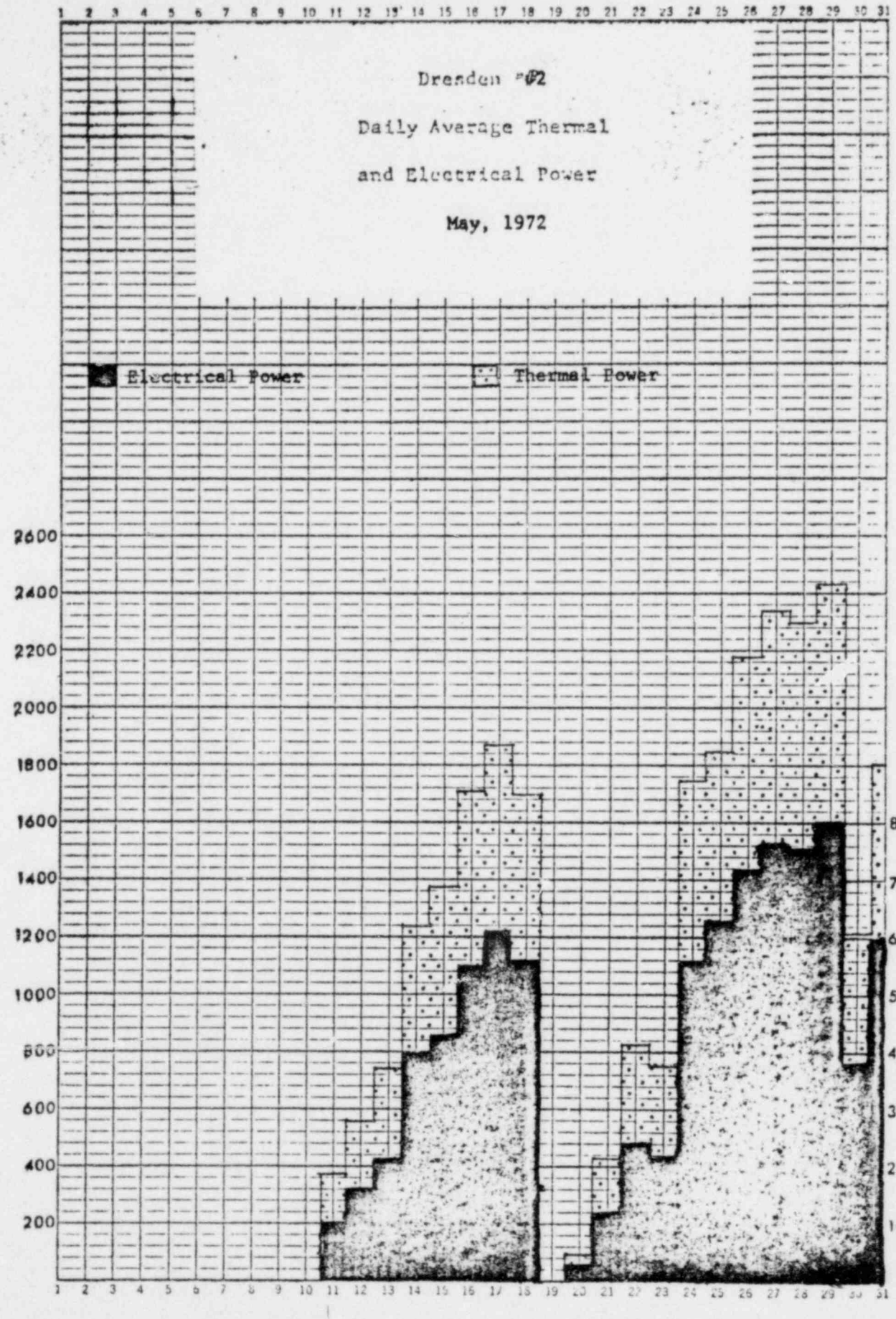
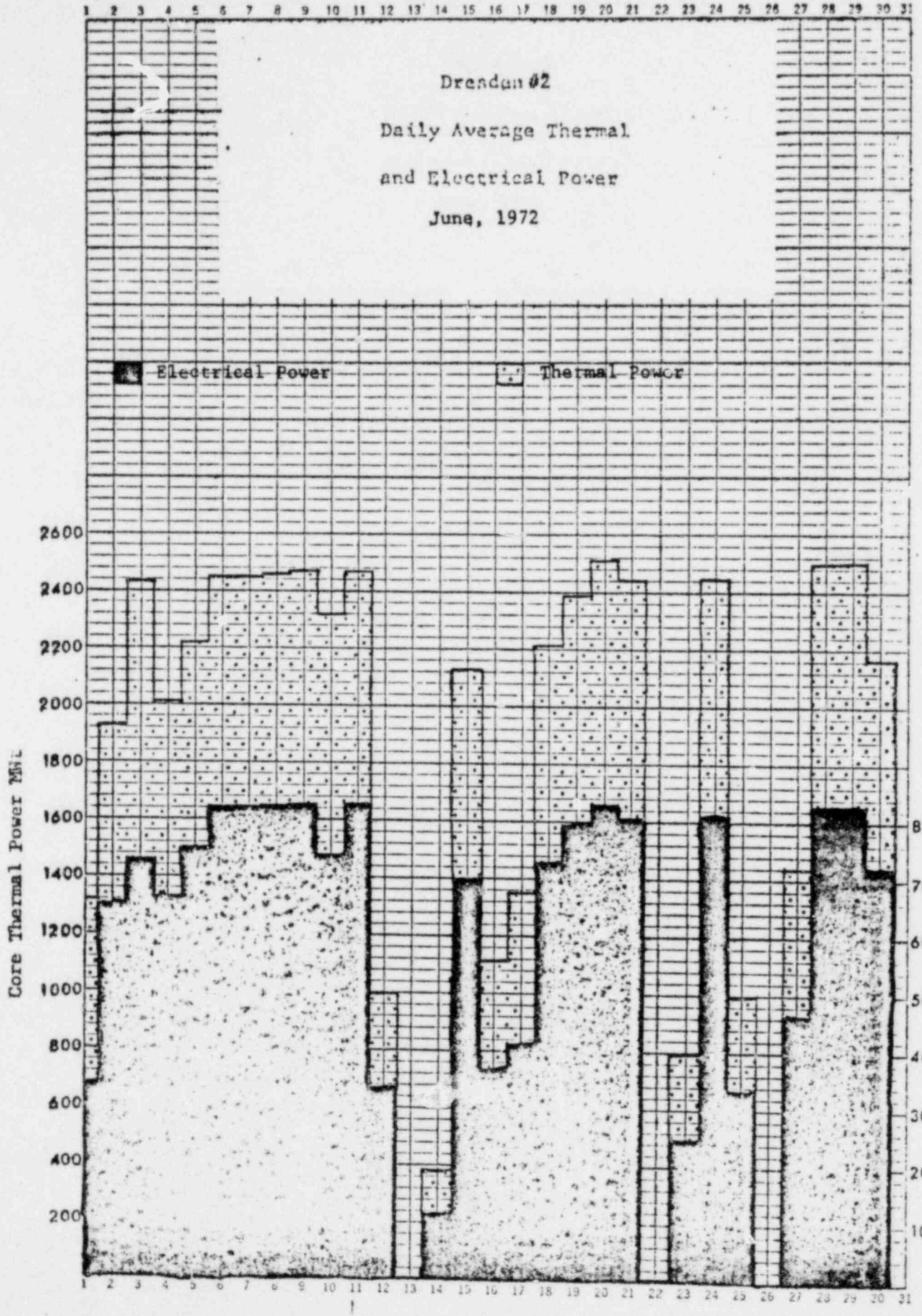


