



UTILITIES

Duane Arnold Energy Center
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June 7, 1996
NG-96-1298

Mr. Hubert J. Miller
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Subject: Duane Arnold Energy Center
Docket No: 50-331
Operating License DPR-49
May 1996 Monthly Operating Report

Dear Mr. Miller:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for May 1996. The report has been prepared in accordance with the guidelines of NUREG-0020 and distribution has been made in accordance with DAEC Technical Specifications, Section 6.11.1.c.

Very truly yours,

Gary Van Middlesworth
Plant Manager, Nuclear

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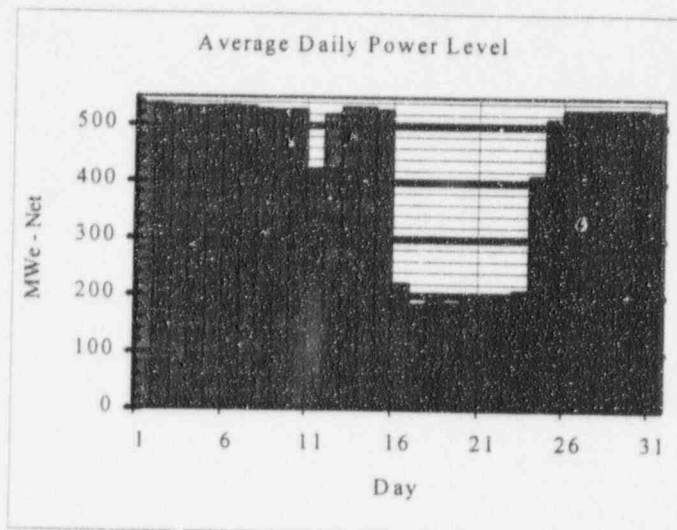
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OPERATING DATA REPORT

DOCKET NO: 50-0331
 DATE: 06/7/96
 Unit: Duane Arnold Energy Center
 COMPLETED BY: Richard Woodward
 TELEPHONE: (319) 851-7318

OPERATING STATUS

1. Unit Name: Duane Arnold Energy Center
2. Reporting Period: May 1996
3. Licensed Thermal Power (MW_{th}): 1658
4. Nameplate Rating (Gross MW_e DER): 565.7 (Turbine)
5. Design Electrical Rating (Net MW_e DER): 538
6. Maximum Dependable Capacity (Gross MW_e MDC): 550
7. Maximum Dependable Capacity (Net MW_e MDC): 520
8. If Changes Occur in Capacity Ratings (Items Number 3 through 7) since the last report, Give Reasons: Not Applicable
9. Power Level to Which Restricted, If Any (Net MW_e): Not Applicable
10. Reasons for Restrictions, If Any: Not Applicable



		May-96	1996	Cummulative
11.	Hours in Reporting Period	744.0	3,647.0	186,983.0
12.	Number of Hours Reactor Was Critical	744.0	3,647.0	142,172.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	744.0	3,647.0	138,760.8
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,037,259.4	5,616,251.6	194,877,465.9
17.	Gross Electrical Energy Generated (MWH)	346,098.0	1,907,118.0	65,319,088.6
18.	Net Electrical Energy Generated (MWH)	325,276.4	1,798,052.8	61,275,067.4
19.	Unit Service Factor	100.0%	100.0%	74.2%
20.	Unit Availability Factor	100.0%	100.0%	74.2%
21.	Unit Capacity Factor (Using MDC Net)	84.1%	94.8%	69.2%
22.	Unit Capacity Factor (Using DER Net)	81.3%	94.3%	66.2%
23.	Unit Forced Outage Rate	0.0%	0.0%	10.5%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): Refueling, 10/11/96, 30 days
25. If Shutdown at End of Report Period, Estimated Date of Startup: N/A

