Enclosure 1

RESPONSE TO NRC REQUEST FOR RADIOLOGICAL ENVIRONMENTAL INFORMATION

Following are responses to an NRC request for additional radiological environmental information. The NRC request is first stated and SCE's response follows.

NRC REQUEST

The following information should be provided. If the information requested is already presented in the [Final Environmental Statement] FES or in the February 5, 1986 letter from M. O. Medford to Mr. G. E. Lear, then those documents can be referenced and the location of the information cited.

General Comments

1. Provide a description of the changes to the liquid, gaseous, and solid radwaste systems from the systems described in the 1973 FES. A comparison should be presented of the system as it was intended to operate in the analysis by the staff in 1973 FES, the 1976 Appendix I submittal, and the present mode of operation. The comparison may be in the form of schematics or verbiage or both.

2. Provide a listing, by year, of the number of occurrences in which San Onofre Unit 1 has exceeded the instantaneous release rates contained in their technical specifications for liquid and gaseous effluents. The occurrences should be further subdivided as liquid, airborne noble gas, or airborne radioiodine and particulates as appropriate. Some of the sources for this information would be LERS, 10 CFR 20.405 reports, 50.72 reports, and reports required by the technical specifications.

SCE RESPONSE TO "GENERAL COMMENTS," PART 1

Information updating the 1973 FES was provided in our letter from M. O. Medford to G. E. Lear dated February 5, 1986. The changes to the Unit 1 radwaste systems described in that letter are restated in the following table with minor editorial corrections. There have been no significant changes to the liquid, gaseous, or solid radwaste systems since the February 5, 1986 letter was submitted.

RADWASTE SYSTEM CHANGES

1973 FES		Change as Described in February 5, 1986 SCE Letter
Section	Page	
3.5.1	3-20	As discussed in the Semiannual Effluent Reports, treated liquid wastes are handled with both "batch" and "continuous" modes of release.[1,2]
3.5.1	3-21	As illustrated in current SONGS Unit 1 piping and Instrumentation Drawings[3] (P&IDs), several changes have been made to the liquid waste-discharge system described by Figure 3.11 of the 1973 FES. • Gaseous effluents from the flash tank and gas stripper are routed to the waste gas surge tank of the gaseous radwaste system and from there through the waste gas compressors to the waste gas decay tanks. There is no "waste gas storage tank." • The contents of the auxiliary building sump, the reactor sump and the sphere sump are directed to the decontamination drain tank, and not directly through the radwaste process filter into the monitor tanks. • The contents of the decontamination drain tank are directed through the radwaste process filter to the monitor tanks, and not directly into the radiochemistry lab drain tank.
3.5.1	3-21	The letdown flowrate may be set at either 45 or 90 gal/min[4]. The letdown flow is processed through the lithium demineralizer for removal of excess lithium only when and as directed by the Chemistry Group.
3.5.1	3-21	As illustrated on the SONGS Unit 1 P&IDs[3], the shim bleed stream flowpath from the letdown flow stream to the coolant radioactive waste processing system (flash tank) is normally closed.

RADWASTE SYSTEM CHANGES

1973 FES		Change as Described in February 5, 1986 SCE Letter
Section	Page	
3.5.2	3-26	As illustrated on current SONGS Unit 1 P&IDs[3], changes have been made to the radioactive gaseous waste system described by Figure 3.12 of the 1973 FES: • Each unit of the reactor containment air cleanup system also contains a demister and prefilter in addition to the charcoal absorber and high-efficiency filter. • Each of the exhaust paths from the reactor containment and the auxiliary building consists of flow through a building-unique prefilter discharging to a common discharge header. From the header a fan forces the exhaust through a high efficiency filter and to the plant vent stack. • Discharges from the air ejectors and the mechanical vacuum pumps are exhausted directly to the plant vent stack without passing through either a high efficiency filter or a fan. • Radioactive waste gas is no longer processed through the cryogenic waste gas treatment system which has been abandoned in place.
3.5.2	3-29	The alternative treatment of the gaseous waste that utilized the cryogenic absorption system is no longer used. The system was abandoned following unfavorable operating experience.
3.5.2	3-30	As illustrated in the SONGS Unit 1 P&IDs[3], all vent paths to the plant vent stack do not flow through high efficiency filters.
3.5.2	3-30	As illustrated in the SONGS Unit 1 P&IDs[3], each unit of the reactor containment air cleanup systems also contains a demister and prefilter in addition to the charcoal absorber and high-efficiency filter.
3.5.3	3-33	Spent ion exchange resins are placed within high integrity containers (HICs) and dewatered. The HIC is shipped to a licensed burial site. Spent filters are either placed within HIC's or encapsulated in cement. Very low level filters are placed in drums with an approved absorbent.
3.5.3	3-33	Clothing worn in the plant is no longer decontaminated offsite. Unit 1 laundry is processed onsite at a central decontamination facility along with the contaminated laundry from Units 2 and 3.

RADWASTE SYSTEM CHANGES

1973 FES		Change as Described in February 5, 1986 SCE Letter
Section	Page	
3.5.3	3-34	The total volume and radioactivity of the solid waste shipped offsite for disposal are reported to the NRC in the Semiannual Effluent Reports[1,2,5].