FIGURE XIF



DRESDEN NUCLEAR POWER STATION

SEMI-ANNUAL REPORT

JANUARY 1, 1972 THROUGH JUNE 30, 1972

SECTION III: DRESDEN UNIT #3 OPERATIONS AND MAINTENANCE

III. UNIT #3

A. Introduction

Dresden Nuclear Power Station Unit #3 operated the entire reporting period base loaded at 800 MWe. The unit did, however, operate at varying power levels when dictated by system requirements, equipment operation, and routine testing.

B. Operating Data

A brief summary of the nuclear and electrical operating data for the first half of 1972 is presented below. A more detailed summary, on a monthly basis, is provided in Table III-A and Figures III-A through III-F.

A listing of all reactor scrams and shutdowns, and their causes, is provided in Table III-B. Unit down time following these shutdowns is also included.

Gross thermal generation	297,679.5 MWD_t
Gross electrical generation	2,494,955.0 MWe
Net electrical generation	2,388,372.0 MWe
Number of Criticals	14
Number of Scrams from Critical	4
Hours generator operated	3574.8 hours

C. Maintenance

A tabular summary of maintenance on systems and components designed to prevent or mitiate the consequences of nuclear accidents is set forth in Table III-C.

D. Facility Changes

Pursuant to the reporting requirements of paragraph 50.59 (b) of 10CFR Part 50, a brief description of facility changes made during the first half of 1972 without prior commission approval follows:

1. Reactor Building Door Interlock By-pass Switch: Described in Section II.D.1 of this report.

2. Feedwater Control Valve Air Accumulator: Described in Section II.D.2 of this report.

3. HPCI Turbine Stop Valve Position Indication: Described in Section II.D.3 of this report.

4. Fire Protection For T.G. Bearing #10 and Exciter: Described in Section II.D.4 of this report.

TABLE III A

Dresden Unit 3 Operating Summary - 1972

Month	Hours Critical Hrs: Min.	Hours Generator On-Line Hrs:Min.	Core Thermal Power MWDt	Gross Electric Power MWHe	Net Electric Power MWHe	Number of Scrams and Shutdowns	Number of Times Critical	Duration of Downtime Hrs: Min.
January	598:14	562:05	42,672.4	362,331.0	345,729.0	4	4	145:46
February	645:29	579:57	46,612.3	390,903.0	373,723.0	1	1	50:31
March	744:00	719:56	64,378.0	540,406.0	519,133.0	0	0	0:00
April	491:45	482:49	41,545.9	347,433.0	332,065.0	1	1	227:15
May	644:26	622:01	53,481.6	444,818.0	426,121.0	1	1	99:34
June	649:24	608:00	48,989.3	409,064.0	391,601.0	4	4	70:36
	3,773:18	3,574:48	297,679.5	2,494,955.0	2,388,372.0	11	11	593:42

Table III-B

Critical Date	Critical Time	Subcritical Date	Subcritical Time	Scram	Down Time	Reason for Shutdown
		1/1	0640		14 hrs. 5 min.	The reactor was shutdown due to a leak on the isolation condenser vent line to the main steam line.
1/1	2045	1/14	2139		49 hrs. 6 min.	Reactor scram as a result of APRM Hi Hi flux following a power increase due to a rapid increase in 3A recirc. pump flow.
1/16	2245	1/21	1245		63 hrs.27 min.	Reactor scram as a result of low water level. The low water level occurred following the loss of the essential service MG set, which caused the feedwater regulating valves to lockup.
1/24	0412	1/24	0423		19 hrs. 8 min.	Reactor was shutdown to repair standby liquid control manual valve.
1/24	2331	2/11	0523		50 hrs.31 min.	Reactor was shutdown to repair valve packing leaks in the drywell. The two valves which were leaking were the cleanup isolation valve MO-3-1201-1, and the 3B recirc. pump discharge bypass valve 3-202-7B.
2/13	0754	4/14	1025		227 hrs.15 min.	Reactor was shutdown to repair a main condenser tube leak.
4/23	2140	5/4	0901		99 hrs.34 min.	Spurious reactor scram. The reactor remained shutdown to repair insulation and replace the safety valve that lifted.
5/8	1235	6/1	0908		12 hrs. 2 min.	The reactor was shut down to repair a high temperature condition in the main transformer isolated phase bus ducts.
6/1	2110	6/10	0210		29 hrs.45 min.	The reactor was shut down to complete transformer repairs and add oil to "B" recirculation pump.

