



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CLM/RAP

File 1510

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OCT 8 1980

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OCT 18 1980

Mr. W. Cavanaugh III
Vice President
Generation & Construction
Arkansas Power & Light Company
Ninth & Louisiana Streets
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

ARKANSAS POWER & LIGHT CO.
ARKANSAS NUCLEAR ONE

The Office of Management and Program Analysis is presently preparing a summary of radioactive effluents released from commercial nuclear power plants during 1978. The work is being performed under contract with Brookhaven National Laboratory. The report will be similar to NUREG-0521, "Radioactive Materials Released from Nuclear Power Plants 1977." It will differ from NUREG-0521 somewhat in format since it is being tailored to the reporting criteria given in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants."

In order to verify the accuracy of the information before its publication, a draft copy of the data with respect to your plant(s) is enclosed for your review. We would appreciate receiving your comments and suggested changes by October 23, 1980. Please respond to this office even if no changes to the data are required. Responses should be sent to:

M. R. Beebe
U. S. Nuclear Regulatory Commission
Office of Management and Program Analysis
Licensee Operations Evaluation Branch
Washington, D. C. 20555.

A copy of the final report will be sent to you. We expect the 1979 report to be completed shortly after the 1978 report.

Sincerely,

R. A. Hartfield, Chief
Licensee Operations Evaluation Branch
Office of Management and Program Analysis

Enclosure:
As stated

8011040418

INSTALLATION ARKANSAS ONE

LOCATION 6 MI WNW RUSSELLVILLE AD

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR YEAR 1974
SUPPLEMENTAL INFORMATION

UNIT NUMBER 1

TYPE PWR

DOCKET NO. 50-313

COOLING WATER SOURCE DARDANELLE RESERVOIR

LICENSEE ARKANSAS POWER & LIGHT

LICENSED POWER (MW) 2564.0

INITIAL CRITICALITY 0A/06/74

MAXIMUM PERMISSIBLE CONCENTRATIONS (MICROCURI/ML)

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR YEAR 1978
SUPPLEMENTAL INFORMATION

AVERAGE ENERGY (MEV/DISINTEGRATION)

ALPHA		GAMMA	
QUARTER	QUARTER	QUARTER	QUARTER
1	2	1	2

BATCH RELEASES

QUARTER	QUARTER
1	2

A. LIQUID

1. NUMBER OF BATCH RELEASES-
2. TOTAL TIME PERIOD FOR BATCH RELEASE (MIN)-
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE (MIN)-
4. AVERAGE TIME PERIOD FOR BATCH RELEASES (MIN)-
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE (MIN)-
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM (LTS/MIN)-

B. GASEOUS

1. NUMBER OF BATCH RELEASES-
2. TOTAL TIME PERIOD FOR BATCH RELEASES (MIN)-
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE (MIN)-
4. AVERAGE TIME PERIOD FOR BATCH RELEASES (MIN)-
5. MINIMUM PERIOD FOR A BATCH RELEASE (MIN)-

ANNUAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES-
2. TOTAL ACTIVITY RELEASED (CURIES)

B. GASEOUS

1. NUMBER OF RELEASES-
2. TOTAL ACTIVITY RELEASED (CURIES)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR YEAR 1978
SUPPLEMENTAL INFORMATION

AVERAGE ENERGY (MEV/DISINTEGRATION)

BETA		GAMMA	
QUARTER	QUARTER	QUARTER	QUARTER
3	4	3	4

HATCH RELEASES

QUARTER	QUARTER
3	4

A. LIQUID

1. NUMBER OF HATCH RELEASES-
2. TOTAL TIME PERIOD FOR HATCH RELEASE (MIN)-
3. MAXIMUM TIME PERIOD FOR A HATCH RELEASE (MIN)-
4. AVERAGE TIME PERIOD FOR HATCH RELEASES (MIN)-
5. MINIMUM TIME PERIOD FOR A HATCH RELEASE (MIN)-
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM (LTS/MIN)-

B. GASEOUS

1. NUMBER OF HATCH RELEASES-
2. TOTAL TIME PERIOD FOR HATCH RELEASES (MIN)-
3. MAXIMUM TIME PERIOD FOR A HATCH RELEASE (MIN)-
4. AVERAGE TIME PERIOD FOR HATCH RELEASES (MIN)-
5. MINIMUM PERIOD FOR A HATCH RELEASE (MIN)-

ANNUAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES
2. TOTAL ACTIVITY RELEASED (CURIES)