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-0331

DATE: 06/7/96

Unit: Duane Arnold Energy Center

COMPLETED BY: Richard Woodward

TELEPHONE: (319) 851-7318

MONTH May 1996

Day	Average Daily Power Level (MWe-Net)
1	535.4
2	535.5
3	532.9
4	532.1
5	532.9
6	534.0
7	532.4
8	528.2
9	526.7
10	527.9
11	423.9
12	519.4
13	532.6
14	532.1
15	527.2
16	221.7
17	185.7
18	199.3
19	187.9
20	199.4
21	200.0
22	198.8
23	209.7
24	412.0
25	512.6
26	528.9
27	528.1
28	529.6
29	529.2
30	530.1
31	527.2

REFUELING INFORMATION

DOCKET NO: 50-0331
 DATE: 06/7/96
 Unit: Duane Arnold Energy Center
 COMPLETED BY: Richard Woodward
 TELEPHONE: (319) 851-7318

1. Name of facility.

Duane Arnold Energy Center

2. Scheduled date for next refueling shutdown.

Refuel Outage XIV to begin October 11, 1996.

3. Scheduled date for restart following refueling.

November 11, 1996

4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?

Yes

RTS 269, T.S. 3.7, "Plant Containment Systems"

RTS 288, T.S. 2.1, 3.2, "Reactor Water Clean-up Systems Vessel Level Isolation Set-Point Change"

5. Scheduled date(s) for submitting proposed licensing action and supporting information.

RTS 269, submitted December 22, 1995

RTS 288, submitted January 18, 1996

6. Important licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, new operating procedures.

No

7. Current and projected fuel assemblies inventory:

	Number of Fuel Assemblies	Projected date of last refueling that can be discharged
Installed in reactor core (following refueling)	368	n/a
Previously discharged from core to Spent Fuel Storage Pool (following refueling)	1408	n/a
Under present physical capacity of Spent Fuel Storage Pool	2411	2007
Under Licensed Capacity of Spent Fuel Storage Pool	3152	2014

DOCKET NO: 50-0331
 DATE: 06/7/96
 Unit: Duane Arnold Energy Center
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UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH: May 1996

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	System Code (4)	Comp. Code (5)	Cause
6	May 11-12	S	0 (5.5 full- power- hours equivalent)	B	5	n/a	n/a	n/a	Turbine Valve Testing
7	May 16-26	F	0 (122.8 full- power- hours equivalent)	A	5	n/a	AD Reactor Recirculation Pump	MG Motor Generator Set	"B" Recirculation Pump Motor Generator Set Trip

1 - F: Forced
 S: Scheduled

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

3 - Method:
 1-Manual
 2-Manual Scram
 3-Automatic Scram
 4-Continued
 5-Reduced Load
 9-Other (Explain)

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

5 - Exhibit 1 (Same Source)

DOCKET NO.: 50-0331
DATE: 05/7/96
Unit: Duane Arnold Energy Center
COMPLETED BY: Richard Woodward
TELEPHONE: (319) 851-7318

Monthly Operational Overview for May 1996 :

The DAEC operated at full thermal power throughout the month except:

- on May 11-12, to perform scheduled Turbine Valve (TV) surveillance testing; 5.5 full-power-hours (equivalent) lost.
- on May 16-26, because of a trip of the "B" Recirculation Pump Motor Generator Set at 01:45 a.m. (May 16); 122.8 full-power-hours (equivalent) lost. Investigation revealed the machine tripped on exciter field undervoltage.

Total forgone production (including other small planned losses) was the equivalent of 132.2 full-power hours of operation.

At the end of the month the Duane Arnold Energy Center had operated 361 consecutive days, its best-ever continuous operating run.

