

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT

JANUARY - JULY 1982

FACILITY: MAINE YANKEE ATOMIC POWER COMPANY

LICENSEE: MAINE YANKEE ATOMIC
POWER COMPANY

1. Regulatory Limits

- | | |
|------------------------------------|-----------------------------|
| a. Fission and activation gases: | 10 CFR 20; Paragraph 20.106 |
| b. Iodines: | " " " |
| c. Particulates, half lives 8 days | " " " |
| d. Liquid effluents: | " " " |

2. Maximum Permissible Concentrations

- | | |
|------------------------------------|-----------------------------------|
| a. Fission and activation gases: | 10 CFR 20; App. B. Table 2 Col. 1 |
| b. Iodines: | " " " |
| c. Particulates, half lives 8 days | " " " |
| d. Liquid effluents: | " " " Col. 2 |

3. Average Energy - Not Applicable

4. Measurement and Approximations of Radioactivity

a. Fission and activation gases:

Continuous discharge - vent stack samples are analyzed monthly and the levels of activities determined are assumed to hold for the period between samples. The continuous vent stack monitor reading is used as a basis for increasing periodic sample frequency. Air ejector is sampled monthly and on any increase in continuous air ejector monitor reading.

Batch discharges - direct measurement of waste gas holdup drums are made before discharge. Containment vents and purges are analyzed by direct measurement of the containment atmosphere at periodic intervals during the discharge.

b. Continuous monitoring of primary vent stack iodines are made by weekly measurements of an in-line charcoal filter.

Batch discharges - direct measurement of waste gas holdup drums before discharge.

c. Particulates - continuous monitoring of primary vent stack is made by weekly measurement of an in-line particulate filter.

Batch discharges - direct measurement of waste gas holdup drums before discharge.

d. Liquid Effluents

Weekly sample of secondary systems liquid effluents for gross Beta-gamma, alpha, tritium, dissolved gases and gamma emitting isotopes each batch release.

Composite samples are made of secondary and primary systems liquid effluents for a quarterly analysis of strontium 90 and 89.

5. Batch Release

a. Liquid

1. Number of releases:	92
2. Total time for batch releases:	462 hrs 30 min
3. Maximum time for batch releases:	66 hrs 45 min
4. Average time for batch releases:	5 hrs 2 min
5. Minimum time for batch releases:	43 min
6. Average stream flow during periods of release of effluent into a flowing stream:	
7. Maximum gross release rate (uci/ml)	4.09 E-8

b. Gaseous

1. Number of batch releases:	29
2. Total time period for batch releases:	572 hrs 51 min
3. Maximum time period for a batch release:	225 hrs 40 min
4. Average time period for a batch release:	19 hrs 45 min
5. Minimum time for a batch release:	30 min
6. Maximum gross release rate (uci/sec):	5.41 E+2

6. Abnormal Releases

a. Liquid

There were no abnormal liquid releases during this reporting period.

b. Gaseous

There were no abnormal gaseous releases during this reporting period.

c. The following table is not attached since there was no applicable release during this reporting period.

Table 1C - Gaseous Effluents, Ground Level Releases.

RELEASE OF WASTE GAS STORAGE DRUMS BEFORE 60-DAY HOLDUP PERIOD

Technical Specification 3.17B3 requires a special effluent report should the average holdup time of waste gas be less than 60 days.

The following drum had a holdup time of less than 60 days during normal operations in the first half of 1982.

<u>Release No.</u>	<u>Decay Drum</u>	<u>Date Isolated</u>	<u>Date Released</u>	(In days) <u>Holdup Time</u>	<u>Cu.Ft.</u>
618	A	3/18/82	4/23/82	36	928

The average holdup time for the first half of 1982, of all decay drums during normal operation, was 65 days.

Early release of the decay drum by Permit No. 618 was required by the needed backup storage space. This drum contained low activity gases resulting from the March maintenance shutdown.

TABLE 1A
 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1982
 GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	1ST QUARTER	2ND QUARTER	EST. TOTAL ERROR %
A. FISSION & ACTIVATION GASES				
1. Total Release	CI	6.86E+01	5.12E-03	3.92E+00
2. Average Release Rate for Period	UCI/SEC	8.73E+00	6.51E-04	-----
3. % of Tech. Specification Limit	%	9.68E-02	4.88E-06	
B. IODINES				
1. Total Iodine-131	CI	6.95E-05	N/D*	1.87E+01
2. Average Release Rate for Period	UCI/SEC	8.85E-06	N/D*	-----
3. % of Tech. Specification Limit	%	2.30E-04	N/D*	
C. PARTICULATES				
1. Particulates with T 1/2 > 8 Days	CI	1.15E-05	1.01E-06	1.85E+01
2. Average Release Rate for Period	UCI/SEC	1.46E-06	1.29E-07	-----
3. % of Tech. Specification Limit	%	3.92E-06	4.70E-07	
4. Gross Alpha Radioactivity	CI	2.16E-07	1.05E-08	
D. TRITIUM				
1. Total Release	CI	2.44E+00	6.58E-01	6.34E-01
2. Average Release Rate for Period	UCI/SEC	3.10E-01	8.36E-02	-----
3. % of Tech. Specification Limit	%	4.02E-03	1.08E-03	

* N/D = Not detected.