B. GASEOUS

1. NUMBER OF RELEASES
2. TOTAL ACTIVITY RELEASED (CURIES)

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION=ARKANSAS ONE

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	1.73E-01	4.21E-03	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1376.0	3876.0	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
B. IODINES				
1. TOTAL IODINE-131	CI	3.00E-03	5.00E-05	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC		5.21E-5	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES > 8 DAYS	CI			
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC			
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	2.03E-02	N/D	OK
D. POTTIUM				
1. TOTAL RELEASE	CI	6.88E-01	1.54E-00	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	OK	1.3012	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST. TOTAL PERIOD, %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	1.20E 03	1.09E 03	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	OK	OK	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
H. IODINES				
1. TOTAL IODINE-131	CI	3.42E-05	9.91E-05	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	OK	OK	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES > 4 DAYS	CI			
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC			
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	3.79E-01 OK	N/D OK	
D. TRITIUM				
1. TOTAL RELEASE	CI	1.79E 00	2.11E 00	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	OK	OK	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GAS EFFLUENTS GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER	QUARTER	QUARTER	QUARTER
		1	2	1	2
FISSION GASES					
AG-110M	CI	OK N/D	OK 3.84E-06		
AR-41	CI	OK 3.28E-01	OK 1.88E-01		
BA-133	CI	OK N/D	N/D		
BA-139	CI	N/D	N/D		
BE-7	CI	N/D	OK 3.14E-06		
BI-214	CI	N/D	OK 9.46E-06		
BR-84	CI	N/D	N/D		
BU-109	CI	OK N/D	N/D		
BU-113M	CI	OK N/D	N/D		
CE-139	CI	N/D	N/D		
CE-144	CI	N/D	N/D		
CO-57	CI	OK 4.25E-05	N/D		
CO-58	CI	OK 3.05E-04	OK 4.74E-06		
CO-60	CI	OK 5.54E-06	2.44E-06 2.31E-6		
CR-51	CI	OK 5.07E-06	N/D		
CS-136	CI	N/D	OK 2.29E-07		
CS-138	CI	N/D	N/D		
CU-64	CI	N/D	N/D		
EU-152	CI	N/D	N/D		
FE-59	CI	OK N/D	N/D		
F-18	CI	OK N/D	N/D		
HG-203	CI	N/D	OK 6.68E-07		
I-132	CI	N/D	N/D		
I-134	CI	N/D	N/D		
KR-85	CI	OK 8.30E-01	OK 6.49E-01		
KR-85M	CI	OK 9.08E-00	OK 6.51E-01		
KR-87	CI	OK N/D	N/D		
KR-88	CI	OK 7.79E-01	OK 4.65E-00		
K-40	CI	OK 3.28E-07	N/D		
LI-6	CI	OK N/D	N/D		
LI-6A	CI	N/D	N/D		
MO-99	CI	N/D	N/D		
NA-24	CI	N/D	N/D		
NA-24	CI	OK N/D	N/D		
NH-95	CI	OK N/D	N/D		
NH-97	CI	N/D	N/D		
NI-65	CI	OK N/D	N/D		
NP-239	CI	N/D	N/D		
PD-212	CI	N/D	N/D		
PD-214	CI	N/D	N/D		
RA-226	CI	N/D	OK 5.07E-06		
RY-88	CI	N/D	OK 1.09E-04		
RD-89	CI	N/D	N/D		
RU-103	CI	OK N/D	OK 3.35E-07		
RU-106	CI	OK N/D	N/D		
SB-122	CI	N/D	N/D		