Allocation of Production & Losses:	Electrical Output MWe	Capacity Factor % of 565.7 MWe (Design Gross Rating)	Full Power Equivalent Hours
Actual Metered Net Electric Output	437.2	77.3%	575.0
Actual Metered Plant Electric Loads	28.0	4.9%	36.8
Load Following	0.0	0.0%	0.0
Off-Line	0.0	0.0%	0.0
Weather losses, ie., condenser pressure >2.75 In Hg / Circ Water Temp > 74.5 °F	0.1	0.0%	0.1
Planned Capacity Losses: Turb Valve Testing 5/11-12, other small planned losses	4.2	0.7%	5.6
Unplanned Capacity Losses: Recirc Pump MG Set trip 5/16-26	93.4	16.5%	122.8
Normal Capacity Losses (Avg MWth < 1658)	0.2	0.1%	0.3
Metering Losses (Avg indic MWe - Avg MWHe)	1.9	0.3%	2.5
Efficiency Losses (Weather-Norm-Full-Power-MWe < 565.7)	0.7	0.1%	0.9
Design Gross Electric Output	565.7	100.0%	744.0

(There were no Licensee Event Reports)

Licensing Action Summary:

Plant Availability:	100.0%	Unplanned Auto Scrams (while/critical) this month:	0
Number of reportable events:	0	Unplanned Auto Scrams (while/critical) last 12 months:	0

Duane Arnold Energy Center
Monthly Production Statistics

Gayle Reiersen - Centerville - 66-82-5365
Walt Nodan - Tower 14 - 66-8192
Dave Acton - Tower 5 - 66-7718

