

50-331

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FILE NUMBER

ENVIRO

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FROM: IOWA ELEC. LIGHT & PWR CO.
CEDAR RAPIDS, IOWA
E.L.HAMMOND

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2/25/77

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(1P)

PLANT NAME:

DUANE ARNOLD

ENCLOSURE

SEMI-ANNUAL REPORT (RADIOACTIVE EFFLUENT RELEASES) FOR THE PERIOD JULY 1, 1976 THROUGH DECEMBER 31, 1976.....

(8P)

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SAFETY

FOR ACTION/INFORMATION

ENVIRO

SAB 3/1/77

ASSIGNED AD:

GOLLER

ASSIGNED AD:

BRANCH CHIEF:

LEAR

BRANCH CHIEF:

PROJECT MANAGER:

SHEA

PROJECT MANAGER:

LIC. ASST. :

PARRISH (J)

LIC. ASST. :

INTERNAL DISTRIBUTION

REG FILE

SYSTEMS SAFETY

PLANT SYSTEMS

SITE SAFETY &

NRC PDR

HEINEMAN

TEDESCO

ENVIRO ANALYSIS

I & E (2)

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OELD

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ENVIRO TECH.

MIPC

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BAER

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CHECK

BUTLER

SITE ANALYSIS

MELTZ

GRIMES

VOLLMER

HELTEMES

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SALTZMAN

J. COLLINS

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EXTERNAL DISTRIBUTION

CONTROL NUMBER

LPDR: CEDAR RAPIDS, IOWA

NAT. LAB:

BROOKHAVEN NAT. LAB.

TIC:

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ULRIKSON (ORNL)

NSIC:

LA PDR

ASLB:

CONSULTANTS:

ACRS 1 CYS HOLDING/SENT CAT B

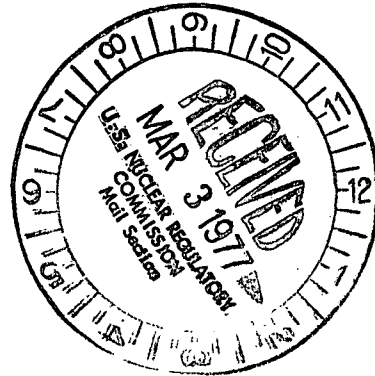
2227

IOWA ELECTRIC LIGHT AND POWER COMPANY

DUANE ARNOLD ENERGY CENTER
P. O. Box 351
Cedar Rapids, Iowa 52406

February 25, 1977
DAEC-77-134

50-331



Director, Management Information & Program Control
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Semiannual Operating Report for
Duane Arnold Energy Center, Unit
No. 1

FILE: A-118e

Dear Sir:

Please find enclosed two copies of the Semiannual Report for the Duane Arnold Energy Center, Unit No. 1, for the period July 1, 1976 through December 31, 1976. This report satisfies the requirements for a Semiannual Operating Report as stated in the Radiological Technical Specifications, (Appendix B to Operating License DPR-49).

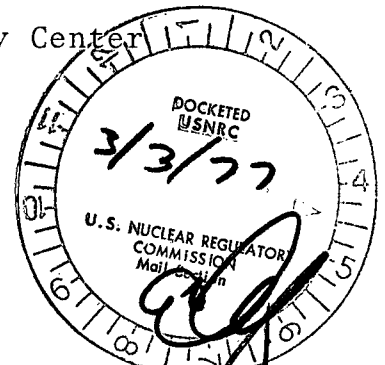
Very truly yours,

E. L. Hammond

E. L. Hammond
Chief Engineer
Duane Arnold Energy Center

ELH/KDY/1h

Enclosures



2227

SEMI-ANNUAL REPORT

Radioactive Effluent Releases

July 1, 1976 thru December 31, 1976

RADIATION EFFLUENT REPORT

July 1, 1976 thru December 31, 1976

ITEM	UNITS	3RD QUARTER 1976	4TH QUARTER 1976
A. Gaseous Effluents			
1. Gross Radioactivity	curies	1.80E3	2.76E3
2. Maximum 1 hour Release Rate	μCi/sec	9.96E3	8.14E4
3. Nuclides Released			
Xe-138	curies	1.80E2	3.30E2
Kr-87	curies	-----	-----
Kr-88	curies	9.10E1	5.00E1
Kr-85m	curies	8.10E0	9.70E1
Xe-135	curies	3.00E1	3.00E1
Xe-133	curies	1.28E3	1.90E3
Ar-41	curies	2.10E2	3.60E2
N-13	curies	6.00E-1	-----
4. Tritium Released	curies	3.83E0	9.30E0
5. Strontium Released			
Sr-89	curies	1.70E-6*	2.10E-6
Sr-90	curies	2.80E-6*	4.70E-7
6. Percent of ETS (Note 1)	%	10.13	6.8

