

Consumers Power Company  
Palisades Plant  
Docket 50-255

RADIOACTIVE EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
January - June 1983

August 1983

9 Pages

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PALISADES NUCLEAR PLANT SEMIANNNUAL EFFLUENT REPORT  
JANUARY-JUNE 1983

This report provides information relating to radioactive effluent releases and solid radioactive waste disposal operations of the Palisades Plant during the period of January through June 1983 in the format contained in Plant Technical Specification 6.9.3.1.A.

1. Supplemental Information

a. Batch Releases

Information relating to batch releases of liquid and gaseous effluents is provided in Table 1.

b. Abnormal Releases

None.

2. Gaseous Effluents

Table 2a presents a summary of all gaseous radioactive effluents released during the period. Release totals for each radionuclide determined to be present in gaseous effluents are contained in Table 2b. The unidentified portion was  $4.7E-07\%$  of the total release.

3. Liquid Effluents

Table 3a presents a summary of all liquid radioactive effluents released during the period. Release totals for each radionuclide determined to be present in liquid effluents are contained in Table 3b. The unidentified portion was  $2.12E-04\%$  of the total release. Laundry will be reported on an annual basis on the July-December report.

4. Solid Waste

Quantities of solid waste shipped offsite and the disposition of these shipments are presented in Table 4.

5. Radiological Impact on Man

Potential doses to individuals and populations were calculated using GASPAP and LADTAP computer codes. The semiannual values for curies released were input as total annual releases for each nuclide.

- a. Doses to individuals in unrestricted areas received from water related exposure pathways are  $9.54E-04$  mrem maximum total body dose (adult) and  $1.43E-03$  mrem maximum organ dose (teenage liver dose).

TABLE 1  
PALISADES PLANT  
BATCH RELEASES

January 1, 1983 to June 30, 1983

A. GASEOUS	Units	Qtr 1st	Qtr 2nd
Number of Releases		2	6
Total Release Time	Min	672	1185
Maximum Release Time	Min	522	240
Average Release Time	Min	336	198
Minimum Release Time	Min	150	140

B. LIQUID			
Number of Releases		10	10
Total Release Time	Min	8988	5360
Maximum Release Time	Min	1670	760
Average Release Time	Min	898.8	536
Minimum Release Time	Min	200	432

- b. The maximum offsite air doses are  $1.01\text{E-}01$  mrad for beta and  $3.72\text{E-}02$  mrad for gamma.
- c. The most restrictive organ dose is the thyroid dose. The average thyroid dose to individuals within a distance of 50 miles of the site from radioactive iodine and radioactive material in particulate form from major pathways of exposure is  $5.75\text{E-}04$  mrem.
- d. Total body doses to the population and average doses to individuals in the population from receiving water related pathways to a distance of 50 miles from the site are  $5.01\text{E-}03$  manrem and  $4.77\text{E-}06$  mrem respectively.
- e. Total body doses to the population and average doses to individuals in the population from gaseous effluents to a distance of 50 miles from the site are  $4.79\text{E-}02$  manrem and  $4.56\text{E-}05$  mrem respectively.

TABLE 2a

## PALISADES PLANT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

January 1, 1983 to June 30, 1983

A. FISSION & ACTIVATION GASES	UNITS	QTR 1st	QTR 2nd	Est total Error %
1. Total release	Ci	5.91E+02	1.59E+03	5.71
2. Average release rate for period	µCi/sec	7.60E+01	2.02E+02	
3. Percent of Technical Specification Limit	%	5.10E-02	1.35E-01	
B. IODINES				
1. Total Iodine-131	Ci	4.96E-03	9.36E-03	4.02
2. Average release rate for period (I-131)	µCi/sec	6.38E-04	1.19E-03	
3. Percent of Technical Specification Limit (I-131)	%	4.46E-02	8.33E-02	
C. PARTICULATES				
1. Particulates with half-life >8 days	Ci	3.52E-05	4.87E-05	22.8
2. Average release rate for period	µCi/sec	4.53E-06	6.20E-06	
3. Percent of Technical Specification Limit	%	5.92E-05	1.08E-04	
4. Gross alpha radioactivity	Ci	2.64E-06	8.49E-07	
D. TRITIUM				
1. Total release	Ci	1.10E+00	1.05E+00	
2. Average release rate for period	µCi/sec	1.42E-01	1.34E-01	
3. Percent of Technical Specification Limit	%	1.42E-04	1.34E-04	
E. PERCENT OF GASEOUS EFFLUENTS OF APPENDIX I VALUES	%	3.69E-01	7.35E-01	

TABLE 2b

## PALISADES PLANT

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT  
GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

January 1, 1983 to June 30, 1983

1. FISSION GASES	Units	QTR 1st	QTR 2nd
Krypton-85	Ci	1.70E-01	7.91E-01
Krypton-85m	Ci	5.30E-02	3.60E-02
Krypton-87	Ci	5.10E-02	1.10E-02
Krypton-88	Ci	8.20E-02	4.90E-02
Xenon-131m	Ci	2.11E-01	1.57E-01
Xenon-133	Ci	5.90E+02	1.59E+03
Xenon-133m	Ci	3.40E-02	2.10E-02
Xenon-135	Ci	3.50E-01	2.29E-01
Xenon-135m	Ci	2.33E-01	1.75E-01
Argon-41	Ci	1.30E-02	1.00E-02
Total for period	Ci	5.91E+02	1.59E+03