Date Time mm/dd/yy	MWth C179	MWe Gr G001	CndPr InHg	CirTp °F	FstPr PSIA	MW2 MWe	Net MWe	Stat MW	CpLa MWe	Norm MWe	MWHe BY504	MW1th	MWHe	Meter GrMWH	Aux MWHe	Startup MWHe	Standby MWHe	LLSF MWH	Net MWHe	Generator Reading	Auxiliary Reading	Startup Reading	Standby Reading	LLRWSPF Reading	Descr	
05/01/96	1,657.5	568.2	2.65	72.0	678.9	565.9	539.6	28.6	0.2	565.3	565.4	39,780.6	13,636.7	13,564	684.4	31.2	0.0	0	12,848.4	33,094.8	41,941.9	34,228.0	10482	549.8	1XR1 & 1XR2 power supplied by 6th St line.	
05/02/96	1,657.5	568.8	2.58	71.1	678.7	566.5	539.6	29.2	0.2	565.3	566.2	39,780.3	13,651.0	13,588	683.8	34.2	0.0	18	12,852.0	34,453.6	42,625.7	34,262.2	10482	549.8	1XR1 & 1XR2 power supplied by 6th St line.	
05/03/96	1,656.3	566.4	2.74	73.6	678.2	564.4	536.8	29.6	0.5	565.1	564.1	39,751.9	13,594.3	13,540	685.0	35.0	0.0	30	12,790.0	35,807.6	43,310.7	34,297.2	10482	551.6	1XR1 & 1XR2 power supplied by 6th St line.	
05/04/96	1,656.4	564.8	2.87	75.5	677.9	562.8	535.3	29.5	0.5	564.9	562.7	39,753.0	13,555.3	13,515	684.4	33.7	0.0	27	12,769.9	37,159.1	43,995.1	34,330.9	10482	554.6	Rod Pull	
05/05/96	1,657.2	566.0	2.79	74.3	678.2	564.0	536.9	29.1	0.3	565.1	564.1	39,773.9	13,584.5	13,534	686.4	27.1	0.0	30	12,790.5	38,512.5	44,681.5	34,358.0	10482	557.3	CRD Exercises	
05/06/96	1,657.4	567.2	2.67	72.5	678.6	565.5	537.8	29.5	0.2	565.1	565.4	39,778.5	13,614.0	13,564	687.6	32.1	0.0	28	12,816.3	39,868.9	45,369.1	34,390.1	10482	563.1		
05/07/96	1,657.5	565.4	2.84	74.8	678.6	563.4	535.6	29.8	0.2	564.9	563.6	39,781.0	13,570.2	13,533	688.1	38.0	0.0	30	12,776.9	41,222.2	46,057.2	34,428.1	10482	566.1		
05/08/96	1,657.4	561.7	3.14	78.9	678.2	559.7	532.0	29.7	0.2	564.7	559.4	39,776.4	13,479.7	13,426	685.6	33.7	0.0	30	12,676.7	42,564.8	46,742.8	34,461.8	10482	569.1		
05/09/96	1,657.3	558.9	3.33	81.6	677.4	557.2	529.3	29.6	0.2	564.6	556.6	39,774.3	13,413.9	13,387	684.5	33.3	0.0	28	12,641.2	43,903.5	47,427.3	34,495.1	10482	571.9		
05/10/96	1,657.1	563.0	2.99	77.2	677.5	561.4	533.2	29.8	0.3	564.8	561.0	39,771.2	13,512.1	13,425	684.7	35.4	0.0	35	12,669.9	45,246.0	48,112.0	34,530.5	10482	575.4		
05/11/96	1,343.2	453.4	2.07	69.9	538.3	451.6	426.4	27.0	112.4	565.1	452.1	32,236.6	10,880.5	10,859	621.8	33.5	0.0	31	10,172.7	46,331.9	48,733.8	34,564.0	10482	578.5	TCV Testing, CV Repair	
05/12/96	1,609.5	550.8	2.50	71.0	656.6	548.9	521.7	29.0	15.5	564.5	549.1	38,629.0	13,218.8	13,205	675.0	33.9	0.0	30	12,466.1	47,652.4	49,408.8	34,597.9	10482	581.5	TCV Testing, CV Repair	
05/13/96	1,656.3	567.9	2.58	71.3	677.6	566.0	538.2	29.7	0.4	565.1	565.8	39,751.1	13,629.5	13,536	685.2	34.6	0.0	34	12,782.2	49,006.0	50,094.0	34,632.5	10482	584.9	Rod Pull	
05/14/96	1,656.6	565.1	2.83	74.7	677.6	563.2	535.5	29.6	0.6	565.0	562.9	39,757.3	13,561.2	13,526	687.3	34.3	0.0	34	12,770.4	50,358.6	50,781.3	34,666.8	10482	588.3	Rod Pull	
05/15/96	1,657.2	560.8	3.18	79.4	677.5	559.2	531.6	29.2	0.3	564.8	558.3	39,772.4	13,459.2	13,393	674.7	33.1	0.0	32	12,653.2	51,697.9	51,456.0	34,699.9	10482	591.5		
