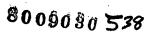
SAN ONOFRE NUCLEAR GENERATING STATION SEMI-ANNUAL OPERATING REPORT NO. 26

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



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
 - Total gross radioactivity releases were 1.05 E+3 curies. In addition, 2.43 E+1 curies of tritium were released.
 - 2) The maximum gross radioactivity release rate for a one hour period was 2.22 E+3 $_{\rm u}$ 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 E-1 percent.
 - b. Iodine Releases
 - Total Iodine radioactivity released during this reporting period was 2.53 E-4 curies of Iodine 131 and Iodine 132.
 - 2) This represented 7.88 E-5 percent of the technical specification limit.
 - c. Particulate Releases
 - Particulate radioactivity released during this reporting period was 3.00 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 E-1 curies.

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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+O curies. The average concentration released to unrestricted areas was 4.97 E-8 μ Ci/ml.
- b. The maximum concentration of gross radioactivity released to the unrestricted area was 9.52 E-7 μ 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 E-6 μ Ci/ml. Alpha radio-activity released to the unrestricted area was 1.90 E-3 curies. The average alpha concentration was 1.02 E-17 μ 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 E-8 μ 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.

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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 E + 6 liters.
- 2. Volume of Dilution Water for April is 4.53 E + 6 liters.
- 3. Average concentration of tritium released for July is 1.22 E-6 μ Ci/ml.
- 4. Curies of Sr-89 released in November are 2.33 E-4.
- 5. Curies of Sr-90 released in November are 5.99 E-5.
- 6. Curies of Sr-89 released in December are 1.38 E-4.
- 7. Curies of Sr-90 released in December are 6.73 E-4.
- 8. Annual Total for Volume of Dilution Water is 5.75 E+11 liters.
- 9. Annual Total for Sr-89 is 1.67 E-2.
- 10. Annual Total for Sr-90 is 7.59 E-4.
- 11. Annual Total for Percent of Tech. Spec. Limit for Total Activity Released is 3.00 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 < LLD.
- 2. The Annual Total for Total Noble Gases released is 6.08 E+2 curies.

