

SAN ONOFRE NUCLEAR GENERATING STATION

SEMI-ANNUAL OPERATING REPORT NO. 26

FOR THE PERIOD INCLUDING

JANUARY 1, 1980 to JUNE 30, 1980

SUBMITTED IN ACCORDANCE WITH:

OPERATING LICENSE NO. DPR-13

SUBMITTED BY:

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS & ELECTRIC COMPANY

8009030 538

SEMI-ANNUAL OPERATING REPORT NO. 26

RADIOACTIVE EFFLUENT RELEASES

Attached are tables which summarize radioactive releases from the plant. An independent laboratory performs some of the analyses on monthly composite samples. As a consequence, the April, May, and June liquid release data does not contain strontium 89 and 90, potassium 32, and iron 55. Also, the April, May and June airborne release data does not contain strontium 89 and 90 and gross alpha. These data will be included in a future report as they become available.

1. Gaseous Effluents

a. Gross Radioactivity Releases

- 1) Total gross radioactivity releases were $1.05 \text{ E}+3$ curies. In addition, $2.43 \text{ E}+1$ curies of tritium were released.
- 2) The maximum gross radioactivity release rate for a one hour period was $2.22 \text{ E}+3 \text{ } \mu\text{Ci/sec.}$
- 3) Total gross radioactivity data by nuclide released are shown in Table II.
- 4) The percent of the technical specification limit for noble gases is $1.46 \text{ E}-1$ percent.

b. Iodine Releases

- 1) Total Iodine radioactivity released during this reporting period was $2.53 \text{ E}-4$ curies of Iodine 131 and Iodine 132.
- 2) This represented $7.88 \text{ E}-5$ percent of the technical specification limit.

c. Particulate Releases

- 1) Particulate radioactivity released during this reporting period was $3.00 \text{ E}-1$ curies.
- 2) Gross alpha releases excluding background radioactivity were less than the LLD.
- 3) Total gross radioactivity of nuclides with half lives greater than eight (8) days was $3.00 \text{ E}-1$ curies.

- 4) The percent of the technical specification limit for particulate radioactivity with half lives greater than eight days was 1.91 E-2 percent.

2. Liquid Effluents

- a. Total gross radioactivity released, excluding tritium and noble gases, was 9.29 E+0 curies. The average concentration released to unrestricted areas was $4.97 \text{ E-8 } \mu\text{Ci/ml}$.
- b. The maximum concentration of gross radioactivity released to the unrestricted area was $9.52 \text{ E-7 } \mu\text{Ci/ml}$.
- c. The total tritium released to the unrestricted area was 1.02 E+3 curies. The average tritium concentration released to the unrestricted area was $5.46 \text{ E-6 } \mu\text{Ci/ml}$. Alpha radioactivity released to the unrestricted area was 1.90 E-3 curies. The average alpha concentration was $1.02 \text{ E-17 } \mu\text{Ci/ml}$.
- d. The total dissolved noble gas radioactivity released to the unrestricted area was 2.90 E+0 curies. This quantity yielded an average concentration of $1.55 \text{ E-8 } \mu\text{Ci/ml}$ released to the unrestricted area.
- e. The volume of liquid waste released was 1.22 E+7 liters.
- f. The total volume of dilution water was 1.87 E+11 liters.
- g. Total gross radioactivity by nuclide is shown in Table I.
- h. The percent of the technical specification limit for liquid releases is 5.15 E-1 .

SOLID WASTE

1. Total amount of solid waste shipped was 1.40 E+2 cubic feet.
2. The total estimated radioactivity involved in the above shipments was 5.10 E+1 curies.
3. A resin shipment was made on March 20 to Beatty, Nevada by Southwest Nuclear Company. Also, a resin shipment was made on June 29 to Richland, Washington by Southwest Nuclear Company.

ADDITIONS

Table I, Liquid Releases, of Semi-Annual Operating Report No. 25 should be updated as follows:

1. Volume of Dilution Water for February is $5.87 \text{ E} + 6$ liters.
2. Volume of Dilution Water for April is $4.53 \text{ E} + 6$ liters.
3. Average concentration of tritium released for July is $1.22 \text{ E}-6$ $\mu\text{Ci/ml}$.
4. Curies of Sr-89 released in November are $2.33 \text{ E}-4$.
5. Curies of Sr-90 released in November are $5.99 \text{ E}-5$.
6. Curies of Sr-89 released in December are $1.38 \text{ E}-4$.
7. Curies of Sr-90 released in December are $6.73 \text{ E}-4$.
8. Annual Total for Volume of Dilution Water is $5.75 \text{ E}+11$ liters.
9. Annual Total for Sr-89 is $1.67 \text{ E}-2$.
10. Annual Total for Sr-90 is $7.59 \text{ E}-4$.
11. Annual Total for Percent of Tech. Spec. Limit for Total Activity Released is $3.00 \text{ E}-1$.

Table II, Airborne Released, of Semi-Annual Operating Report No. 25 should be updated as follows:

1. The curies of Sr-89 and Sr-90 released in November and December are $< \text{LLD}$.
2. The Annual Total for Total Noble Gases released is $6.08 \text{ E}+2$ curies.

