



**Consumers
Power
Company**

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

August 31, 1976

COPY

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Director of Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, DC 20555

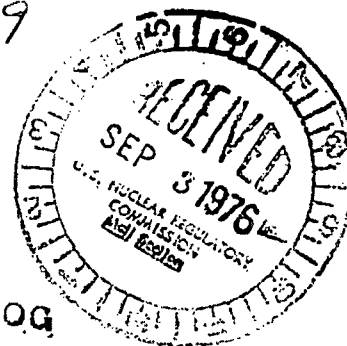
DOCKET 50-155, LICENSE DPR-6 -
BIG ROCK POINT PLANT

Attached are the radioactive effluent summaries for the Big Rock Point Plant for the period of January 1, 1976 through June 30, 1976. These summaries are submitted to fulfill the reporting requirements of 10 CFR 50.36.a(2).

Ralph B. Sewell (Signed)

Ralph B. Sewell
Nuclear Licensing Administrator

CC: JGKepler
USNRC



8971

CONSUMERS POWER COMPANY
BIG ROCK POINT PLANT, DOCKET NO 50-155
ATMOSPHERIC RELEASE OF RADIOACTIVE MATERIAL

1976

| | UNITS | JANUARY | FEBRUARY | MARCH | 1st QUARTER | APRIL | MAY | JUNE | 2nd QUARTER | SIX-MONTH TOTAL |
|-------------------------------------|--------|----------|----------|----------|-------------|----------|----------|----------|-------------|-----------------|
| Total Noble Gases | Curies | 7.52E+03 | ----- | ----- | 7.52E+03 | ----- | ----- | ----- | ----- | 7.52E+03 |
| Total Halogens | | 1.75E-03 | 4.28E-03 | 1.77E-04 | 6.21E-03 | 8.23E-06 | ----- | ----- | 8.23E-06 | 6.22E-03 |
| Total Particulates (S, Y) | | 1.96E-03 | 3.82E-04 | 3.52E-04 | 2.70E-03 | 6.16E-04 | 2.72E-04 | 2.55E-04 | 1.14E-03 | 2.84E-03 |
| Total Tritium | | 9.36E-01 | 1.42E-01 | 1.53E-01 | 1.23E+00 | 1.48E-01 | 1.53E-01 | 1.48E-01 | 4.49E-01 | 1.68E+00 |
| Total Particulates - Gross Alpha | | 5.34E-07 | 2.24E-07 | 1.39E-07 | 8.97E-07 | 2.95E-07 | 2.55E-07 | 3.61E-07 | 9.11E-07 | 1.81E-06 |
| Maximum Noble Gas Release Rate | μCi/S | 4.17E+03 | ----- | ----- | 4.17E+03 | ----- | ----- | ----- | ----- | 4.17E+03 |
| Percent of Technical Specifications | % | | | | | | | | | |
| Noble Gases | | 2.81E-01 | ----- | ----- | 9.56E-04 | ----- | ----- | ----- | ----- | 4.78E-04 |
| Halogens | | 4.30E-02 | 1.41E-01 | 5.49E-03 | 6.15E-02 | 2.65E-04 | ----- | ----- | 8.72E-05 | 3.08E-02 |
| Particulates (S, Y) | | 3.63E-02 | 5.86E-03 | 8.13E-03 | 1.70E-02 | 1.37E-02 | 2.68E-03 | 3.39E-03 | 6.53E-03 | 1.18E-02 |
| Isotopes Released | Curies | | | | | | | | | |
| Halogens | | | | | | | | | | |
| I-131 | | 1.26E-03 | 4.23E-03 | 1.77E-04 | 5.67E-03 | 8.23E-06 | ----- | ----- | 8.23E-06 | 5.67E-03 |
| I-133 | | 4.95E-04 | 5.20E-05 | ----- | 5.47E-04 | ----- | ----- | ----- | ----- | 5.47E-04 |
| Particulates | | | | | | | | | | |