Table III-B (cont'd)

Critical Date	Critical Time	Subcritical Date	Subcritical Time	Scram	Down Time	Reason for Shutdown
6/11	0755	6/24	1055		24 hrs. 52 min.	Reactor scram as a result of low steam line pressure. The servo motor on #2 turbine control valve failed causing the control valve to go open. When load was dropped, the low steam line pressure isolation occurred.
6/25	1147	6/26	0033		3 hrs. 57 min.	Reactor scram due to turbine trip on load reject due to high high level on 3C moisture separator tank.
6/26	0430	--	--			
TOTAL DOWN TIME					593 hrs. 42 min.	

TABLE III-C

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
January								
2	Electrical	250 volt battery ger	Emergency	Failed resistor and diode	Charger tripping out	Replaced failed resistor and diode	None - Unit shutdown	10 hr.
7	Standby Liquid Control	System valves	Preventative	None	None	Tighten valve packing	None	16 hr.
11	ECCS	LPCI valve 3-1501-3A	Corrective	Unbalanced potentiometer	Valve would not open	Ballanced potentiometer.	None	36 hr.
14	Electrical	Diesel generator	Preventative	None	None	Monthly inspection	None	36 hr.
26	Electrical	Battery charger	Preventative	None	None	Replaced diode	None	32 hr.
February								
11	Containment	Equipment drain sump recirculation valve AO-2001-4	Corrective	Relay 2253-41X open coil still OOS.	AO-2001-4 would not open.	Cleaned valve and replaced coil.	None	100 hr.
22	ECCS	HPCI low suction pressure trip switch PS-3-2360.	Corrective	Design error	HPCI pump would have tripped at 50 psig vice 9.4" Hg	Switch wired properly and prints changed.	None	20 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
March 1	Standby Liquid Control	Injection pumps	Preventative	None	None	Replaced packing in pump	None	48 hr.
15	Primary System	Main steam line drain valves 3-220-3, 3-220-4.	Preventative	None	None	Repacked valves	None	40 hr.
29	Primary System	Main steam isolation valve limit switch 3-203-113	Corrective	Misadjusted limit switch.	Relay 590-102C failed to energize	Adjust limit switch.	None	15 hr.
29	ECCS	LPCI system III flow indicator	Corrective	Square root converter out of calibration	False indication of flow	Calibrate square root converter	None	6 hr.
30	ECCS	LPCI cooling water	Corrective	Flow gage out of calibration and snubber clogged.	Gage indicated no flow.	Flow gage calibrated and snubber cleaned.	None	4 hr.
30	Monitoring system	Radwaste to river hi flow.	Corrective	Transmitter output high	Flow reading high	Calibrate flow transmitter	None	6 hr.
31	Reactor Protection System	LPRM panel display	Corrective	Indicator bulbs burned out.	No indication on display	Replace bulbs	None	4 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 16	Containment System	Torus to drywell vacuum breaker 3-1601-32E	Preventative	None	None	Clean and lubricate bushings.	None	16 hr.
16	Containment System	Torus to drywell vacuum breaker 3-1601-32F	Corrective	Bushing thrust face binding	Valve would not operate freely.	Machine thrust face to design tolerance.	None	16 hr.
16	Containment System	Torus to drywell vacuum breaker 3-1601-32C	Corrective	Bushing binding on shaft.	Valve would not operate freely.	Machine bushing to design tolerance.	None	16 hr.
16	Containment System	Torus to drywell vacuum breaker 3-1601-33C	Corrective	Bushing binding on shaft.	Valve would not operate freely.	Machine bushing to design tolerance	None	16 hr.
16	Containment System	Torus to drywell vacuum breaker 3-1601-32D	Preventative	None	None	Clean and lubricate bushings.	None	12 hr.
16	Containment System	Torus to drywell vacuum breaker 3-1601-33A	Preventative	None	None	Clean and lubricate bushings.	None	12 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 10	Reactor Protection System	Group I "B" level LPRM's	Corrective	± 15 volt regulator output high	Group 1 "B" level LPRM's read downscale.	± 15 volt regula- replaced.	None	2 hr.
13	Electrical	Diesel generator	Preventative	None	None	Monthly inspection.	None	32 hr.
15	Containment System	Torus to d ywell cuum breaker 3-1601-33B	Corrective	Bushing thrust face binding	Valve would not operate freely.	Machine thrust face to design tolerance.	None	16 hr.
15	Containment System.	Torus to drywell vacuum breaker 3-1601-33D	Corrective	Bushing binding on shaft.	Valve would not operate freely.	Machine bushing to design tolerance.	None	16 hr.
15	Containment System	Torus to drywell vacuum breaker 3-1601-32B	Corrective	Bushing binding on shaft.	Valve would not operate freely.	Machine Bushing to design tolerance.	None	16 hr
15	Containment System	Torus to drywell vacuum breaker 3-1601-32A.	Corrective	Bushing binding on shaft.	Valve would not operate freely.	Machine Bushing to design tolerance.	None	16 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 16	Containment System	Torus to drywell vacuum breaker 3-1601-33E	Preventative	None	None	Clean and lubricate bushings.	None	12 hr.
16	Containment System	Torus to drywell vacuum breaker 3-1601-33F	Preventative	None	None	Clean and lubricate bushings.	None	12 hr.
16	Rod Position Indication System	Rod position indicator for control rod F-7.	Corrective	Defective micro switches in probe.	No indication for positions 08-18-28-38.	Replace defective probe.	None	4 hr.
17	Reactor Protection System	LPRM 24-57D	Corrective	Dirty cable connector	LPRM reading full scale	Clean connector	None	6 hr.
18	ECCS	HPCI drain bypass A.O. 3-2301-28	Corrective	Diaphragm in air operator leaking.	Valve would still operate properly.	Replace diaphragm	None	16 hr.
18	Primary System	203-4E safety valve rupture disc.	Corrective	Rupture disc ruptured	None	Replace rupture disc.	None	16 hr.
19	Reactor Protection System	IRM #17	Corrective	Open cable at penetration	IRM #17 reading downscale	IRM #17 connected to spare IRM cable at penetration.	None	32 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
April 23	Primary System	3-202-4B suction valve	Corrective	Gate frozen in valve seat.	Valve would not open.	Valve disassembled and cleaned. Changed torque settings on valve operator.	None, Reactor was in shut-down.	350 hr.
25	Standby Liquid Control	Low temperature switch TS 1149	Corrective	Switch calibration drift.	Low temperature alarm would not clear.	Temperature switch recalibrated to specified setpoint of 76°F.	None	6 hr.
26	Control Rod Drive System	Scram valve on control rod G-7	Corrective	Valve leaking through.	Control Rod G-7 would not hold position.	Adjusted stem down one half of a turn.	None	16 hr.
May 1	Reactor Protection System	LPRM 40-[illegible]9A	Corrective	Defective LPRM module.	High indicating light on panel 903-5 illuminated but no high light on panel 903-37.	Replace defective LPRM module.	None	2 hr.
4	Reactor Protection System	RBM channel 8	Corrective	RBM Channel 8 out of alignment.	Intermittent rod blocks.	Recalibrate RBM Channel 8	None	6 hr.
5	ECCS	HPCI valve 3-2301-3	Corrective	Valve packing leak.	None	Repack valve	None	32 hr.