REPORT OF RADIOACTIVE EFFLUENTS

Facility: San Onofre Nuclear Generating Station

Docket: 50 - 206

Year: 1980

I. LIQUID RELEASES

	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
1. Gross Radioactivity (β,γ)														
a) Total Release	Curies	1.57E-1	3.53E+0	2.59 E-1	2.79E+0	1.80E+0	7.50E-1							9.29E+0
b) Avg. Concentration Released	μCi/ml	3.72E-9	1.07E-7	5.37E-9	1.26E-7	1.96E-7	2.59E-8							4.97E-8
c) Max. Concentration Released	μCi/ml	2.24E-8	9.52E-7	4.41E-8	5.88E-7	4.51E-7	5.18E-7							9.52E-7
2. Tritium														
a) Total Release	Curies	3.86E+2	1.31E+2	2.21E+2	2.44E+2	3.65E+1	3.14E+0							1.02E+3
b) Avg. Concentration Released	μCi/ml	9.15E-6	3.79E-6	4.39E-6	1.11E-5	3.97E-6	1.08E-7							5.46E-6
3. Dissolved Noble Gases														
a) Total Release	Curies	BDL	1.59E-1	1.10E-2	2.73E+0	BDL	BDL							2.90E+0
b) Avg. Concentration Released	μCi/ml	BDL	4.60E-9	2.18E-10	1.24E-7	BDL	BDL							1.55E-8
4. Gross Alpha Radioactivity														
a) Total Release	Curies	BDL	BDL	BDL	BDL	1.90E-3	BDL							1.90E-3
b) Avg. Concentration Released	μCi/ml	BDL	BDL	BDL	BDL	2.07E-7	BDL							1.02E-1
5. Volume of liquid waste to discharge canal	Liters	4.88E+5	7.87E+5	6.58E+6	3.60E+6	6.52E+5	1.28E+5							1.22E+7
6. Volume of Dilution Water	Liters	4.22E+10	3.46E+10	5.03E+10	2.19E+10	9.18E+9	2.90E+10							1.87E+11
7. Isotopes Released	Curies													
C-14	BDL	BDL	BDL	BDL	BDL	BDL	BDL							BDL
Cr-51	BDL	BDL	BDL		5.20E-2	6.01E-2	BDL							1.12E-1
Mn-54	BDL	BDL	BDL		1.80E-3	4.55E-3	BDL							6.35E-3
Fe-59	BDL	BDL	BDL		2.10E-2	1.90E-2	BDL							4.00E-2
Co-58	2.83E-2	3.03E+0	1.95E-1		2.18E-1	1.23E-1	7.76E-2							3.67E+0
Co-60	1.50E-2	4.71E-1	5.92E-2		7.44E-2	8.27E-2	2.29E-2							7.25E-1
Zn-65	BDL	BDL	BDL		BDL	BDL								BDL
Sr-89	3.90E-5	1.34E-4	4.61E-4		IA	IA	IA							6.34E-4
Sr-90	1.85E-5	4.09E-5	BDL		IA	IA	IA							5.94E-5
Ag-110m	BDL	BDL	BDL		BDL	BDL	BDL							BDL
Sb-124	BDL	BDL	BDL		BDL	4.28E-1	2.09E-1							6.37E-1
I-131	5.51E-3	1.32E-4	BDL		9.38E-2	1.62E-2	BDL							1.16E-1
I-133	BDL	BDL	BDL		BDL	BDL	BDL							BDL
Xe-131m	BDL	BDL	BDL		BDL	BDL	BDL							BDL
Xe-133	BDL	1.59E-1	1.10E-2		2.70E+0	BDL	BDL							2.87E+0
Xe-133m	BDL	BDL	BDL		2.87E-2	BDL	BDL							2.87E-2
Xe-135	BDL	BDL	BDL		BDL	BDL	BDL							BDL
Cs-134	4.58E-2	1.14E-2	BDL		8.83E-2	4.35E-1	1.93E-1							7.63E-1
Cs-137	6.20E-2	1.95E-2	4.96E-3		1.06E-1	5.34E-1	2.43E-1							9.69E-1
Ba-140	BDL	BDL	BDL		BDL	BDL	BDL							BDL
La-140	BDL	BDL	BDL		BDL	BDL	BDL							BDL
Co-57	BDL	2.91E-3	BDL		BDL	BDL	BDL							2.91E-3
Ru-103	BDL	2.78E-3	BDL		1.30E-2	4.30E-2	3.23E-3							6.20E-2
Nb-95	BDL	BDL	BDL		7.54E-3	2.58E-2	2.50E-3							3.58E-2
Zr-95	BDL	BDL	BDL		6.52E-3	1.24E-2	BDL							1.89E-2
8. Percent of Tech. Spec. Limit For Total Activity Released	%	3.70E-1	2.73E-1	1.55E-1	1.90E+0	1.84E+0	1.62E-1							5.15E-1
Ce-141	BDL	BDL	BDL		1.46E-3	2.73E-3	BDL							4.19E-3
				IA=Independent Analyst										
Np-239	BDL	BDL	BDL		5.18E-2	BDL	BDL							5.18E-2
Tc-99m	BDL	BDL	BDL		2.02E+0	BDL	BDL							2.02E+0
Ce-144	BDL	BDL	BDL		BDL	1.02E-2	BDL							1.02E-2
P-32	2.15E-4	8.26E-4	6.58E-4		IA	IA	IA							1.70E-3
Fe-55	1.51E-2	4.49E-3	2.63E-2		IA	IA	IA							4.59E-2

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