

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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50-213
245
336

September 26, 1978

REGULATORY DOCKET FILE COPY

Office of Management and Program Analysis
Operating Data Section, 12105 MNBB
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: (1) R. G. Muranaka letter to D. C. Switzer dated September 8, 1978.

Gentlemen:

Haddam Neck Plant
Millstone Nuclear Power Station, Unit Nos. 1 and 2

Reference (1) indicated that a summary of radioactive effluents released from commercial nuclear power plants in 1977 is being prepared by the Office of Management and Program Analysis. Data for the Haddam Neck Plant and Millstone Unit Nos. 1 and 2 were provided for our review to verify the accuracy of the information prior to publication. In those instances where corrections were necessary, asterisks have been used to indicate the corrected values. This response is being submitted later than the requested date of September 22, 1978 because the Millstone Unit No. 2 data was not included as a part of your original letter and not received until September 22, 1978. If you have questions concerning any of the data provided, you may contact Mr. R. A. Crandall at (203) 666-6911, Extension 5863.

We trust this information is responsive to your request.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

W. G. Council
W. G. Council
Vice President

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U.S. NUCLEAR REGULATORY COMMISSION
DISTRICT OFFICE
SERVICES

Attachment

REGULATORY DOCKET FILE COPY

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Facility: Haddam Neck Docket No: 50-213
Type: PWR Licensed Power (MWT): 1825.0
Location: 9.5 Mi SE Middletown, CT Initial Criticality: 7/24/67
Cooling Water Source: Connecticut River

Operation

Gross Thermal Generation (MWHT): 1.31E+07
Net Electrical (MWHE): 4.01E+06

Summary of Effluents (Curies)

Airborne:

- a) Total Noble Gases 3.12E+03
- b) Total I-131 7.79E-04
- c) Total Halogens (Including I-131) 7.95E-04
- d) Total Particulates (T/2 > 8 day) 9.64E-04
- e) Total Tritium 1.19E+02*

Liquid:

- a) Total Mixed Fission & Actuation Products 1.94E+00*
- b) Total Tritium 6.67E+03
- c) Dissolved Noble Gases 7.57E-01
- d) Volume of Liquid Waste Released (Liters) 6.04E+07
- e) Volume of Dilution Water (Liters) 7.35E+11

Solid Waste:

- a) Volume (Cubic Meters) 1.68E+03
- b) Activity (Curies) 8.41E+02
- c) Number of Shipments 83

NOTE: $1.64E+07 = 1.64 \times 10^7$
ND = Non Detectable
NR = Not Reported

SUMMARY OF EFFLUENTS (CURIES)

Airborne

AR-37	1.16E+02
AR-41	7.97E-02
KR-85	2.02E+02
KR-85M	2.83E-01
KR-87	1.87E-01
KR-88	3.56E-01
XE-131M	3.26E+01
XE-133	2.73E+03
XE-133M	4.38E+00
XE-135	2.50E+00
XE-135M	1.23E-01
XE-138	2.77E-02

I-131	7.79E-04
I-133	1.59E-05
I-135	ND*

H-3	1.19E+02
C-14	3.01E+01
MN-54	4.61E-06
CO-58	6.18E-06
CO-60	1.46E-04
SR-89	1.91E-05
SR-90	2.40E-06
ZR-95	8.19E-07
RU-106	3.93E-06
CS-134	9.75E-06
CS-137	4.29E-05
CE-144	1.75E-06
BA/LA-140	ND*

Liquid

AR-37	4.41E-03
CR-51	3.50E-02
MN-54	1.91E-02
CO-57	1.30E-05
CO-58	1.72E-01
CO-60	4.58E-01
FE-59	ND*

Liquid (Cont.)

ZN-65	7.18E-05
KR-85	1.58E-03
SR-89	3.16E-03
SR-90	2.87E-04
ZR/NB-95	3.33E-03
	*
MO-99	ND*
TC-99M	ND*
RU-103	1.00E-03
RU-106	3.90E-03
AG-110M	1.55E-03
SB-124	5.21E-04
SB-125	ND*
I-131	1.12E+00
I-133	7.13E-03
XE-133	7.26E-01
XE-135	2.48E-02
CS-134	3.14E-02
CS-137	7.52E-02
CE-141	ND*
CE-144	9.13E-03
BA/LA-140	1.65E-02
EU-154	ND*
BE-7	2.99E-03
Unidentified	5.13E-05
H-3	6.67E+03

Facility: Millstone Point 1 Docket No: 50-245
Type: BWR Licensed Power (MWT): 2011.0
Location: 3.2 Mi WSW New London, CT Initial Criticality: 10/26/70
Cooling Water Source: Long Island Sound

Operation

Gross Thermal Generation (MWHT): 1.48E+07
Net Electrical (MWHE): 4.82E+06

Summary of Effluents (Curies)