REPORT OF RADIOACTIVE EFFLUENTS

* Facility: San Onofre Nuclear Generating Station

444211 - Jan Jar

Docket: 50 - 206

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Year: 19⁸⁰

I. LIQUID RELEASES

											·			mod i
	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	<u> 0CT.</u>	NOV.	DEC.	TOTA
. Gross Radioactivity (β, γ)	Ounian	1	2 52510		2 70510	1 00 10	7 505 1							9.29E
a) Total Release b) Avg. Concentration Released	Curies	1.57E-1	<u>3.53E+0</u>	2.59 E-1	12.79E+U	1.80E+0 1.96E-7	7.50E-1 2.59E-8							4.97E
c) Max. Concentration Released	$\frac{\mu c_1/m_1}{\mu c_1/m_1}$	3.72E-9		5.37E-9 4.41E-8	11.20E-/	4.51E-7								9.52E
c) Max. Concentration Released		<u>2.24E-8</u>	9.526-7	<u>4.4]<u>5</u>-0_</u>	5.00L-7	14.JIL-7	J.10L-/							
. Tritium						1 · · ·								
a) Total Release	Curies	3.86E+2	1.31E+2	2.21E+2	2.44E+2	3.65E+1	3,14E+0							1.02E
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
						<u> </u>	<u> </u>		ļ	<u></u>		<u> </u>		<u> </u>
Dissolved Noble Gases a) Total Release	Curies	0.01	1 505 1	1 105 2	2.73E+0	PDI	BDL							2.90E
b) Avg. Concentration Released				2.18E-10		BDL	BDL							1.55
D) Ny. Concentration Neveased	perfit		4.00L-3	2.101-10	1.246-1-									1
Gross Alpha Radioactivity		1			i	1								
a) Total Release	Curies	BDL	BDL	BDL	BDL	1.90E-3	BDL							1.90F
b) Avg. Concentration Released	µCi/ml	BDL	BDL	BDL	BDL	2.07E-7_	BDL							1.02F
					ļ	 		·				{{		
Volume of liquid waste to		4 00515		C FOFIC	2 60546	C COLLE	1 20515					I.		1.22
discharge canal Volume of Dilution Water		4.88E+5 4.22E+10							<u> </u>	· · · · · · · · · · · · · · · · · · ·		<u> </u>		1.87
Isotopes Released	Curies		3.40 <u>5+10</u>	<u>15.035+10</u>	2.196+10	<u>-</u>	2.30210					[]		1.00
C-14		BDL	BDL	BDL	BDL	BDL	BDL							BDL
Cr-51	·	BDL.	BDL	BDL		6.01E-2								1.12
Mn-54		BDL	BDL	BDL	1.80E-3	4.55E-3	BDL							6.35
Fe-59		BDL	BDL	BDL	2.10E-2	1.90E-2					ļ			4.00
Co-58		2.83E-2	3.03E+0		2.18E-1	1.23E-1			<u> </u>	·	ļ	ļ		3.67
Co-60		1.50E-2		5.92E-2		8.27E-2				ļ				7.25
Zn-65 Sr-89		BDL	BDL	BDL	I BDL	BDL	IBDL		 		<u> </u>	<u> </u>		BDL 6,34
Sr-90		3.90E-5	4.09E-5				IA IA				<u> </u>			5.94
Ag-110m		BDL	BDL	BDL	BDL	BDL	BDL			· · · · · · · · · · · · · · · · · · ·				BDL
Sb-124		TBDL	BDL	BDL	BDL		2.09E-1							6.37
I-131		5.51E-3	1.32E-4		9,38E-2	1.62E-2								1.16
I-133		BDL	BDL	BDL	BDL	BDL	BDL					L		BDL
Xe-131m		BDL ,	BDL	BDL	BDL	BDL	BDL		ļ					BDL
Xe-133		BDL			2.70E+0	BDL	BDL					<u> </u>		2.87
Xe-133m Xe-135		BDL	BDL	BDL	2.87E-2 BDL	BDL BDL	BDL BDL					{		BDL
Ke-135 Cs-134		BDL 4.58E-2	BDL 1.14E-2		8.83E-2	14.35E-1	1.93E-1							7.63
Cs-137 /		14.00E-2			1.06E-1		2.43E-1				1			9.69
Ba-140		BDL	BDL	BDL	BDL	IBDL	BDL							BDL
La-140		BDL	BDL	BDL	BDL	BDL	BDL							BDL
Co-57		BDL	2.91E-3		BDL	BDL	BDL			[ļ		2.91
Ru-103	·	BDL	2.78E-3				3.23E-3					l		6.20
Nb-95 Zr-95		BDL	BDL	BDL	7.54E-3	2.58E-2					<u> </u>			3.58
+		BDL	BDL	BDL	6.52E-3	1.24E-2			<u> </u>		<u> </u>			1.89
Percent of Tech. Spec. Limit For Total Activity Released		3.70E-1	·2 72E.1	1 555_1	1.90E+0	1 8/15+0	1 625-1	•	l					5.15
Ce-141		BDL	BDL	BDL	1.46F-3	2.73E-3	BDL		1	L		<u></u>		4.19
CE-141			IA=	Independe	ent Analys	st	JUL :							
Np-239	• • • •	BDL	BDL	BDL .	5.18E-2		BDL	-						5.188
Tc-99m		BDL	BDL	BDL	2.02E+0		BDL						•	2.02
Ce-144		BDL	BDL	BDL	BDL	1.02E-2	BDL 🖞					•		1.021
P-32		2.15E-4	8.26E-4	6.58E-4	IA	IA	IA			• .				1.70
Fe-55		1.51E-2		2.63E-2		IA	IA				سيعد أبد فالاصفار			4.59E