TABLE 1B
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1982
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		1ST QUARTER	2ND QUARTER	1ST QUARTER	2ND QUARTER
1. FISSION GASES					
KR-85	CI	N/D*	N/D*	9.76E-03	N/D*
KR-85M	CI	N/D*	N/D*	N/D*	N/D*
KR-87	CI	N/D*	N/D*	N/D*	N/D*
KR-88	CI	N/D*	N/D*	2.20E-04	N/D*
XE-133	CI	N/D*	N/D*	5.48E+01	2.41E-03
XE-135	CI	N/D*	N/D*	4.86E+00	N/D*
XE-135M	CI	N/D*	N/D*	5.21E-05	N/D*
XE-138	CI	N/D*	N/D*	N/D*	N/D*
XE-131M	CI	N/D*	N/D*	6.83E+00	2.71E-03
XE-133M	CI	N/D*	N/D*	8.17E-01	N/D*
AR-41	CI	N/D*	N/D*	N/D*	N/D*
UNIDENTIFIED	CI	N/D*	N/D*	1.29E-00	N/D*
TOTAL FOR PERIOD	CI	N/D*	N/D*	6.73E+01	5.12E-03
2. IODINES					
I-131	CI	6.95E-05	N/D*	N/D*	N/D*
I-132	CI	N/D*	N/D*	N/D*	N/D*
I-133	CI	3.83E-04	N/D*	N/D*	N/D*
I-134	CI	N/D*	N/D*	N/D*	N/D*
I-135	CI	N/D*	N/D*	N/D*	N/D*
TOTAL FOR PERIOD	CI	4.53E-04	N/D*	N/D*	N/D*
3. PARTICULATES					
SR-89	CI	N/D*	N/D*	N/D*	N/D*
SR-90	CI	N/D*	N/D*	N/D*	N/D*
CS-134	CI	N/D*	N/D*	N/D*	N/D*
CS-137	CI	5.20E-07	6.15E-07	N/D*	N/D*
BA-140	CI	N/D*	N/D*	N/D*	N/D*
OTHERS	CO-60	3.13E-06	N/D*	N/D*	N/D*
	CO-58	8.76E-07	3.98E-07	N/D*	N/D*
UNIDENTIFIED	CI	N/D*	N/D*	N/D*	N/D*

* N/D = Not detected.

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1982

LIQUID EFFLUENTS--SUMMATION OF ALL RELEASES

	UNIT	1ST QUARTER	2ND QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION PRODUCTS*				
1. Total Release	CI	2.99E-01	3.30E-01	3.98E-01
2. Average Diluted Concentration During Period	UCI/ML	1.77E-09	1.59E-09	
3. % Applicable Limit	%	1.66E-02	1.47E-02	
B. TRITIUM				
1. Total Release	CI	9.15E+01	5.00E+01	2.78E-01
2. Average Diluted Concentration During Period	UCI/ML	5.14E-07	2.41E-07	
3. % Applicable Limit	%	1.80E-02	8.02E-03	
C. DISSOLVED AND ENTRAINED GASES				
1. Total Release	CI	1.89E-03	5.38E-03	4.62E+01
2. Average Diluted Concentration During Period	UCI/ML	1.12E-11	2.58E-11	
3. % Applicable Limit	%	5.58E-06	1.29E-05	
D. GROSS ALPHA RADIOACTIVITY				
1. Total Release	CI	1.86E-03	5.23E-04	5.13E+00
E. VOLUME OF WASTE				
	LITERS	1.87E+07	9.68E+06	1.00E+01
F. VOLUME OF DILUTION				
	LITERS	1.69E+11	2.08E+11	1.00E+01

*TOTAL RELEASE EXCLUDING TRITIUM, GASES, AND ALPHA.

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT 1982
LIQUID EFFLUENTS

NUCLIDES RELEASED: UNIT		CONTINUOUS MODE		BATCH MODE	
		QUARTER-1	QUARTER-2	QUARTER-1	QUARTER-2
SR-89	CI	N/D*	N/D*	1.00E-03	2.77E-04
SR-90	CI	N/D*	N/D*	6.03E-05	N/D*
CS-134	CI	N/D*	N/D*	1.73E-03	6.95E-04
CS-137	CI	4.63E-06	N/D*	2.11E-02	1.28E-02
I-131	CI	N/D*	N/D*	3.73E-03	7.04E-03
CO-58	CI	N/D*	N/D*	2.35E-01	2.79E-01
CO-60	CI	N/D*	N/D*	6.29E-03	9.00E-03
FE-59	CI	N/D*	N/D*	N/D*	N/D*
ZN-65	CI	N/D*	N/D*	N/D*	N/D*
MN-54	CI	N/D*	N/D*	1.20E-03	1.96E-03
CR-51	CI	N/D*	N/D*	N/D*	N/D*
ZR-95	CI	N/D*	N/D*	N/D*	N/D*
MO-99	CI	N/D*	N/D*	3.09E-05	4.93E-05
TC-99M	CI	N/D*	N/D*	N/D*	N/D*
BA-140	CI	N/D*	N/D*	N/D*	N/D*
CE-141	CI	N/D*	N/D*	N/D*	N/D*
OTHER	F-18	CI	N/D*	1.04E-03	1.26E-02
	I-133	CI	N/D*	1.40E-03	2.40E-03
	CE-139	CI	N/D*	3.08E-04	N/D*
	CS-138	CI	N/D*	1.28E-02	N/D*
	XE-131M	CI	N/D*	1.34E-02	N/D*
	CO-57	CI	N/D*	N/D*	8.20E-05
	SB-124	CI	N/D*	N/D*	4.59E-03
UNIDENTIFIED		CI	7.80E-05	1.66E-05	N/D*

TOTAL FOR PERIOD	CI	4.63E-06	N/D*	2.99E-01	3.30E-01
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XE-133	CI	N/D*	N/D*	1.62E-03	3.70E-03
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