2. IODINES			
Iodine-131	Ci	4.96E-03	9.36E-03
Iodine-132	Ci	4.21E-04	6.03E-04
Iodine-133	Ci	3.52E-03	6.57E-03
Iodine-135	Ci	1.08E-03	3.33E-03
Total for period	Ci	9.98E-03	1.99E-02

TABLE 2b. (continued)

## PALISADES PLANT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

January 1, 1983 to June 30, 1983

3. *PARTICULATES	Units	Qtr 1st	Qtr 2nd
Chromium-51	Ci	-0-	-0-
Manganese-54	Ci	2.43E-06	6.61E-07
Cobalt-58	Ci	9.19E-08	1.95E-07
Cobalt-60	Ci	1.11E-05	2.12E-05
Zinc-65	Ci	-0-	-0-
Silver-110m	Ci	-0-	-0-
Cesium-134	Ci	7.46E-07	1.72E-06
Cesium-137	Ci	1.10E-05	2.22E-05
Barium-140	Ci	-0-	-0-
Mercury-203	Ci	-0-	-0-
Beryllium-7	Ci	2.45E-06	-0-
Net unidentified beta	Ci	7.43E-06	2.74E-06

\*Particulates with half live &gt;8 days.

TABLE 3a

## PALISADES PLANT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

January 1, 1983 to June 30, 1983

A. FISSION & ACTIVATION PRODUCTS	Units	Qtr 1st	Qtr 2nd	Est total Error %
1. Total release (not including tritium, gases, alpha)	Ci	8.72E-04	2.11E-04	43.2
2. Average diluted concentration during period	µCi/ml	3.52E-11	8.44E-12	
3. Percent of applicable limit Liquid Waste System 1% of MPC	%	1.84E-01	2.72E-01	
<b>B. TRITIUM</b>				
1. Total Release	Ci	4.80E+01	9.00E+01	4.1
2. Average diluted concentration during period	µCi/ml	1.94E-06	3.60E-06	
3. Percent of applicable limit Liquid Waste System 1% of MPC	%	6.47E+00	1.20E+01	
<b>C. DISSOLVED &amp; ENTRAINED GASES</b>				
1. Total release	Ci	2.49E-03	1.61E-02	13.2
2. Average diluted concentration during period	µCi/ml	1.01E-10	6.44E-10	
3. Percent of applicable limit Liquid Waste System 1% of MPC	%	4.38E-03	2.80E-02	
<b>D. GROSS ALPHA RADIOACTIVITY (total release)</b>				
	Ci	<2.47E-02	<2.50E-02	
<b>E. VOLUME OF WASTE RELEASED (prior to dilution)</b>				
	liters	1.64E+06	1.92E+06	
<b>F. VOLUME OF DILUTION WATER USED DURING PERIOD</b>				
	liters	2.47E+10	2.50E+10	
<b>G. PERCENT OF APPENDIX I ANNUAL LIMIT</b>				
	%	3.10E-02	5.89E-03	



TABLE 3b

PALISADES PLANT  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
LIQUID EFFLUENTS  
January 1, 1983 to June 30, 1983

NUCLIDES RELEASED	Units	Qtr 1st	Qtr 2nd
Cesium-137	Ci	2.84E-04	3.29E-06
Cobalt-58	Ci	-0-	2.51E-06
Manganese-54	Ci	1.82E-05	-0-
Cobalt-60	Ci	3.79E-04	-0-
Cesium-134	Ci	6.43E-05	1.01E-06
Iron-59	Ci	-0-	-0-
Lanthanum-140	Ci	-0-	-0-
Zinc-65	Ci	-0-	-0-
Cobalt-57	Ci	-0-	-0-
Antimony-125	Ci	-0-	-0-
Iodine-133	Ci	-0-	5.52E-07
Iodine-131	Ci	3.58E-05	6.17E-07
Net Unidentified Beta	Ci	9.03E-05	2.03E-04
Total for Period (above)	Ci	8.72E-04	2.11E-04
Xenon-133	Ci	2.49E-03	1.61E-02

TABLE 4

## PALISADES PLANT

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT  
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

January 1, 1983 to June 30, 1983

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (not irradiated fuel)	UNITS	
1. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup> Ci	5.52E+01 1.30E+01
2. Dry compressible waste, contaminated equipment, etc.	m <sup>3</sup> Ci	1.38E+02 2.61E+00
3. Irradiated components, control rods, etc.	m <sup>3</sup> Ci	-0-
4. Other (describe)	m <sup>3</sup> Ci	-0-

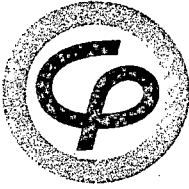
## B. SOLID WASTE SHIPMENT DISPOSITION

<u>Date of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
1/5/83, 1/12/83, 2/4/83 3/2/83, 3/18/83, 4/28/83, 5/5/83 and 6/15/83	Truck	Richland, Washington
2/22/83	Truck	Barnwell, South Carolina

## C. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

<u>Date of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None.		

DmB



Consumers  
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August 30, 1983

PRINCIPAL STAFF		
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*Aug 31*

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DOCKET 50-255 - LICENSE DPR-20 -  
PALISADES PLANT - SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE AND WASTE DISPOSAL  
REPORT - JANUARY through JUNE 1983

Attached is the Semiannual Radioactive Effluent Release and Waste Disposal  
Report for the Palisades Plant covering the period from January through  
June 1983. This is submitted in accordance with 10 CFR 50.36a(2) and  
Technical Specification Section 6.9.3.

Brian D Johnson  
Staff Licensing Engineer

CC Director, Office of Nuclear Reactor Regulation  
Director, Office of Inspection and Enforcement  
NRC Resident Inspector - Palisades

Attachment

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