| Cs-134 | | 4.54E-05 | 1.82E-05 | ----- | 6.36E-05 | 8.19E-07 | 1.72E-05 | 1.56E-05 | 3.36E-05 | 9.72E-05 |
| Cs-137 | | 9.22E-05 | 4.53E-05 | ----- | 1.37E-04 | 7.68E-05 | 1.16E-04 | 8.38E-05 | 2.77E-04 | 4.14E-04 |
| BaLa-140 | | 7.01E-04 | ----- | ----- | 7.01E-04 | ----- | ----- | ----- | ----- | ----- |
| Co-60 | | 8.55E-05 | 2.35E-04 | 1.35E-04 | 4.55E-04 | 1.92E-04 | 1.19E-04 | 1.06E-04 | 4.17E-04 | 8.73E-04 |
| Net Unidentified Beta | | 1.04E-03 | 8.43E-05 | 2.16E-04 | 1.34E-03 | 3.45E-04 | 1.89E-05 | 4.94E-05 | 4.13E-04 | 1.75E-03 |
| Noble Gases | | | | | | | | | | |
| Xe-138 | | 1.11E+03 | ----- | ----- | 1.11E+03 | ----- | ----- | ----- | ----- | 1.11E+03 |
| Kr-87 | | 1.19E+03 | ----- | ----- | 1.19E+03 | ----- | ----- | ----- | ----- | 1.19E+03 |
| Kr-88 | | 1.08E+03 | ----- | ----- | 1.08E+03 | ----- | ----- | ----- | ----- | 1.08E+03 |
| Kr-85m | | 4.17E+02 | ----- | ----- | 4.17E+02 | ----- | ----- | ----- | ----- | 4.17E+02 |
| Xe-135 | | 1.69E+03 | ----- | ----- | 1.69E+03 | ----- | ----- | ----- | ----- | 1.69E+03 |
| Xe-133 | | 1.13E+03 | ----- | ----- | 1.13E+03 | ----- | ----- | ----- | ----- | 1.13E+03 |
| Xe-143 | | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Kr-94 | | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Kr-93 | | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Xe-141 | | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Kr-92 | | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Kr-91 | | <1 | ----- | ----- | <1 | ----- | ----- | ----- | ----- | <1 |
| Xe-140 | | 3.07E+00 | ----- | ----- | 3.07E+00 | ----- | ----- | ----- | ----- | 3.07E+00 |
| Kr-90 | | 3.55E+01 | ----- | ----- | 3.55E+01 | ----- | ----- | ----- | ----- | 3.55E+01 |
| Xe-139 | | 5.28E+01 | ----- | ----- | 5.28E+01 | ----- | ----- | ----- | ----- | 5.28E+01 |
| Kr-89 | | 7.93E+01 | ----- | ----- | 7.93E+01 | ----- | ----- | ----- | ----- | 7.93E+01 |
| Xe-137 | | 1.39E+02 | ----- | ----- | 1.39E+02 | ----- | ----- | ----- | ----- | 1.39E+02 |
| Xe-135m | | 3.05E+02 | ----- | ----- | 3.05E+02 | ----- | ----- | ----- | ----- | 3.05E+02 |
| Kr-83m | | 2.09E+02 | ----- | ----- | 2.09E+02 | ----- | ----- | ----- | ----- | 2.09E+02 |
| Xe-133m | | 3.78E+01 | ----- | ----- | 3.78E+01 | ----- | ----- | ----- | ----- | 3.78E+01 |
| Xe-131m | | 5.08E+00 | ----- | ----- | 5.08E+00 | ----- | ----- | ----- | ----- | 5.08E+00 |
| Kr-85 | | 3.31E+01 | ----- | ----- | 3.31E+01 | ----- | ----- | ----- | ----- | 3.31E+01 |
| K-13 | | 6.67E+00 | ----- | ----- | 6.67E+00 | ----- | ----- | ----- | ----- | 6.67E+00 |