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT 1974

GAS EFFLUENTS GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MONITORING		BATCH MONITORING	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AG-110M	CI	OK N/D	OK N/D		
AR-41	CI	N/D	OK 4.24E 00		
BA-133	CI	N/D	N/D		
BA-139	CI	N/D	N/D		
BE-7	CI	N/D	N/D		
BI-214	CI	N/D	N/D		
BR-84	CI	N/D	N/D		
CU-109	CI	N/D	N/D		
CU-113M	CI	N/D	N/D		
CE-139	CI	N/D	N/D		
CE-144	CI	N/D	N/D		
CO-57	CI	N/D	N/D		
CO-58	CI	OK 9.02E-06	OK 1.47E-06		
CO-60	CI	OK 1.94E-06	OK 3.95E-06		
CR-51	CI	N/D	N/D		
CS-136	CI	N/D	N/D		
CS-138	CI	N/D	N/D		
CU-64	CI	N/D	N/D		
EJ-152	CI	N/D	N/D		
FE-59	CI	N/D	N/D		
F-18	CI	N/D	N/D		
HG-203	CI	N/D	N/D		
I-132	CI	N/D	N/D		
I-134	CI	N/D	N/D		
KR-85	CI	N/D	OK 2.21E 01		
KR-85M	CI	N/D	OK 1.46E 00		
KR-97	CI	N/D	OK 1.15E 00		
KR-98	CI	N/D	OK 1.85E 00		
K-40	CI	N/D	N/D		
MA-54	CI	N/D	N/D		
MA-56	CI	N/D	N/D		
MO-90	CI	N/D	N/D		
NA-24	CI	N/D	N/D		
NH-94	CI	N/D	N/D		
ND-65	CI	N/D	N/D		
ND-97	CI	N/D	N/D		
NI-65	CI	N/D	N/D		
NP-239	CI	N/D	N/D		
PB-212	CI	N/D	N/D		
PB-214	CI	N/D	N/D		
RA-226	CI	N/D	N/D		
RB-88	CI	N/D	N/D		
RD-80	CI	N/D	N/D		
RU-103	CI	N/D	N/D		
RU-106	CI	N/D	N/D		
SJ-122	CI	N/D	N/D		

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GAS EFFLUENTS GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		HATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
SH-124	CI	OK	N/D	OK	N/D
SH-125	CI	↓	N/D	↓	N/D
SE-75	CI	↓	N/D	↓	N/D
SN-113	CI	↓	N/D	↓	N/D
SR-85	CI	OK	1.34E-09	↓	N/D
SR-91	CI	↓	N/D	↓	N/D
SR-92	CI	↓	N/D	↓	N/D
TC-99M	CI	↓	N/D	↓	N/D
TE-132	CI	↓	N/D	↓	N/D
TH-228	CI	↓	N/D	↓	N/D
U-235	CI	↓	N/D	↓	N/D
W-187	CI	↓	N/D	↓	N/D
XE-131M	CI	OK	9.14E-00	OK	1.94E-03
XE-133	CI	OK	1.13E-03	OK	1.13E-03 → 1713.0
XE-133M	CI	OK	2.01E-00	OK	9.91E-01
XE-135	CI	OK	9.40E-01	OK	2.01E-01 → 207.6
XE-135M	CI	↓	N/D	OK	N/D
XE-138	CI	↓	N/D	OK	6.07E-04
Y-88	CI	↓	N/D	OK	2.67E-06
Y-91M	CI	↓	N/D	↓	N/D
Y-92	CI	↓	N/D	↓	N/D
ZN-65	CI	↓	N/D	↓	N/D
ZH-65	CI	OK	1.54E-07	OK	8.60E-07
ZR-97	CI	OK	N/D	OK	N/D

IODINES

I-131	CI	OK	3.00E-03	OK	5.17E-05 → 5.17E-5
I-133	CI	OK	4.16E-06	OK	3.84E-07
I-135	CI	OK	N/D	OK	N/D

PARTICULATES

BA-140	CI	OK	N/D	OK	N/D
CS-134	CI	OK	1.21E-05	OK	3.10E-06
CS-137	CI	OK	1.22E-03	OK	6.47E-04 → 6.00E-6
LA-140	CI	OK	N/D	OK	N/D
SH-80	CI	OK	5.79E-06	OK	2.01E-05
SH-90	CI	OK	1.32E-07	↓	1.32E-07

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1974

GAS EFFLUENTS GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER		QUARTER	
		3	4	3	4
SH-124	CI	OK	N/D	OK	N/D
SB-125	CI		N/D		N/D
SE-75	CI		N/D		N/D
SN-113	CI		N/D		N/D
SR-85	CI		N/D		N/D
SR-91	CI		N/D		N/D
SH-92	CI		N/D		N/D
TC-99M	CI		N/D		N/D
TE-132	CI		N/D		N/D
TH-228	CI		N/D		N/D
U-235	CI		N/D		N/D
W-187	CI		N/D		N/D
XE-131M	CI	OK	1.41E-00	OK	1.23E-01
XE-133	CI	OK	8.36E-02	OK	1.03E-03
XE-133M	CI	OK	8.59E-01	OK	5.62E-00
XE-135	CI	OK	3.57E-02	OK	1.42E-01
XE-135M	CI		N/D	OK	3.43E-01
XE-138	CI		N/D		N/D
Y-88	CI		N/D		N/D
Y-91M	CI		N/D		N/D
Y-92	CI		N/D		N/D
ZN-65	CI		N/D		N/D
ZN-66	CI		N/D		N/D
ZN-97	CI		N/D		N/D

