B 10/03/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
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CAROLINA PWR & LIGHT
DOCDATE: 09/27/78
DATE RCVD: 10/02/78

DOCTYPE: LETTER NOTARIZED: NO
COPIES RECEIVED
LTR 1 ENCL 1
SUBJECT:
FORWARDING COPY OF APPLICANT"S DATA SHEETS CONTAINING NECESSARY CHANGES IN REGARDS TO NRC LTR OF 09/08/78 WHICH TRANS SUMMARY OF RADIOACTIVE EFFLUENTS RELEASED DURING 1977.

PLANT NAME: H B ROBINSON -- UNIT 2
BRUNSWICK #2
BRUNSWICK #1
REVIEWER INITIAL: XJM
DISTRIBUTER INITIAL: RTW

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********** THE END **********

cep

CP&L
Carolina Power & Light Company

September 27, 1978



FILE: NG 3513(B&R) SERIAL: GD-78-2610



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

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO.
BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 & 2
DOCKET NOS. 50-261, 325, AND 324
1977 SUMMARY OF RELEASED RADIOACTIVE EFFLUENTS

Dear Sir:

Your letter of September 8, 1978, transmitted a summary of radioactive effluents released during 1977 from Carolina Power & Light Company's commercial nuclear power plants for our review. Attached you will find a copy of the Brunswick and Robinson data sheets with the changes we feel are necessary.

The Brunswick data did not have the unidentified gaseous releases added into the total. This has been done in our corrections and several apparent typographical or arithmetic errors have been corrected.

For H. B. Robinson, your summary had apparently added the continuous mode releases to the batch mode releases. However, the batch releases are already included in the continuous data and this has resulted in your double-counting some gaseous release values. In addition, a few arithmetic or typographical corrections have been made.

Thank you for this opportunity to review this material prior to its release.

Yours very truly,

E. E. Utley
Senior Vice President
Power Supply

CSB/mf
Attachments

336 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

A001/S *
1/1

Facility: Brunswick 1 & 2 Docket No: 50-325/324

Type: BWR Licensed Power (MWT): 2436.0 2436.0

Location: 20 Mi S Wilmington, NC Initial Criticality: 10/8/76 3/20/75

Cooling Water Source: Cape Fear River

Operation

Gross Thermal Generation (MWHT): 7.91E+06 7.94E+06

Net Electrical (MWHE): 2.52E+06 2.44E+06

Summary of Effluents (Curies)

Airborne:

a) Total Noble Gases ~~2.46E+05~~ 2.57E+05

b) Total I-131 ~~7.80E-01~~ 7.79E-01

c) Total Halogens (Including I-131) ~~1.22E+00~~ 1.37E+00

d) Total Particulates (T/2>8 day) ~~1.38E-01~~ 2.78E-01

e) Total Tritium ~~1.37E+00~~ 1.37E+01

Liquid:

a) Total Mixed Fission & Actuation Products 6.22E+00

b) Total Tritium 8.93E+00

c) Disolved Noble Gases 2.18E-01

d) Volume of Liquid Waste Released (Liters) 4.78E+07

e) Volume of Dilution Water (Liters) ~~2.96E+11~~ 2.69E+11

Solid Waste:

a) Volume (Cubic Meters) 2.47E+03

b) Activity (Curies) 3.24E+03

c) Number of Shipments 2.23E+02

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

SUMMARY OF EFFLUENTS (CURIES)