TABLE III-C

DRESDEN UNIT #2 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 5	Primary System	3-203-2A electromatic relief	Corrective	Defective micro switch.	No alarm in control room when valve was open.	Clean and repair micro switch.	None	16 hr.
6	Primary System	3-203-4A safety valve	Corrective	Valve relieved below setpoint.	Pressurize drywell to 2.5 psig.	Replaced valve with a spare valve.	None	200 hr.
6	Isolation Condenser System	Isolation condenser valve 3-1301-3	Corrective	Low torque setting, no contact wipe on N.C. contact in series with open contactor	Isolation condenser inoperable	Reset torque and adjusted contact wipe.	None	32 hr.
6	Containment System	Reactor clean-up system MO-3-1201-1	Corrective	Valve packing leak.	None	Repack valve	None	80 hr.
6	Containment System	Reactor clean-up system valve 3-1291-2B	Corrective	Crack in 3/4" S.S. sch 80 pipe next to weld.	None	Crack welded in accordance with procedure GS-16 and dye penetrant checked.	None	64 hr.
6	Primary System	Main steam isolation valve 3-203-2A	Corrective	Position indication switch arm bent.	No closed indication	Replaced position indication switch arm.	None	32 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 7	Containment System	Torus to drywell vacuum breaker valve 3-1601-32F.	Corrective	Bushing binding on shaft.	Valve would not operate freely.	Machine bushing to design tolerance.	None	16 hr.
8	Reactor Protection System	Reactor level scram Yarway switches LIS-3-263-57B LIS-3-263-58B	Corrective	Switches burned open during testing of the RPS relays.	High level isolation would not clear.	Replaced defective switches.	None, unit in shutdown.	3 hr.
8	Primary System	Safety valve 3-203-4F rupture disc.	Corrective	Rupture disc ruptured.	None	Replace rupture disc.	None	16 hr.
8	Primary System	Safety valve 3-203-4B rupture disc.	Corrective	Rupture disc ruptured.	None	Replace rupture disc.	None	16 hr.
8	Primary System	Safety valve 3-203-4C rupture disc.	Corrective	Rupture disc ruptured.	None	Replace rupture disc.	None	16 hr.
8	Reactor Protection System	Relay 590-10K	Corrective	Wire disconnected from relay.	Low vacuum scram on channel "A"	Replace wire	None	1 hr.
11	Electrical	Unit #3 diesel generator	Preventative	None	None	Monthly inspection.	None	32 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 15	ECCS	Core spray valve MO-3-1402-4A.	Corrective	Low torque setting.	Valve would not close.	Adjust torque setting.	None	20 hr.
18	ECCS	LPCI heat exchanger differential pressure switch.	Corrective	Vibration	No indication	Replaced pointer and calibrated switch.	None	8 hr.
19	ECCS	LPCI valve 3-1501-19B	Corrective	Wear in motor operator.	Valve would not operate remotely.	Installed new worm and worm gear.	None: Valve was opened manually and remained in the open condition.	48 hr.
23	Primary System	Main steam isolation 1A,1B,1C,1D test.	Corrective	Relay 595-112A de-energized.	Test switch would not initiate the 10% closure test.	Energized relay 595-112A.	None	4 hr.
24	ECCS	LPCI valve 3-1501-38B	Corrective	Loss of manual handle.	Valve could not be operated manually.	Replaced key stock and added set screws.	None	16 hr.
24	ECCS	HPCI turning gear indicating lights.	Corrective	Limit switches out of adjustment.	No indication.	Adjusted limit switches.	None	16 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completion
May 25	Reactor Protection	LPRM-32-49B APRM ch.#1	Corrective	Fission chamber not conducting.	LPRM Reading zero.	Fission chamber shocked into conduction.	None	2 hr.
June 1	ECCS	LPCI valve 3-1501-19A	Corrective	Wear in motor operator worm and worm gear.	None	Replaced motor operator with modified worm and worm gear.	None	32 hr.
1	ECCS	LPCI valve 3-1501-19B	Corrective	Wear in motor operator worm and worm gear.	None	Replaced motor operator with modified worm and worm gear.	None	32 hr.
1	ECCS	LPCI valve 3-1501-13A	Corrective	Wear in motor operator worm and worm gear.	None	Replaced motor operator with modified worm and worm gear.	None	32 hr.
1	ECCS	LPCI valve 3-1501-13B	Corrective	Wear in motor operator worm and worm gear.	None	Replaced motor operator with modified worm and worm gear.	None	32 hr.
1	Isolation Condenser System	Isolation Condenser valve 3-1301-10	Corrective	Wear in motor operator worm and worm gear.	None	Replaced motor operator with modified worm and worm gear.	None	32 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effec On Safe Operation Of Reactors	Time For Completion
June 1	Containment System	Drywell air compressor heads.	Corrective	Increased O_2 in drywell.	Excessive air in leakage.	Lapped heads and installed new gaskets.	None	32 hr.
2	ECCS	HPCI turning gear disengage light.	Corrective	Vibration	Light on panel 903-3 inoperable.	Adjusted limit switch.	None	16 hr.
5	Standby Liquid Control	Sparging air regulator.	Corrective	Bolt missing from regulator	Air leak	Replace bolt	None	8 hr.
19	Electrical	Diesel generator	Preventative	None	None	Yearly inspection repair broken aux. relay arm.	None	300 hr.
23	Rod position indicating system	Drive G5 No position display.	Corrective	Defective relay (K1-10-19)	No position display.	Replaced defective relay.	None	6 hr.

