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REPORTS FILE

TO: NRC

FROM: Iowa Elec Light & Power Co
Cedar Rapids, Iowa 52406
E.L. Hammond

DATE OF DOCUMENT
3-21-77

DATE RECEIVED
3-29-77

LETTER
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DESCRIPTION Ltr trans the following:

**DO NOT REMOVE
ACKNOWLEDGED**

DISTRIBUTION PER S. SHEPPARD 3-3-77

PLANT NAME: Duane Arnold Plant

DHL

ENCLOSURE Rev #1 to 1976 Annual Operating Rpt
for Duan Arnold Plant which consists of new
section A.c to the rpt which summarizes the
major safety related maintenance performed bet-
ween unit shutdowns & a new table of contents
& rev page A.2.1.... & X 7P

(40 cys encl rec'd)

(40 cys encl rec'd)

NOTE: LIC. ASST.(S)...LTR & MAIL CONTROL
ONLY....DOCKET CLERK WILL SEND 1 CY EACH TO
EPA HQS, EPA REG, NOAA, F&W & F&D TO LIC.
ASST. SAFETY FOR DISTRIBUTION....TOTAL (5) CYS

SAFETY

FOR ACTION/INFORMATION

PROJECT MANAGER:
LIC. ASST: (5)
*SEE NOTE

*Shea
Parrish*

INTERNAL DISTRIBUTION

- REC FILE
- NRC PDR
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- HANAUER
- STELLO
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- BAER
- BUTLER
- GRIMES
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EXTERNAL DISTRIBUTION

LPDR: Cedar Rapids, IA NAT LAB: ANL
TEC:
NSIC:
ACRS 16 CYS SENT CATEGORY B

CONTROL NUMBER

770890143

MA 2
60

IOWA ELECTRIC LIGHT AND POWER COMPANY

DUANE ARNOLD ENERGY CENTER

P. O. Box 351

Cedar Rapids, Iowa 52406

March 21, 1977

DAEC -77 - 184

Regulatory Docket File



Director, Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
1717 H Street N.W.
Washington, D.C. 20545

Subject: Revision 1 to 1976 Annual Operating
Report for the Duane Arnold Energy
Center

File: A-118e

Dear Sir:

Forty (40) copies of the 1976 DAEC Annual Operating Report were transmitted to your office on February 28, 1977. Subsequent to submittal of the report, further evaluation has determined that additional information should have been included relative to major safety related maintenance performed during 1976. The initial report only included major safety related maintenance performed during unit shutdowns.

Please find attached forty (40) copies of a new section A.6 (pages A.6-1 thru A.6-4) to the report which summarizes the major safety related maintenance performed between unit shutdowns. A new Table of Contents page and a revised page A.2-1 have also been included. Page A.2-1 was revised to correct typographical errors in the initial report.

Very truly yours,

EL Hammond/dh

Ellery L. Hammond
Chief Engineer
DAEC

ELH/DLW/mg
enclosures

cc: w/o enclosures
D. Arnold, J. Wallace, D. Mineck, D. Wilson

ANNUAL OPERATING REPORT

for Calendar Year 1976

Docket No. 050-0331

License No. DPR-49

DUANE ARNOLD ENERGY CENTER

UNIT 1

IOWA ELECTRIC LIGHT AND POWER COMPANY
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE

APPROVED BY:

E.L. Hammond / dlh

E.L. HAMMOND
Chief Engineer
D.A.E.C.

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A.2 UNIT SHUTDOWNS AND FORCED POWER REDUCTIONS Page 1

1976 DATE	TYPE	DURATION (HOURS)	REPORTABLE OCCURRENCE #	CAUSE	COMPONENT	SYSTEM	CORRECTIVE ACTION TO PREVENT RECURRENCE
1-10	Power Reduction	20	-	Worn recirculation pump MG set brushes	Motor generator	Recirculation	MG set brushes were replaced
A.2-1 1-23	Power Reduction	30	76-08	Torus O ₂ concentration exceeded 4% due to ruptured bellows in the O ₂ analyzer sample pumps	O ₂ analyzer sample pumps	Torus sampling	Sample pumps were replaced
2-14	Refuel Outage	1484	-	Refueling	-	-	-
Rev 1 5-18	Scheduled Shutdown	137.5	-	Perform Local Leak Rate Test of Feedwater Check Valve	Check Valve	Feedwater	-
6-25	Forced Shutdown	40	-	Excessive vibration from the main turbine	Turbine generator	Turbine generator	Turbine was re-balanced
7-4	Power Reduction	8	-	To perform turbine vibration testing	Turbine generator	Turbine generator	None
7-18	Power Reduction	8	-	Worn recirculation pump MG set brushes	Motor generator	Recirculation	MG set brushes were replaced