IODINES

I-131	CI	OK	3.42E-05	OK	9.91E-05
I-133	CI		N/D		N/D
I-135	CI		N/D		N/D

PARTICULATES

HA-140	CI	OK	N/D	OK	N/D
CS-134	CI	OK	2.37E-06	OK	2.68E-06
CS-137	CI	OK	1.91E-06	OK	2.56E-06
LA-140	CI	OK	N/D	OK	N/D
SR-80	CI	OK	9.40E-06	OK	2.15E-11
SR-90	CI	OK	N/D	OK	N/D

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST. TOTAL ERROR, %
A. FISSION AND ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CI	1.50E 00	9.50E-01	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.13E-08	9.92E-09	
3. PERCENT OF APPLICABLE LIMIT	%			
B. TRITIUM				
1. TOTAL RELEASE	CI	1.90E 01	3.70E 01	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.90E-07	3.45E-07	
3. PERCENT OF APPLICABLE LIMIT	%			
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	1.10E 01	7.80E 00	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.25E-07	7.45E-08	
3. PERCENT OF APPLICABLE LIMIT	%			
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	1.50E-05	3.37E-05	
E. VOLUME OF WASTE RELEASED (PRIOR TO DILUTION)				
	LITERS	2.60E 06	2.14E 06	
F. VOLUME OF DILUTION WATER USED DURING PERIOD				
	LITERS	2.48E 11	2.93E 11	

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	ENT. TOTAL EPA 174.8
A. FISSION AND ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CI	1.10E 00	2.50E 00	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.37E-02	4.87E-02	
3. PERCENT OF APPLICABLE LIMIT	%	8.31E-9	1.99E-8	
B. TRITIUM				
1. TOTAL RELEASE	CI	1.53E 02	8.50E 01	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.37E-02	2.37E-02	
3. PERCENT OF APPLICABLE LIMIT	%	1.15E-6	7.40E-7	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	5.30E 00	3.30E 01	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.37E-02	2.37E-02	
3. PERCENT OF APPLICABLE LIMIT	%	4.08E-8	2.52E-7	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	1.31E-02	9.50E-05	
E. VOLUME OF WASTE RELEASED (PRIOR TO DILUTION)				
	LITERS	3.12E 06	4.17E 06	
F. VOLUME OF DILUTION WATER USED DURING PERIOD				
	LITERS	3.97E 11	3.65E 11	

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS

ISOTOPES RELEASED	UNIT	CONTINUOUS MODE		HATCH MODE	
		QUARTER	QUARTER	QUARTER	QUARTER
		1	2	1	2
AG-110M	CI	OK 1.53E-02	OK 1.19E-02		
HA-133	CI	2.39E-05	N/D		
HA-140	CI	N/D	1.05E-03		
HE-7	CI	2.47E-03	N/D		
CE-144	CI	1.59E-03	2.81E-04		
CO-57	CI	2.08E-03	1.22E-03		
CO-58	CI	7.50E-01	2.10E-01		
CO-60	CI	1.90E-01	1.20E-01		
CR-51	CI	7.00E-02	5.20E-02		
CS-134	CI	1.10E-01	1.50E-01		
CS-136	CI	4.20E-04	4.60E-05		
CS-137	CI	1.90E-01	2.40E-01		
CS-138	CI	N/D	N/D		
CU-64	CI	0.00E-00	N/D		
EU-152	CI	N/D	N/D		
FE-59	CI	1.65E-02	1.67E-02		
I-131	CI	7.84E-02	9.08E-02		
I-132	CI	N/D	N/D		
I-133	CI	6.07E-06	1.04E-03		
I-134	CI	N/D	8.75E-04		
I-135	CI	N/D	2.79E-05		
KR-85	CI	N/D	N/D		
KR-85M	CI	1.29E-03	2.38E-07		
KY-87	CI	N/D	3.36E-06		
KR-88	CI	4.64E-06	N/D		
LA-140	CI	6.38E-04	1.14E-03		
MN-54	CI	2.53E-02	1.74E-02		
MN-56	CI	N/D	2.84E-06		
MO-99	CI	1.96E-04	9.04E-03		
NA-24	CI	1.80E-04	7.22E-05		
NU-235	CI	1.12E-02	1.05E-02		
NU-237	CI	N/D	3.30E-05		
NI-65	CI	N/D	3.12E-05		
NP-239	CI	N/D	3.32E-03		
RH-106	CI	N/D	N/D		
RU-103	CI	8.75E-05	1.55E-04		
RU-106	CI	N/D	3.55E-05		
SE-75	CI	1.54E-03	1.21E-04		
SH-89	CI	1.07E-02	1.44E-03		
SH-90	CI	N/D	4.81E-04		
SR-91	CI	1.02E-05	N/D		
SR-92	CI	1.46E-05	N/D		
W-187	CI	3.98E-07	N/D		
XE-131M	CI	1.50E-01	1.49E-02		
XE-133	CI	1.10E-01	7.70E-00		
XE-133M	CI	4.35E-02	5.69E-02		
XE-135	CI	9.20E-04	7.94E-03		