Airborne:

- a) Total Noble Gases 6.20E+05
- b) Total I-131 4.66E+00
- c) Total Halogens (Including I-131) 6.10E+01
- d) Total Particulates (T/2 > 8 day) 2.01E-01
- e) Total Tritium 6.52E+01

Liquid:

- a) Total Mixed Fission & Actuation Products 5.27E-01
- b) Total Tritium 4.41E+00
- c) Dissolved Noble Gases 3.67E-1
- d) Volume of Liquid Waste Released (Liters) 2.60E+06
- e) Volume of Dilution Water (Liters) 1.66E+10

Solid Waste:

- a) Volume (Cubic Meters) 1.77E+03
- b) Activity (Curies) 3.03E+03
- c) Number of Shipments 2.16E+02

NOTE: 1.64E+07 = 1.64 x 10⁷
ND = Non Detectable
NR = Not Reported

SUMMARY OF EFFLUENTS (CURIES)

Airborne

KR-83M	2.48E+04
KR-85	4.56E+01
KR-85M	4.10E+04
KR-87	1.20E+05
KR-88	1.42E+05
KR-89	9.40E+00
XE-131M	4.29E+01
XE-133	2.42E+04
XE-133M	1.29E+03
XE-135	1.37E+05
XE-135M	2.03E+04
XE-137	8.86E+01
XE-138	1.08E+05

I-131	4.63E+00
I-133	2.76E+01
I-135	2.87E+01

MN-54	4.20E-03
FE-59	4.02E-04*
SR-89	2.26E-2
SR-90	1.58E-04
I-131 (Particulate)	2.13E-02*
CS-134	9.69E-04
CS-137	2.06E-03
BA/LA-140	1.42E-01

Liquid

MN-54	4.05E-02
CO-58	1.82E-02
CO-60	1.06E-01
SR-89	3.47E-03
SR-90	8.94E-04
ZR-95	1.03E-04
NB-95	3.65E-04
MO-99	2.14E-04
I-131	2.75E-03*
I-133	9.93E-04
XE-133	2.66E-01
XE-135	1.00E-01

Liquid (Cont.)

CS-134	1.25E-01
CS-137	2.28E-01
BA/LA-140	2.59E-04*

Facility: Millstone Point 2 Docket No: 50-336
Type: PWR Licensed Power (MWT): 2560.0
Location: 3.2 Mi WSW New London, CT Initial Criticality: 10/17/75
Cooling Water Source: Long Island Sound

Operation

Gross Thermal Generation (MWHT): 1.42E+07
Net Electrical (MWHE): 4.34E+06

Summary of Effluents (Curies)

Airborne:

- a) Total Noble Gases 2.35E+03*
- b) Total I-131 4.08E-03
- c) Total Halogens (Including I-131) ~~6.15E-03*~~
- d) Total Particulates (T/2 > 8 day) 3.94E-04
- e) Total Tritium 1.90E+00

Liquid:

- a) Total Mixed Fission & Actuation Products 1.56E+00
- b) Total Tritium 2.11E+02
- c) Dissolved Noble Gases 3.03E+00
- d) Volume of Liquid Waste Released (Liters) 7.18E+06
- e) Volume of Dilution Water (Liters) 3.81E+10

Solid Waste:

- a) Volume (Cubic Meters) 9.35E+01
- b) Activity (Curies) 5.80E+01
- c) Number of Shipments 12

NOTE: $1.64E+07 = 1.64 \times 10^7$
ND = Non Detectable
NR = Not Reported

SUMMARY OF EFFLUENTS (CURIES)

Airborne

AR-37	8.53E+01*	
AR-41	ND*	
KR-85	1.93E+01	
XE-131M	4.47E-01	
XE-133	2.32E+03	
XE-135	2.71E+01	
XE-135M	5.09E-03	
I-131	4.08E-03	
I-133	5.24E-04	
I-135	3.68E-04	
MN-54	2.48E-06	
CO-58	1.44E-04	
CO-60	5.67E-04*	
SR-89	7.39E-07	
SR-90	2.96E-07	
I-131 (Particulate)		2.07E-06
CS-134	1.67E-05	
CS-137	7.74E-05	

Liquid

CR-51	9.58E-04
MN-54	6.74E-02
CO-58	1.05E+00
CO-60	3.64E-01
FE-59	8.11E-03
ZN-65	5.90E-05
SR-89	1.11E-03
SR-90	1.12E-04
ZR-95	4.81E-03
NB-95	1.61E-02*
I-131	1.18E-02
XE-133	3.01E+00
XE-135	2.26E-02
CS-134	1.43E-02
CS-137	2.02E-02
BA/LA-140	MDL
NA-24	7.96E-04
H-3	2.11E+02