05/16/96	793.3	245.1	1.68	75.4	293.9	242.9	223.9	21.1	320.4	564.2	243.8	19,038.7	5,881.3	5,850	470.4	33.9	0.0	26	5,319.6	52,282.9	51,926.5	34,733.8	10482	594.1	Recirc MG set	
05/17/96	700.2	206.8	1.77	80.5	252.3	204.9	188.2	18.7	358.9	*****	205.6	16,804.5	4,964.1	4,924	406.4	32.9	0.0	29	4,455.7	52,775.3	52,332.9	34,766.7	10482	597.0	Recirc MG set	
05/18/96	737.8	220.7	1.81	81.1	268.5	218.5	201.4	19.2	345.0	*****	219.1	17,708.3	5,295.7	5,260	420.6	32.5	0.0	24	4,782.9	53,301.3	52,753.5	34,799.2	10482	599.4	Recirc MG set	
05/19/96	703.8	208.9	1.71	80.0	253.3	206.7	189.9	19.0	356.8	*****	207.4	16,891.2	5,012.8	4,979	413.7	32.6	0.0	23	4,509.7	53,799.2	53,167.2	34,831.8	10482	601.7	Recirc MG set	
05/20/96	724.4	220.5	1.46	73.5	262.9	218.3	201.5	19.0	345.2	*****	219.1	17,386.4	5,291.8	5,258	415.9	32.1	0.0	24	4,786.0	54,325.0	53,583.1	34,863.9	10482	604.1	Recirc MG set	
05/21/96	723.6	221.5	1.39	71.3	262.5	219.3	202.4	19.1	344.2	*****	220.1	17,365.9	5,315.8	5,282	418.7	33.6	0.0	29	4,800.7	54,853.2	54,001.8	34,897.5	10482	607.0	Recirc MG set	
05/22/96	722.3	219.9	1.45	72.9	261.8	217.7	201.0	18.9	345.8	*****	218.5	17,334.6	5,277.7	5,245	415.9	32.5	0.0	26	4,770.6	55,377.7	54,417.7	34,930.0	10482	609.6	Recirc MG set	
05/23/96	757.0	232.3	1.56	74.6	277.7	230.2	211.8	20.4	333.4	*****	231.0	18,167.2	5,574.1	5,541	448.5	34.8	0.0	26	5,031.7	55,931.8	54,866.2	34,964.8	10482	612.2	Recirc MG set	
05/24/96	1,318.8	440.6	2.36	75.3	527.0	438.8	414.9	25.7	125.1	*****	439.2	31,652.4	10,574.3	10,535	587.6	32.5	0.0	28	9,886.9	56,985.3	55,453.8	34,997.3	10482	615.0	Recirc MG set	
05/25/96	1,602.4	543.5	2.89	76.9	652.7	541.7	515.0	28.5	21.4	564.6	541.8	38,458.2	13,043.3	13,028	666.2	28.8	0.0	30	12,303.0	58,288.1	56,120.0	35,026.1	10482	618.0		
05/26/96	1,656.0	562.5	3.03	77.4	676.8	560.7	533.4	29.1	0.7	564.8	560.3	39,743.8	13,428	13,428	677.5	29.0	0.0	28	12,693.5	59,630.9	56,797.5	35,055.1	10482	620.8		
05/27/96	1,657.5	561.2	3.19	79.4	678.0	559.8	532.0	29.2	0.2	565.5	559.1	39,779.4	13,468.5	13,413	681.3	29.2	0.0	29	12,673.5	60,972.2	57,478.8	35,084.3	10482	623.7		
05/28/96	1,657.5	562.5	3.05	77.6	677.9	561.3	533.2	29.4	0.2	565.3	560.4	39,779.7	13,500.8	13,454	680.6	31.8	0.0	32	12,709.6	62,317.6	58,159.4	35,116.1	10482	626.9		
05/29/96	1,657.3	562.3	3.02	77.6	677.3	561.1	532.8	29.5	0.2	564.8	560.5	39,775.8	13,496.3	13,448	683.1	34.6	0.0	30	12,700.3	63,662.4	58,842.5	35,150.7	10482	629.9		
05/30/96	1,655.6	562.1	2.99	77.2	676.5	560.9	532.7	29.4	1.0	564.8	560.4	39,734.9	13,490.6	13,466	684.6	32.7	0.0	26	12,722.7	65,009.0	59,527.1	35,183.4	10482	632.5	Rod Pull	
05/31/96	1,657.1	560.5	3.16	79.4	677.0	559.3	531.2	29.3	0.3	564.6	558.5	39,771.0	13,452.3	13,392	678.3	34.1	0.0	26	12,653.6	66,348.2	60,205.4	35,217.5	10482	635.1		
On-Line	43,219.1											1,037,259.4	347,499.2	346,098	18,947.9	1020.7	0.0	853	325,276.4	34,609.8	18,947.9	1,020.7	0	85.3		
Off-line												43,219.1			0.0	0.0	0.0	0	0.0							
Total												MWDth		346,098	18,947.9	1020.7	0.0	853	325,276.4							
																				325,276.4						