Airborne

| | | |
|---|---|---|
| AR-41 | ~~2.20E+03~~ | 2.02 E+03 |
| KR-85M | 1.51E+04 | |
| KR-87 | 2.67E+04 | |
| KR-88 | 2.53E+04 | |
| XE-133 | 4.71E+04 | |
| XE-133M | 1.14E+03 | |
| XE-135 | 7.71E+04 | |
| XE-135M | 1.65E+04 | |
| XE-138 | 1.94E+04 | |
| UNID NOBLE GAS | 2.63E+04 | |
| I-131 | 7.79E-01 | |
| I-133 | 4.12E-01 | |
| I-135 | ~~8.73E-01~~ | 1.75 E-01 |
| CR-51 | 3.15E-02 | |
| MN-54 | 1.64E-02 | |
| FE-59 | ~~5.04E-03~~ | 4.98 E-03 |
| Co-57 ~~NI-57~~ | 2.60E-07 | |
| CO-58 | 7.74E-03 | |
| CO-60 | 1.35E-02 | |
| ZN-65 | ~~4.50E-03~~ | 4.43 E-03 |
| Y-88 | ~~1.40E-02~~ | 1.78 E-03 |
| SR-89 | 6.83E-02 | |
| Y-91 | 1.07E-04 | |
| SR-90 | 5.74E-02 | |
| ZR/NB-95 | ~~1.74E-04~~ | 1.64 E-04 |
| CD-109 | 3.26E-04 | |
| I-131 (Particulate) | ~~1.46E-02~~ | 1.40 E-02 |
| CS-134 | 1.64E-03 | |
| CS-136 | 3.00E-05 | |
| CS-137 | 4.66E-03 | |
| CE-139 | 2.24E-03 | |
| CE-144 | 3.28E-04 | |
| SN-117M | 1.30E-06 | |
| SB-124 | 1.69E-05 | |
| BA/LA-140 | 2.07E-02 | |
| Unidentified | 2.81E-02 | |

Liquid

| | | |
|---|---|---|
| | F-18 | 5.49E-02 |
| | CR-51 | 1.16E+00 |
| | MN-54 | 8.62E-01 |
| | MN-56 | 5.28E-03 |
| | CO-58 | 3.07E-01 |
| | CO-60 | 4.90E-01 |
| | FE-59 | 2.68E-01 |
| | CU-64 | 1.46E-01 |
| | ZN-65 | 1.30E-01 |
| ZN-69M | ~~ZN-65M~~ | 4.66E-07 (Metastable?) |
| | KR-85 | 9.22E-03 |
| | KR-85M | 5.07E-04 |
| | SR-85 | 3.71E-05 |
| | SR-89 | 3.89E-03 |
| | SR-90 | ~~7.77E-03~~ 2.09E-03 |
| | ZR/NB-95 | 1.41E-02 |
| | MO-99 | 1.86E-02 |
| | TC-99M | 1.93E-02 |
| | TC-101 | 2.03E-04 |
| | IN-113M | 2.65E-05 |
| | SB-122 | 1.25E-02 |
| | SB-124 | 4.76E-01 |
| | I-131 | 8.63E-01 |
| | I-132 | ~~6.95E-07~~ 1.45E-06 |
| | I-133 | 4.72E-02 |
| | XE-131M | 1.57E-03 |
| | XE-133 | 1.70E-01 |
| | XE-135 | 2.21E-02 |
| | CS-134 | ~~1.42E-01~~ 2.14E-01 |
| | CS-136 | 2.04E-03 |
| | CS-137 | 6.21E-01 |
| | CS-138 | 2.03E-03 |
| | CE-139 | 2.07E-04 |
| | CE-141 | 1.22E-05 |
| | CE-144 | 6.26E-03 |
| | BA-139 | 8.86E-04 |
| | NB-97M | 1.34E-04 |
| | BA/LA-140 | 7.33E-04 |
| | W-187 | 2.15E-04 |
| | NA-22 | 7.55E-05 |
| | NA-24 | 3.57E-01 |
| | NI-65 | 3.06E-07 |
| | AS-76 | 2.87E-02 |

| | |
|---|---|
| HG-203 | 5.68E-05 |
| NB-97 | 5.52E-04 |
| SR-92 | 1.43E-05 |
| RH-106 | 5.16E-04 |
| AR-41 | 9.46E-03 |
| Y-91M | 1.51E-04 |
| ZR-97 | 1.40E-04 |
| SR-91 | 9.20E-05 |
| TE-129M | 2.60E-04 |
| TE-132 | 5.15E-06 |
| SN-113 | 1.73E-05 |
| CO-57 | 9.30E-05 |
| SN-117M | 8.74E-05 |
| Unidentified | 5.64E-01 |

Facility: H. B. Robinson Docket No: 50-261

Type: PWR Licensed Power (MWT): 2200.0

Location: 4.5 Mi WNW Hartsville, SC Initial Criticality: 9/20/70

Cooling Water Source: Robinson Inpoundment

Operation

Gross Thermal Generation (MWHT): 1.43E+07

Net Electrical (MWHE): 4.23E+06

Summary of Effluents (Curies)