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
AG-110M	CI	OK 7.97E-03	OK 4.54E-03		
CA-133	CI	8.92E-05	N/D		
HA-140	CI	9.81E-05	N/D		
HE-7	CI	1.14E-03	3.52E-03		
CE-144	CI	9.79E-05	1.18E-04		
CO-57	CI	1.06E-03	1.60E-03		
CO-58	CI	2.20E-01	9.50E-01		
CO-60	CI	2.00E-01	2.60E-01		
CR-51	CI	4.28E-02	2.60E-01		
CS-134	CI	1.80E-01	2.10E-01		
CS-136	CI	N/D	1.81E-04		
CS-137	CI	2.80E-01	3.20E-01		
CS-138	CI	N/D	4.00E-04		
CU-64	CI	N/D	N/D		
EU-152	CI	N/D	7.82E-06		
FE-59	CI	1.33E-03	3.15E-03		
I-131	CI	1.10E-01	3.70E-01		
I-132	CI	N/D	3.48E-05		
I-133	CI	9.88E-07	8.14E-03		
I-134	CI	1.43E-04	N/D		
I-135	CI	N/D	N/D		
KR-85	CI	7.06E-04	N/D		
KR-85M	CI	5.88E-05	1.51E-03		
KR-87	CI	N/D	N/D		
KR-PR	CI	N/D	2.20E-04		
LA-140	CI	3.55E-04	4.02E-04		
MN-54	CI	2.58E-02	2.72E-02		
MO-56	CI	N/D	N/D		
MO-99	CI	7.92E-05	1.84E-03		
NA-24	CI	2.25E-05	2.54E-04		
NB-95	CI	7.44E-03	1.79E-02		
NO-97	CI	2.94E-04	1.07E-04		
NI-65	CI	N/D	N/D		
NP-239	CI	N/D	1.42E-03		
RU-103	CI	4.40E-04	2.72E-03		
RU-106	CI	N/D	N/D		
SE-75	CI	1.28E-04	1.16E-04		
SH-80	CI	N/D	8.74E-04		
SH-90	CI	4.64E-04	N/D		
SH-91	CI	N/D	N/D		
SH-92	CI	1.27E-04	1.01E-04		
W-187	CI	N/D	N/D		
XE-131M	CI	4.56E-02	5.81E-02		
XE-133	CI	5.20E-00	3.30E-01		
XE-133M	CI	1.95E-02	2.30E-01		
XE-135	CI	3.10E-03	5.52E-02		
ZN-65	CI	5.51E-05	3.52E-04		

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1974

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER	BATCH MODE QUARTER	QUARTER
		1	2	2
ZN-65	CI	7.45E-05		
ZN-65	CI	4.64E-03		
ZN-67	CI	4.74E-05		

7.95E-5

3.16E-3

6.31E-5

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EFFLUENT AND WASTE DISPOSAL CONTINGENCY REPORT 1978

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MONITORING		MATCH MONITORING	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
ZH-95	CI	1.27E-02	1.27E-02		
ZH-97	CI	N/D	9.51E-05		

3.83E-3

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N/A=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978
(JANUARY-JUNE)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)	
1. TYPE OF WASTE	UNIT
	6-MONTH PERIOD
	EST. TOTAL
	ERROR, %
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR MOTTOMS, ETC.	M3
	CI
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3
	CI
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3
	CI
D. OTHER (DESCRIBE)	M3
	CI

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N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT 1978
(JANUARY-JUNE)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1. TYPE OF WASTE	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3		
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI		
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3		
D. OTHER (DESCRIBE)	CI		

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N/D=NOT DETECTED

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978
(JULY-DECEMBER)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1. TYPE OF WASTE	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR %
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI		
B. DRY COMBUSTIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI		
C. IRRADIATED COMPONENTS, CONTROL RUDS, ETC.	M3 CI		
D. OTHER (DESCRIBE)	M3 CI		