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Duane Arnold Energy Center
 Monthly Generation Statistics

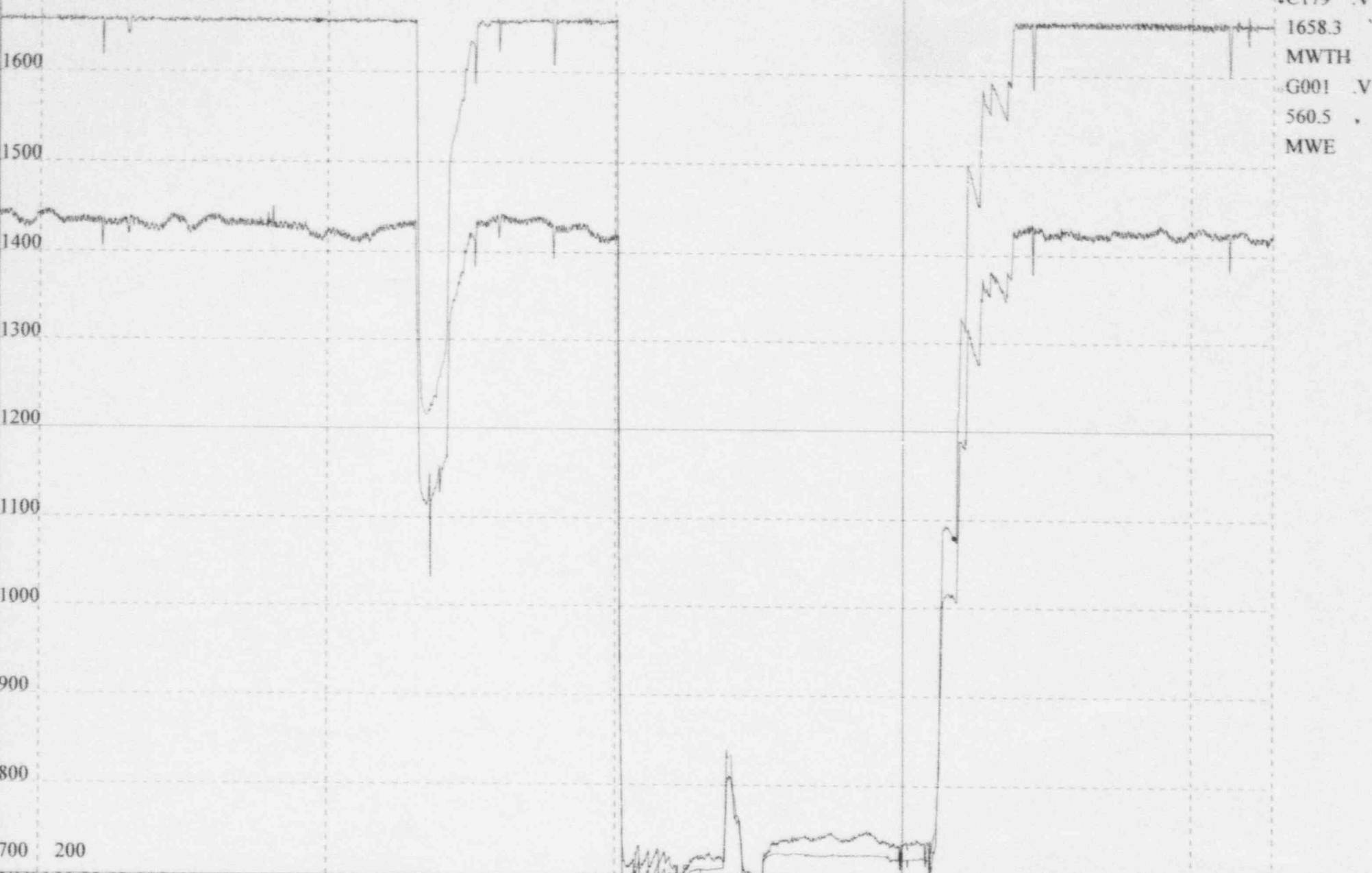
IES Utilities
 3313 DAEC Road
 Palo, IA 52324