TABLE III-C (cont'd)

DRESDEN UNIT #3 MAINTENANCE SUMMARY 1972

Month	System	Component	Type Of Maintenance	Cause Of Malfunction	Effect Of Malfunction	Action Taken To Preclude Recurrence	Effect On Safe Operation Of Reactors	Time For Completio
June 27	Isolation Condenser System	Isolation condenser fill valve 3-1301-10.	Corrective	Dirty contact	No red light indication on valve control.	Clean contacts	None	8 hr.
30	ECCS	3-D LPCI containment cooling pump packing leak.	Corrective	Wear of packing.	Leaking packing.	Repack pump	None	16 hr.

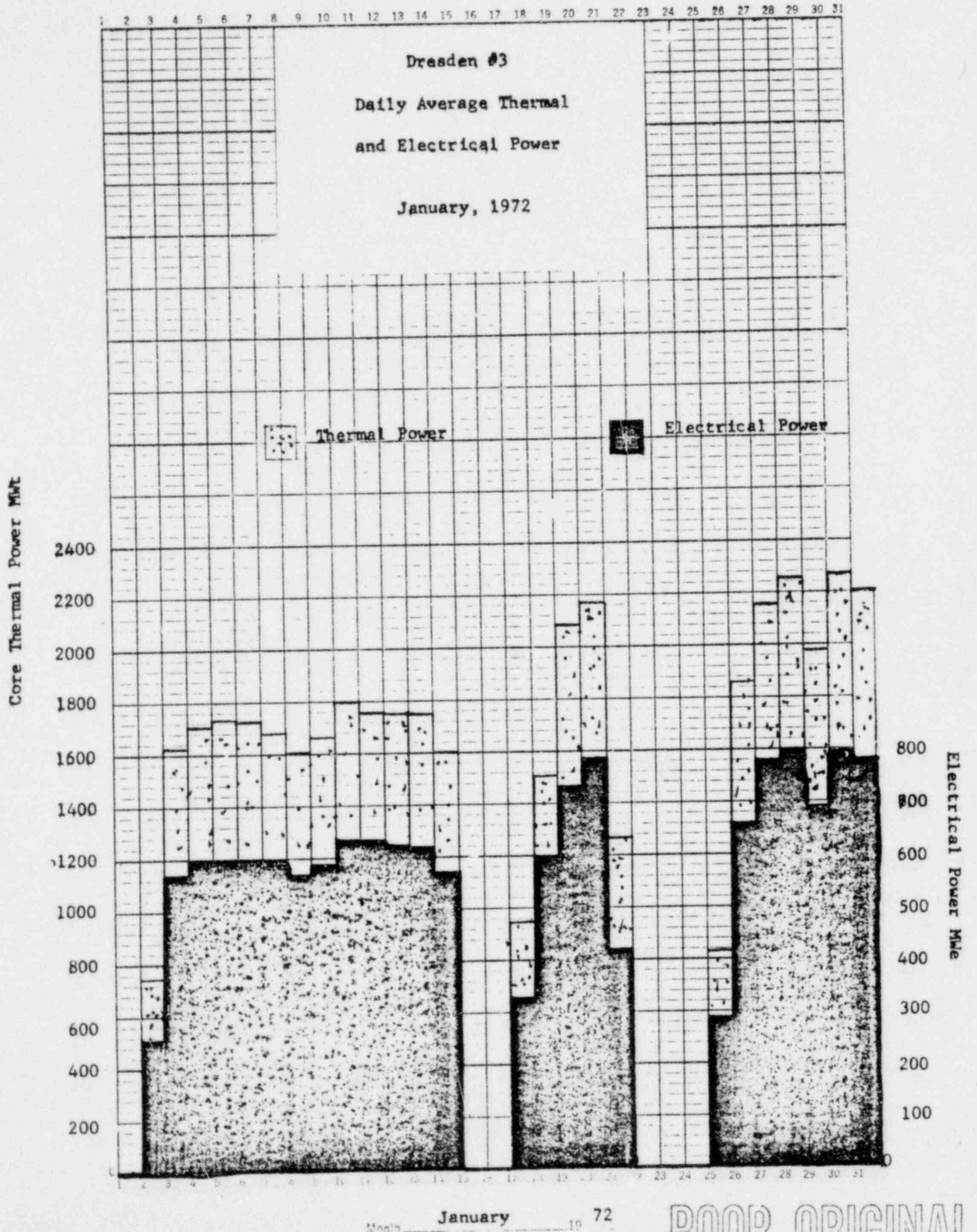


Figure III-A

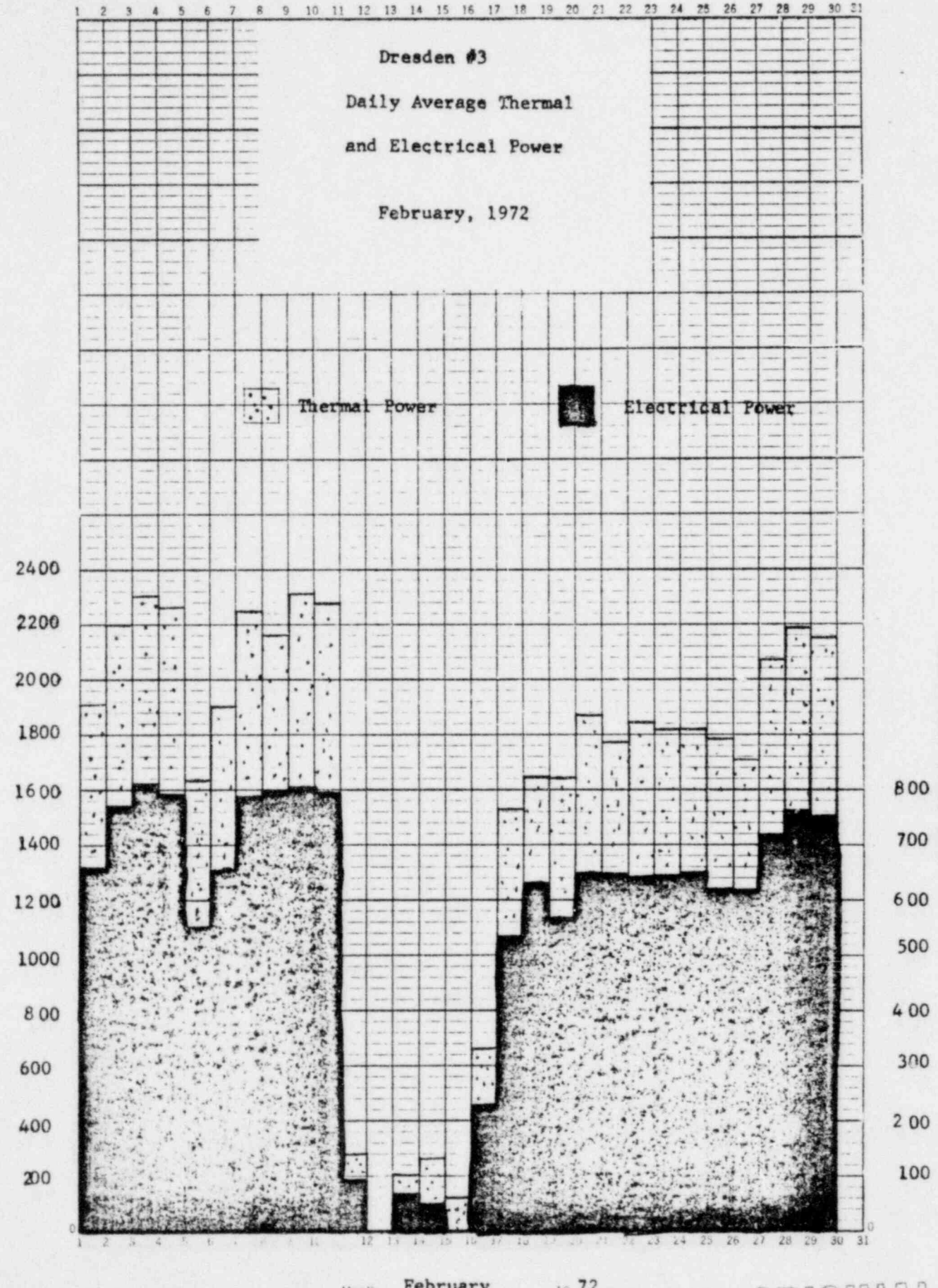


Figure III-B

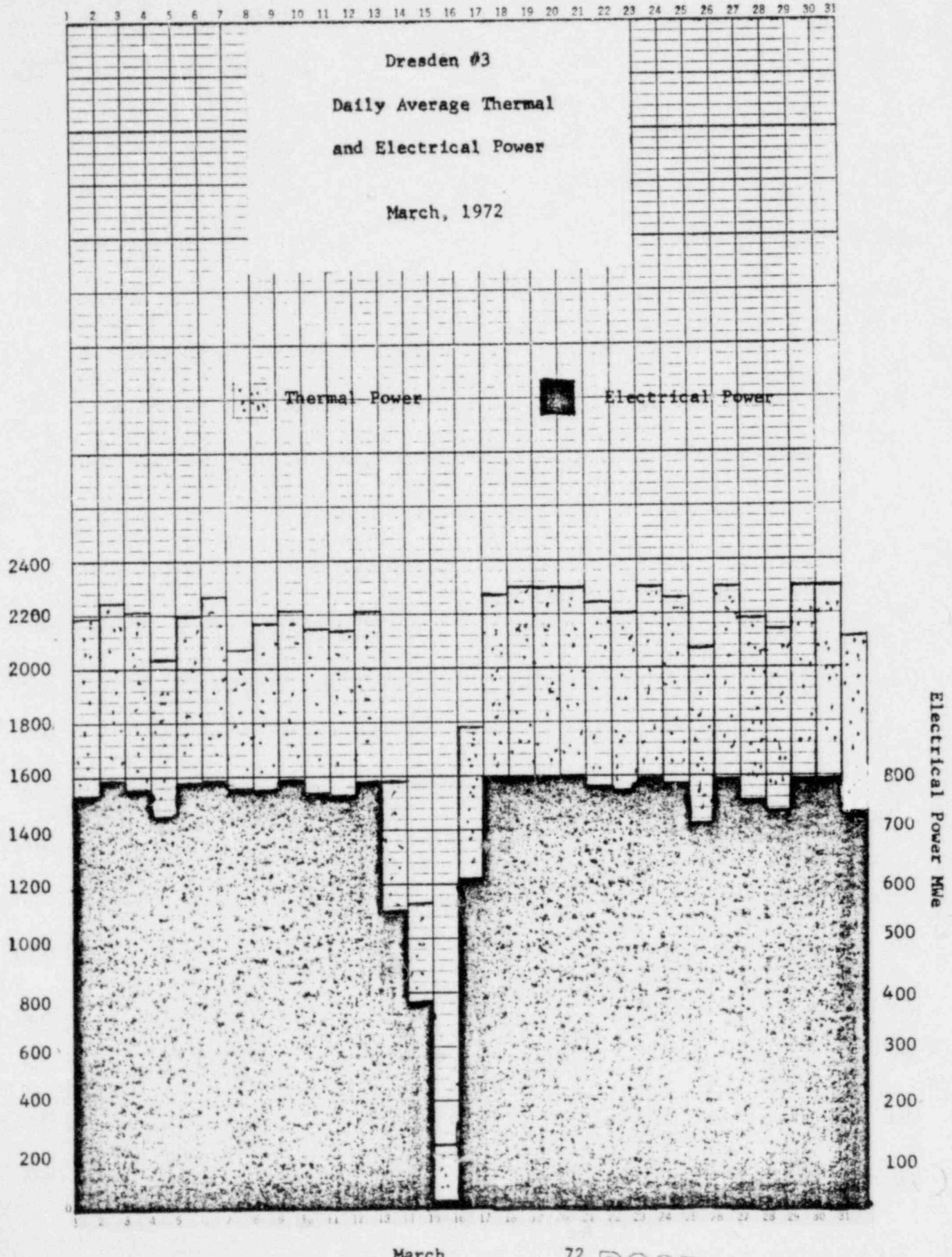
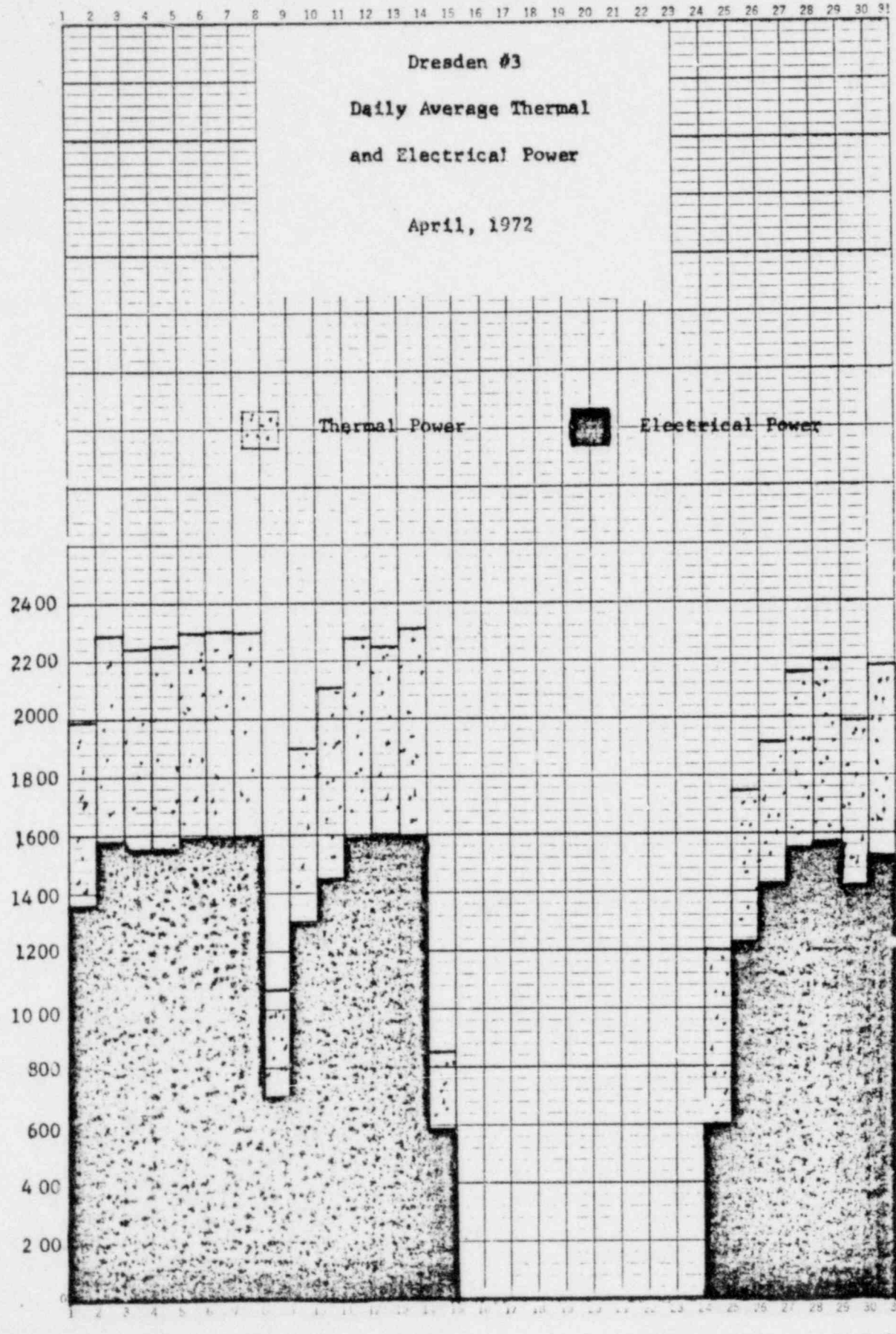
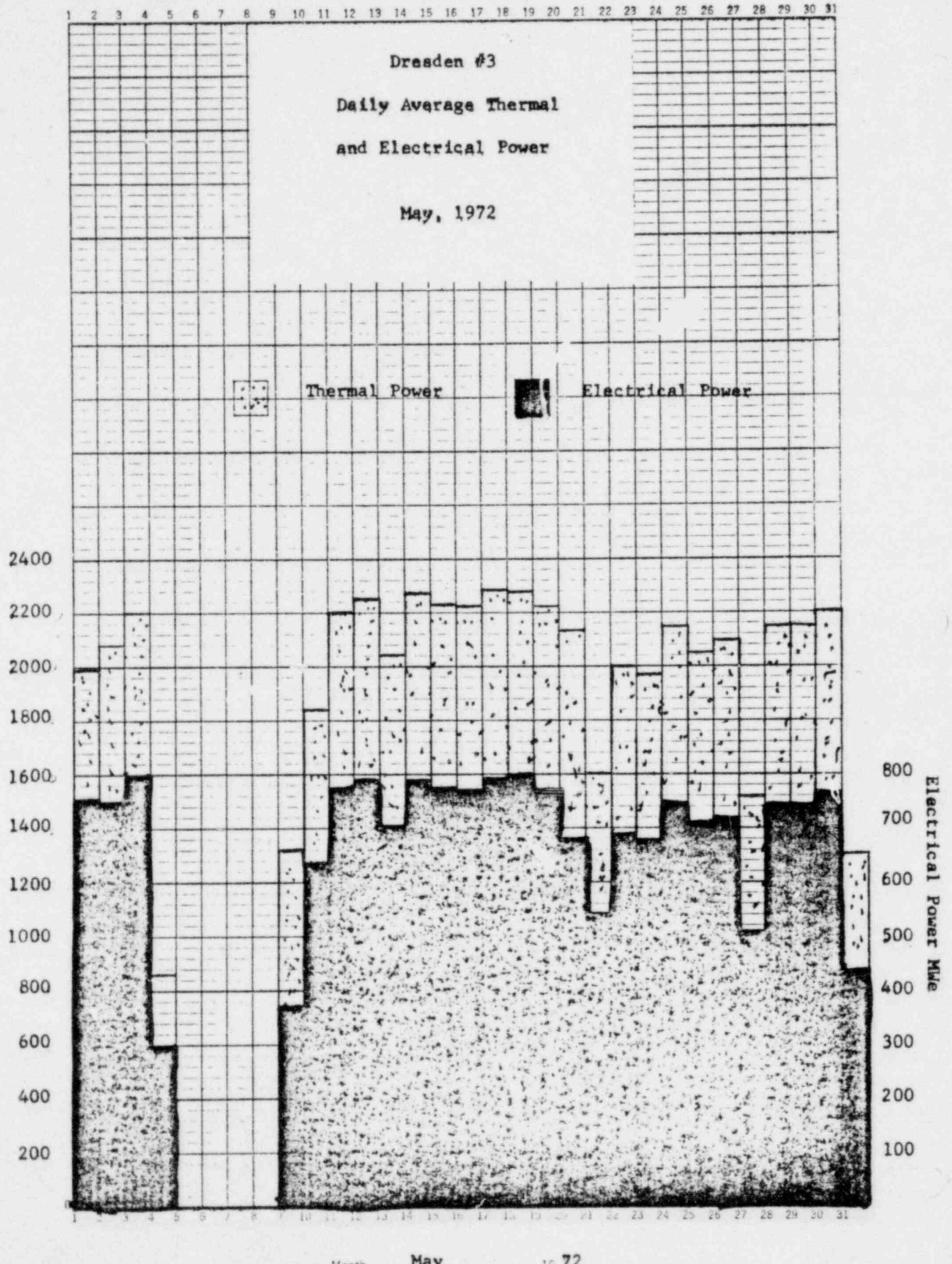