* DAEC was unable to determine Sr-89 and Sr-90 releases from the third quarter of 1976. A loss of precipitate during the analysis resulted in 0% chemical yield. See Environmental Technical Specification Violation 76-6. Third quarter 1976 results are based on an average of second and fourth quarter 1976 results

RADIATION EFFLUENT REPORT

July 1, 1976 thru December 31, 1976

ITEM	UNITS	3RD QUARTER 1976	4TH QUARTER 1976
B. Iodine Releases			
1. Total I-131 Released	curies	5.30E-3	6.76E-2
2. Total I-133 Released	curies	3.20E-4	1.75E-4
3. Total I-135 Released	curies	None Detected	None Detected
4. Percent ETS Limit (I-131) Note 2	%	3.33	23.7
C. Particulate Releases			
1. Total Release	curies	4.20E-3	1.33E-3
2. Gross Alpha Released	curies	1.35E-6	1.60E-6
3. Nuclides Released			
Co-60	curies	8.00E-6	9.20E-5
Sb-125	curies	1.10E-6	-----
Ba-140	curies	1.30E-6	4.30E-7
Ru-106	curies	4.10E-6	-----
Co-58	curies	2.80E-6	8.60E-6
Mn-54	curies	5.40E-7	3.60E-6
Cr-51	curies	-----	1.40E-5
Na-22	curies	-----	1.70E-7
Zr-95	curies	-----	6.10E-7
Te-129m	curies	2.70E-6	-----
Cs-134	curies	1.40E-5	4.20E-6
Cs-137	curies	1.00E-5	4.10E-6
Zn-65	curies	1.70E-7	6.00E-7
As-76	curies	1.80E-7	1.70E-7
Ag-110m	curies	1.50E-7	3.00E-6

RADIATION EFFLUENT REPORT

July 1, 1976 thru December 31, 1976

ITEM	UNITS	3RD QUARTER 1976	4TH QUARTER 1976
4. Percent ETS Limit (Part.) Note 3	%	3.62	1.11
5. Percent ETS Limit (I-131 & Part.)Note 4	%	6.95	24.8

NOTE 1

$$\%ETS = \frac{\frac{Q_S \bar{E}}{0.21} + \frac{Q_V}{(1.4 \times 10^5) \text{ (MPC)}}}{0.16} \times 100$$

NOTE 2

$$\%ETS(I-131) = \frac{\frac{Q_S}{1.3 \times 10^{-6}} + \frac{Q_V}{1.8 \times 10^{-7}}}{0.08} \times 100$$

NOTE 3

$$\%ETS(PART) = \frac{\frac{Q_S}{1.3 \times 10^{-6}} + \frac{Q_V}{1.8 \times 10^{-7}}}{0.08} \times 100$$

NOTE 4

$$\%ETS(P\&I-131) = \frac{\frac{Q_S}{1.3 \times 10^{-6}} + \frac{Q_V}{1.8 \times 10^{-7}}}{0.08} \times 100$$

LIQUID EFFLUENTS

July 1, 1976 thru December 31, 1976

No liquid releases were made during period.

SOLID RADIOACTIVE WASTE

July thru September 1976

a. Solid radioactive waste

1. Total amount of solid radioactive waste packaged (in cubic feet).

4135 cubic feet

2. Total estimated gross radioactivity (in curies) of packaged material.

18.08 curies

3. Disposition of material including date and destination if shipped off-site.

Date	Disposition
7/8/76	NECO - Sheffield, Illinois
7/26/76	NECO - Morehead, Kentucky
8/3/76	NECO - Morehead, Kentucky
8/4/76	NECO - Morehead, Kentucky
8/24/76	NECO - Morehead, Kentucky
9/7/76	NECO - Morehead, Kentucky
9/14/76	NECO - Sheffield, Illinois

NECO - Nuclear Engineering Company

SOLID RADIOACTIVE WASTE

October thru December 1976

a. Solid radioactive waste

1. Total amount of solid radioactive packaged (in cubic feet).

3405.2 cubic feet

2. Total estimated gross radioactivity (in curies)

7.77 curies

3. Disposition of material including date and destination if shipped off-site.

Date	Disposition
10/1/76	NECO - Morehead, Kentucky
10/8/76	NECO - Morehead, Kentucky
10/21/76	NECO - Morehead, Kentucky
11/2/76	NECO - Sheffield, Illinois
11/16/76	NECO - Morehead, Kentucky
12/7/76	NECO - Morehead, Kentucky
12/23/76	NECO - Sheffield, Illinois

NECO - Nuclear Engineering Company