Airborne:

a) Total Noble Gases 2.59E+02

b) Total I-131 ~~2.75E-03~~ 2.76 E-03

c) Total Halogens (Including I-131) ~~1.16E-02~~ 1.02 E-02

d) Total Particulates (T/2>8 day) 2.52E-04

e) Total Tritium 6.09E+01

Liquid:

a) Total Mixed Fission & Actuation Products ~~3.29E-01~~ 3.28 E-01

b) Total Tritium 6.85E+02

c) Disolved Noble Gases 5.50E-02

d) Volume of Liquid Waste Released (Liters) ~~1.21E+07~~ 1.21E+08

e) Volume of Dilution Water (Liters) 7.00E+11

Solid Waste:

a) Volume (Cubic Meters) 2.59E+02

b) Activity (Curies) 1.24E+03

c) Number of Shipments 30

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

SUMMARY OF EFFLUENTS (CURIES)

Airborne

| | | |
|---|---|---|
| AR-41 | ~~2.31E+01~~ | 2.14 E+01 |
| KR-85 | ~~1.51E+00~~ | 4.62 E-01 |
| KR-85M | ~~1.02E+01~~ | 4.72 E+00 |
| KR-87 | ~~6.90E+00~~ | 4.90 E+00 |
| KR-88 | ~~5.48E+00~~ | 3.69 E+00 |
| XE-133 | ~~4.03E+02~~ | 2.15 E+02 |
| XE-133M | ~~7.65E-02~~ | 5.22 E-02 |
| XE-135 | ~~1.63E+01~~ | 4.29 E+00 |
| XE-135M | ~~8.95+00~~ | 4.14 E+00 |
| I-131 | ~~3.63E-03~~ | 2.76 E-03 |
| I-133 | ~~5.03E-03~~ | 4.64 E-03 |
| I-135 | ~~2.91E-03~~ | 2.82 E-03 |
| CR-51 | ~~5.74E-06~~ | 5.26 E-06 |
| MN-54 | ~~9.89E-06~~ | 3.42 E-06 |
| FE-59 | ~~1.22E-10~~ | 0.0 |
| CO-57 | ~~3.28E-06~~ | 3.23 E-06 |
| CO-58 | ~~8.52E-05~~ | 7.57 E-05 |
| CO-60 | ~~1.19E-04~~ | 1.10 E-04 |
| ZN-65 | ~~4.41E-06~~ | 4.14 E-06 |
| SR-89 | ~~1.36E-07~~ | 9.28 E-08 |
| SR-90 | ~~7.12E-08~~ | 5.07 E-08 |
| NI-95 | ~~3.45E-06~~ | 3.44 E-06 |
| ZR-97 | 2.56E-06 | |
| NI-97 | ~~2.32E-06~~ | 2.30 E-06 |
| CD-109 | 8.90E-06 | |
| CS-134 | ~~8.82E-06~~ | 3.01 E-06 |
| CS-137 | ~~3.04E-05~~ | 2.19 E-05 |
| CE-139 | ~~1.31E-06~~ | 6.03 E-07 |
| CE-141 | 1.70E-06 | |
| CE-144 | ~~5.5E-07~~ | 0.0 |
| AG-110M | ~~9.20E-07~~ | 9.18 E-07 |
| SB-125 | ~~1.53E-06~~ | 1.52 E-06 |
| BA-139 | ~~3.79E-06~~ | 9.75 E-08 |
| BA/LA-140 | ~~1.77E-05~~ | 3.11 E-06 |

Liquid

| | |
|---|---|
| CR-51 | 1.37E-03 |
| MN-54 | 2.53E-02 |

Liquid (Cont.)

| | |
|---|---|
| CO-57 | 3.29E-04 |
| CO-58 | 7.58E-02 |
| CO-60 | 1.33E-01 |
| FE-59 | 7.91E-04 |
| ZN-65 | 2.38E-03 |
| ZR/NB-95 | 1.12E-03 |
| MO-99 | 1.10E-03 |
| AG-110M | 3.25E-03 |
| SB-124 | 7.60E-04 |
| SB-125 | 1.08E-03 |
| I-131 | ~~9.27E-04~~ 1.26E-03 |
| XE-133 | 4.88E-02 |
| XE-135 | 6.14E-03 |
| CS-134 | 3.25E-02 |
| CS-137 | 4.37E-02 |
| CE-139 | 6.33E-05 |
| CE-141 | 1.35E-04 |
| BA/LA-140 | 3.08E-03 |
| CD-109 | 1.89E-04 |
| NA-24 | 1.26E-03 |