Figure III-C



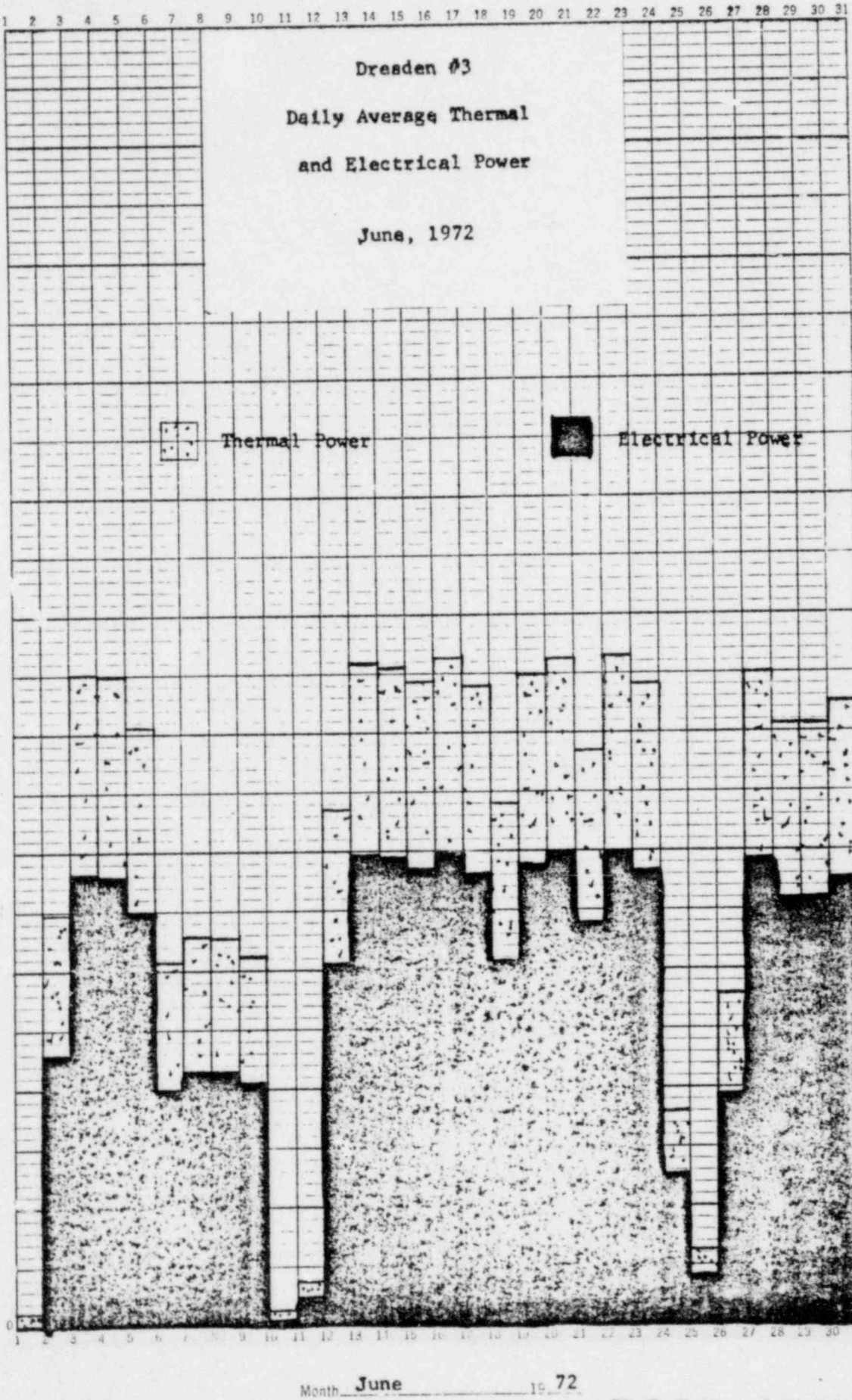
Month April 19 72

Figure III-D



Month May 19 72

Figure III-E



Month June 19 72

Figure III-F