1976

Consumers Power Company
Big Rock Point Plant, Docket No 50-155
Radioactive Liquid Releases

| | UNITS | JANUARY | FEBRUARY | MARCH | FIRST QUARTER | APRIL | MAY | JUNE | SECOND QUARTER | SIX-MONTH TOTAL |
|--|--------|----------|----------|----------|------------------|----------|----------|------------|-------------------|--------------------|
| Total Radioactivity Released (Except Tritium, Dissolved Gases and Alpha) | Curies | 2.54E-02 | 1.13E-01 | 5.65E-02 | 1.95E-01 | 1.56E-01 | 5.64E-02 | 3.06E-01 | 5.18E-01 | 7.12E-01 |
| Volume of Waste Discharged | Liters | 1.42E+04 | 8.13E+04 | 7.23E+04 | 1.68E+05 | 5.94E+04 | 7.22E+04 | 5.94E+04 | 1.91E+05 | 3.59E+05 |
| Average Concentration of Waste Prior to Discharge | µCi/ml | 1.79E-03 | 1.39E-03 | 7.82E-04 | 1.16E-03 | 2.63E-03 | 7.81E-04 | 5.14E-03 | 2.71E-03 | 1.98E-03 |
| Volume of Circulating Discharge Water | Liters | 8.43E+09 | 3.83E+09 | 2.56E+09 | 1.48E+10 | 8.78E+08 | 1.90E+09 | 7.76E+09 | 1.05E+10 | 2.54E+10 |
| Average Concentration Released (Except Tritium, Dissolved Gases and Alpha) | µCi/ml | 3.01E-09 | 2.95E-08 | 2.21E-08 | 1.32E-08 | 1.78E-07 | 2.97E-08 | 3.94E-08 | 4.93E-08 | 2.80E-08 |
| Maximum Concentration (Except Tritium, Dissolved Gases and Alpha) | µCi/ml | 3.41E-07 | 7.79E-07 | 1.07E-06 | 1.07E-06 | 1.63E-06 | 8.32E-07 | 6.20E-06 | 6.20E-06 | 6.20E-06 |
| Percent of Applicable Limits | % | 4.69E-02 | 6.13E-01 | 3.43E-01 | 2.45E-01 | 1.21E+00 | 2.09E-01 | 2.39E+00 * | 2.15E+00 * | 2.08E+00 * |
| Tritium Released | Curies | 1.04E-03 | 5.20E-02 | 1.45E-02 | 6.75E-02 | 1.84E-01 | 4.84E-01 | 8.79E-01 | 1.55E+00 | 1.61E+00 |
| Average Tritium Concentration Released | µCi/ml | 1.23E-10 | 1.36E-08 | 5.65E-09 | 4.56E-09 | 2.10E-07 | 2.55E-07 | 1.13E-07 | 1.48E-07 | 6.34E-08 |
| Total Gross Alpha Released | Curies | 7.68E-05 | 7.84E-06 | 8.05E-06 | 9.27E-05 | 6.74E-06 | 4.34E-06 | 1.01E-05 | 2.12E-05 | 1.14E-04 |
| Average Alpha Concentration | µCi/ml | 9.11E-12 | 2.05E-12 | 3.14E-12 | 6.26E-12 | 7.68E-12 | 2.28E-12 | 1.30E-12 | 2.02E-12 | 4.49E-12 |
| Isotopes | Curies | | | | | | | | | |
| Cs-134----- | | 2.01E-03 | 1.34E-02 | 4.19E-03 | 1.96E-02 | 2.84E-02 | 9.26E-03 | 3.36E-02 | 7.13E-02 | 9.09E-02 |
| Cs-137----- | | 8.31E-03 | 2.51E-02 | 7.70E-03 | 4.11E-02 | 8.36E-02 | 3.04E-02 | 1.90E-01 | 3.04E-01 | 3.45E-01 |
| Mn-54----- | | 7.91E-04 | 1.71E-03 | 4.36E-03 | 6.86E-03 | 4.07E-03 | 2.32E-03 | 3.79E-03 | 1.02E-02 | 1.70E-02 |
| Zn-65----- | | 4.63E-04 | 2.85E-04 | 1.03E-03 | 1.78E-03 | 1.47E-03 | 7.06E-04 | 1.68E-03 | 3.86E-03 | 5.63E-03 |
| Co-60----- | | 4.54E-03 | 1.28E-02 | 1.80E-02 | 3.53E-02 | 3.12E-02 | 1.10E-02 | 2.48E-02 | 6.70E-02 | 1.02E-01 |
| Na-24----- | | 1.52E-05 | ----- | ----- | 1.52E-05 | ----- | ----- | ----- | ----- | 1.52E-05 |
| Sr-89----- | | 1.70E-06 | 4.88E-05 | 2.82E-05 | 7.87E-05 | 2.38E-06 | 2.74E-05 | NA | 2.98E-05 * | 1.08E-04 * |
| Sr-90----- | | 2.27E-05 | 1.55E-04 | 1.16E-04 | 2.94E-04 | 2.91E-05 | 4.77E-05 | NA | 7.68E-05 * | 3.71E-04 * |
| Co-58----- | | ----- | ----- | 2.11E-04 | 2.11E-04 | 5.76E-04 | 3.02E-05 | 2.43E-04 | 8.49E-04 | 1.06E-03 |
| Fe-59----- | | ----- | ----- | 2.96E-04 | 2.96E-04 | 6.00E-04 | 5.13E-05 | 1.88E-04 | 8.39E-04 | 1.14E-03 |
| Net Unidentified Beta | | 9.23E-03 | 5.93E-02 | 2.06E-02 | 8.91E-02 | 6.16E-03 | 2.57E-03 | 5.13E-02 * | 6.00E-02 * | 1.49E-01 * |
| Percent of Total Identified | % | 63.6 | 47.4 | 63.6 | 54.2 | > 95 | > 95 | 83.2 * | 88.4 * | 79.1 * |

NOTES:

* Does not include June Strontium results - will be revised in next Semi-Annual.