A.6 MAJOR SAFETY RELATED MAINTENANCE

DATE	SYSTEM	COMPONENTS	DESCRIPTION
1-10-76	Recirculation	M-G sets "A" and "B"	Worn M-G sets brushes were replaced
1-22-76	Neutron monitoring	APRM "D"	Replace power supply due to failure
2-06-76	Neutron monitoring	"A" TIP Machine	Replace counter due to incorrect readings
3-01-76	Diesel Gen	1G21	Replaced burned insulation and retorqued end cover of east manifold to reduce fuel oil leakage.
3-04-76	RCIC	MO-2512 disch. valve	Lapped seat and repacked valve to correct failed LLRT
3-05-76	RCIC	CV-2513 disch. valve	Lapped seat and repacked valve to correct failed LLRT
3-05-76	Diesel Gen.	Breaker A411	Replaced loose charging spring motor
3-09-76	Main Steam	CV-1361 Air Ej. Stm. supply	Replaced valve to correct body to bonnet steam leakage
3-09-76	4160 Volt	Bus 1A1 and 1A3	Installed recording voltmeter
3-10-76	RCIC	MO-2400 Steam Supply	Lapped seat and repacked stem to correct failed LLRT
3-13-76	Standby Gas Treatment	CV-4309 Supp. pool out. bypass	Lapped seat and repacked valve to correct failed LLRT
3-13-76	Neutron monitoring	SRM "A"	Replaced broken detector cable to SRM A
3-13-76	RCIC	MO-2510 disch. min. flow	Reworked burned stator
3-14-76	Nitrogen Makeup	CV-4311 inlet isol.	Lapped disc and repacked valve to correct failed LLRT
3-14-76	Recirculation	CV-1804A mini-purge	Lapped disc and machined disc to correct failed LLRT

A.6 MAJOR SAFETY RELATED MAINTENANCE

DATE	SYSTEM	COMPONENTS	DESCRIPTION
3-16-76	RHR	MOV-1920 S/D cool. section to "D" pump	Installed rewound stator after being burned
3-21-76	Mn. Stm. Rad. monitoring	RR-4848	Repaired amplifiers to correct recorder not responding
3-24-76	Recirculation	M-G sets A and B	Replaced worn M-G sets brushes
3-25-76	CRD	CRD	Inspected and repaired drives of CRD's
3-29-76	Reactor Building H V	1V-EF-2 disch. damper	Replaced shaft to allow damper to open
3-30-76	Main Steam	MSIV-4418	Lapped valve to correct failed LLRT
3-30-76	Main Steam	MSIV-4412	Lapped valve to correct failed LLRT
3-30-76	Main Steam	MSIV-4415	Lapped valve to correct failed LLRT
3-30-76	Main Steam	MSIV-4421	Lapped valve to correct failed LLRT
3-30-76	Main Steam	MSIV-4420	Lapped valve to correct failed LLRT
4-01-76	RCIC	CV-2513 disch.	Replaced broken disc and actuator limit switches
4-02-76	Reactor protection	PIP's	Replaced six defective Position Indicator Probes
4-05-76	Main Steam	MSIV-4413	Repacked valves to correct failed LLRT
4-05-76	Main Steam	MSIV-4416	Repacked valves to correct failed LLRT
4-05-76	Main Steam	MSIV-4419	Repacked valves to correct failed LLRT
4-07-76	Nitrogen makeup	V-43-10 Liq. N ₂ Vol. disch.	Lapped valve and turned down disc seat to reduce leaks
4-11-76	Main Steam	PSV-4401	Reinstalled valve after off-site pressure set point testing

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A.6 MAJOR SAFETY RELATED MAINTENANCE

DATE	SYSTEM	COMPONENTS	DESCRIPTION
4-11-76	Main Steam	PSV-4407	Reinstalled valve after off-site pressure set point testing
4-12-76	Main Steam	PSV-4404	Reinstalled valve after off-site pressure set point testing
4-12-76	Main Steam	PSV-4403	Reinstalled valve after off-site pressure set point testing
4-12-76	Main Steam	PSV-4405	Reinstalled valve after off-site pressure set point testing
4-12-76	Main Steam	PSV-4400	Reinstalled valve after off-site pressure set point testing
4-12-76	Main Steam	PSV-4406	Reinstalled valve after off-site pressure set point testing
4-15-76	Drywell sampling	SV-8105B	Replaced defective coil in solenoid valve
4-20-76	Neutron monitoring	"A" TIP Machine	Replaced J4 on drive unit due to machine drive failure
4-30-76	Torus	Sample pumps	Replaced ruptured bellow diaphragms of the sample pumps
5-21-76	Reactor Building H V	1V-AD-15A	Repaired unbolted damper operator
7-01-76	Primary containment	Airlock Door	Replaced defective door interlocks
7-19-76	Diesel Generator	Air Compressor	Replaced battery and filter to correct poor starting
8-09-76	Neutron monitoring	"A" TIP Machine	Replaced detector due to low scan readings
8-25-76	Neutron monitoring	"B" APRM	Replaced 20V power supply due to low output (17V)

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Rev. 1

A.6 MAJOR SAFETY RELATED MAINTENANCE

DATE	SYSTEM	COMPONENTS	DESCRIPTION
9-24-76	Diesel Generator	1G31	Ground and weld crankcase pan leaks
9-27-76	RHR cooling water	1P-22A	Adjusted impeller to correct discharge pressure
10-7-76	Diesel Generator	1G21	Lapped journals and replaced worn bearings
11-4-76	Diesel Generator	1G21	Replaced leaking fuel cross-pipe assembly
11-12-76	Diesel Generator	1G31	Repaired pinhole leaks by grinding and welding
11-20-76	Main Steam	V-14-42 drain line	Installed new gasket to correct steam leak
12-17-76	Diesel Generator	1G31	Replaced vertical drive coupling hub which was made of wrong material
12-27-76	Diesel Generator	"A" air compressor	Replaced broken foundation mounting bolts

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Rev. 1