Date	Jan-96	Feb-96	Mar-96	Apr-96	May-96	1996	Cummulative
Hours in Reporting Period	744.0	696.0	744.0	719.0	744.0	3,647.0	186,983.0
# of Hours Rx critical	744.0	696.0	744.0	719.0	744.0	3,647.0	142,172.8
Rx reserve Shutdown hrs						0.0	192.8
hrs generator on line	744.0	696.0	744.0	719.0	744.0	3,647.0	138,760.8
Unit reserve Shutdown hours						0.0	0.0
Gross Thermal	1,176,757.0	1,106,221.6	1,117,415.6	1,178,598.1	1,037,259.4	5,616,251.6	194,877,465.9
Gross Electric Generation	402,671.0	376,754.0	379,761.0	401,834.0	346,098.0	1,907,118.0	65,319,088.6
Net Electric Generation	379,995.3	355,493.7	357,673.2	379,614.2	325,276.4	1,798,052.8	61,275,067.4
Unit Service Factor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	74.2%
Unit Availability Factor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	74.2%
Unit Capacity Factor (MDC net)	98.2%	98.2%	92.5%	101.5%	84.1%	94.8%	69.2%
Unit Capacity Factor (DER net)	94.9%	94.9%	89.4%	98.1%	81.3%	91.6%	66.2%
Unit Forced Outage Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.5%
Forced outage hours	0.0	0.0	0.0	0.0	0.0	0.0	16,311.0
Gross Capacity Factor (DER Gross)	95.7%	95.7%	90.2%	98.8%	82.2%	92.4%	63.0%
Gross Electric (Hours)	711.8	666.0	671.3	710.3	611.8	3,371.3	
Losses	32.2	30.0	72.7	8.7	132.2	275.7	
Off-Line Losses	0.0	0.0	0.0	0.0	0.0	0.0	
On-Line Losses	32.2	30.0	72.7	8.7	132.2	275.7	
Fuel Coast Down						0.0	
On-line Seasonal Losses	-7.1	-2.5	-4.7	-4.6	0.1	-18.8	
Load Following/Grid Disturbance	0.0	0.0				0.0	
(Surveillances)	0.0	0.0				0.0	
CRD/flow Manipulations	0.0					0.0	
Metering	3.2	2.8	3.2	3.3	2.5	15.0	
Short Term (known Equip Prob) De	34.4		1.0		122.8	158.2	
Long Term Equip Derate	1.7	29.7	73.2	10.0	6.8	121.4	
Start-up / Shutdown						0.0	
checksum	0.0	0.0	0.0	0.0	0.0	-0.1	
Forced Equip Derate	34.4		1.0		122.8	158.2	
Mainten Equip Derate						0.0	
Planned Equip Derate	4.9	32.5	76.4	13.3	9.4	136.5	
Seasonal Derate	-7.1	-2.5	-4.7	-4.6		-18.9	
Uncounted						0.0	
checksum	0.0	0.0	0.0	0.0	0.0	-0.1	
On line Planned Energy Loss	4.9	32.5	76.4	13.3	9.4	136.5	
Off Line Planned Energy Loss						0.0	
On-Line UnPlanned Energy Loss	34.4		1.0		122.8	158.2	
Off lineUnPlanned Energy Loss						0.0	
Uncounted	-7.1	-2.5	-4.7	-4.6		-18.9	
checksum	0.0	0.0	0.0	0.0	0.0	-0.1	
Equivalent Availability	95.7%	95.7%	90.2%	98.8%	82.2%	92.4%	
Unit Capability	94.7%	95.3%	89.6%	98.2%	82.2%	91.9%	
Unplanned Capability Loss	4.6%	0.0%	0.1%	0.0%	16.5%	4.3%	
Planned Capability Loss	0.7%	4.7%	10.3%	1.8%	1.3%	3.7%	

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