II. AIRBORNE RELEASES

		UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
	Total Noble Gases	Curies	2.38E+2	9.39E+1	5.94E+1	6.60E+2	BDL	BDL		1					11.05E+3
2.	Total Halogens		BDL	BDL	BDL		1.52E-5			<u>├────</u>		i ł			2.53E-4
з.	Total Parciculate Gross				1		1.022 0								2.351-4
	Radioactivity (β,γ)	Curies	BDL	BDL	BDL	3.00E-1	BDL	2.03E-5				-		. 1	3.00E-1
	Total Tritium		4.70E+0			16 86F+0	5.61E+0	4.60E+0							2.43E+1
5.	Total Particulate Gross		1 / VE - V			10.000.0	10.012.0	4.002.0				┟			2.43571
	Alpha Radioactivity	Curies	BDL.	BDL	BDL	IA	IA	IA							BDL
		• ••••••••••••••• ••				+ * • • • • • • • • • • • • • • • • • • •	1 10	- 10							
6.	Max. Noble Gas Release Rate	µCi/sec	2.22E+3	1.57E+3	1.29E+3	1.73E+3	BDL	BDL	····					······	2.22E+3
7.	Percent of Applicable Limit For:						<u> </u>								
	a. Noble Gases	*	2.09E-1 ·	9.22E-2	5.52E-2	5.31E-1	BDL	BDL		{	······································				1.461E-T
	b. Halogens		BDL	BDL	BDL	4.20E-4	3.01E-5								7.882E-5
	c. Particulates		BDL	BDL	BDL	1.16E-1	BDL	1.01E-5							1.905E-2
8.	Isotope Released:	Curies													
	Particulates					<u> </u>									
	Cs-137		BDL ·	BDL	BDL	2.78E-1	BDL	BDL							2.78E-T
	Ba-La-140		BDL	BDL	BDL	BDL	BDL	BDL						 	BDL
	Sr-90		BDL	BDL	BDL	BDL	BDL	BDL							BDL
	Cs-134		BDL	BDL	BDL	BDL	BDL	BDL							BDL
	Sr-89		BOL	BDL	BDL	IA	IA	IA		· · · · · · · · · · · · · · · · · · ·					
*	Ru-103		BDL	BDL	BDL	2.20E-2	BDL	BDL							BDL
-	Halogens			DUL			DUL								2.20E-2
	I-131		BDL	BDL	BDL	2 055 4	1.52E-5	1 205 5							A 100 T
	I-133		BDL	BDL	BDL	BDL	BDL	BDL							2.33E-4
	I-135		BDL	BDL	BDL	BDL	BDL	BDL							BDL
•	I-132			BDL	BDL		BDL	BDL							BDL
	Gases		<u> </u>		BUL	1.951-5									1.95E-5
	Ar-41		BDI	1.76F-1	1.49F-1	1.25E-1	BDL	BDL							
	Kr-85		BDL		BDL	BDL	BDL	BDL							4.50E-1
	Kr-85m					1.39E+0	BDL	BDL							1.46E+0
	Kr-87		7.16E-3	1.27E-1	2,35E-1	1.75E-1	BDL	BDL							3.3TE+0
	Kr-88			6.62E-1	4.10F-1	7.02E-1	BDL	BDL			·				5.44E-T
	Xe-131m		BDL	1.03E+0	3.81E-1	2.50E-1	BDL	BDL							2.63E+0
	Xe-133		1.99E+2		5.31E+1	5.95E+2	BDL	BDL							1.66E+0
	Xe-133m		4.74E+0			9.75E+0									9.24E+2
	Xe-135						BDL	BDL							1.61E+1
	Xe-135m			<u>1.17E+1</u> BDL		4.41E+1	BDL	BDL							<u>9.17E+1</u>
•	Xe-138					7.86E-1	BDL	BDL							1.30E+0
	•		BUL	BUL	2.58E-1	4.72E-1	BDL	BDL							7.30E-T
											<u>}</u>				
*	Co-58	,	BDL	BDL	BDL	BDL	BDL	6.49E-6							6.49E-6
	Co-60	•	BDL	BDL	BDL	BDL	BDI.	1 38E-5				·			1.38E-5

III. SOLID WASTE ANNUAL SEPT. TOTAL NOY. DEC. UNITS JAN. FEB. HAR. APR. 1 AY JUNE JULY AUG. 0CT. 1. Total Solid Waste pkged. Ft³ 1.40E+2 7.00E+1 0 0 0 0 0 0 0 0 0 0 +7.00E+1 5.10E+1 2. Total est. Radioactivity Curies 0 0 0 0 0 0 0 0 0 3,60E+1 0 1.50E+1 3. Dates of Shipment and Disposition if shipped Offsite. JANUARY . NONE FEBRUARY NONE MARCH 3/20 Southwest Nuclear ۰, to Beatty, Nevada APRIL . • ---NONE MAY NONE JUNE 6/29 Southwest Nuclear to Richland, Washington JULY AUGUST SEPTEMBER OCTOBER ۰. ۰ NOVEMBER DECEMBER

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