REFERENCES

1. Southern California Edison Company, "San Onofre Nuclear Generating Station Units 1, 2 and 3 Semiannual Effluent Report," January - June 1985.

2. Southern California Edison Company, "San Onofre Nuclear Generating Station Unit 1 Semiannual Effluent Reports," January - June 1981 through July - December 1984.

3. Southern California Edison Company, "San Onofre Nuclear Generating Station Unit 1, Piping & Instrumentation Diagrams," Series 5178000.

4. Southern California Edison Company, "San Onofre Nuclear Generating Station Unit 1 Station Manual, System Descriptions," October 1965.

5. Southern California Edison Company, "San Onofre Nuclear Generating Station Unit 1 Semiannual Operating Reports," January - June 1973 through July - December 1980.

SCE RESPONSE TO "GENERAL COMMENTS", PART 2

There have been no occurrences in which San Onofre Unit 1 exceeded the Technical Specification limits for liquid or gaseous effluents.

NRC REQUEST

Solid Radwaste

Provide the volume and curie content of the waste shipped offsite via the following headings:

a) resins, filters, evaporator bottoms;

b) dry activated waste (DAW);

c) irradiated components;

d) others; and

e) waste shipped to compactors such as SEG [Scientific Ecology Group] and the type of waste shipped.

SCE RESPONSE TO "SOLID RADWASTE"

The requested information has been extracted from the San Onofre Unit 1 Semiannual Effluent Reports and tabulated below. Although not requested, Shipments of spent fuel off site, as indicated by our shipping records, have also been included. Waste shipped to compactors is included in the Dry Activated Waste totals when the compactor ships the waste for burial. Therefore, no heading for item e) above has been provided.

SOLID RADWASTE SHIPMENTS

	Resins, Filters, Evaporator Bottoms	Dry Activated Waste	Irradiated Components	Spent Fuel	Other
JUN - DEC. 1967	None	None	None	None	None
JAN - JUN. 1968	None	3.96 m^3, 1.425 Ci (Note 5)	None	None	None
JUL - DEC. 1968	3 Filters, Note 1	6.87 m^3, 0.038 Ci	Incore self powered detectors, 6.0 Ci	None	1 container of contaminated lumber, Note 1
JAN - JUN. 1969	None	6.46 m^3, 0.130 Ci	None	None	None
JUL - DEC. 1969	None	13.5 m^3, 3.923 Ci	None	None	None
JAN - JUN. 1970	2.12 m^3 resin, 2.0 Ci	9.79 m^3, 0.0594 Ci	None	None	None
JUL - DEC. 1970	None	28.7 m^3, 8.41 Ci	None	None	0.623 m^3 of contaminated wood, Note 1
JAN - JUN. 1971	None	14.8 m^3, 0.978 Ci	None	None	None
JUL - DEC. 1971	None	8.03 m^3, 0.210 Ci	None	None	None
JAN - JUN. 1972	5.66 m^3 resin, 72.0 Ci	78.1 m^3, 3.48 Ci, Note 2	None	14 assemblies	None

SOLID RADWASTE SHIPMENTS

	Resins, Filters, Evaporator Bottoms	Dry Activated Waste	Irradiated Components	Spent Fuel	Other
JUL - DEC. 1972	None	52.8 m^3, 4.19 Ci, Note 2	None	41 assemblies	None
JAN - JUN. 1973	None	69.4 m^3, 172 Ci,	None	None	None
JUL - DEC. 1973	None	43.3 m^3, 209 Ci	None	9 assemblies	None
JAN - JUN. 1974	None	57.2 m^3, 230 Ci	None	3 assemblies	None
JUL - DEC. 1974	None	10.9 m^3, 0.38 Ci	None	7 assemblies	None
JAN - JUN. 1975	None	79.6 m^3, 26 Ci	None	11 assemblies	None
JUL - DEC. 1975	None	None	None	10 assemblies	None
JAN - JUN. 1976	None	50.1 m^3, 18.6 Ci	None	53 assemblies	None
JUL - DEC. 1976	None	94.3 m^3, 679 Ci	None	2 assemblies	None
JAN - JUN. 1977	None	249 m^3, 18.1 Ci	None	27 assemblies	None
JUL - DEC. 1977	None	120 m^3, 42.1 Ci	None	58 assemblies	None
JAN - JUN. 1978	None	51.8 m^3, 1.61 Ci	None	19 assemblies	None
JUL - DEC. 1978	None	131 m^3, 7.17 Ci	None	None	None
JAN - JUN. 1979	None	83.5 m^3, 92.4 Ci	None	None	None
JUL - DEC. 1979	None Note 3	None Note 3	None Note 3	None	None Note 3

SOLID RADWASTE SHIPMENTS

	Resins, Filters, Evaporator Bottoms	Dry Activated Waste	Irradiated Components	Spent Fuel	Other
JAN - JUN. 1980	2 resin shipments, volume and activity not reported	3.96 m^3, 51.0 Ci	None	13 assemblies	None
JUL - DEC. 1980	8 resin shipments, volume and activity not reported	708 m^3, 332 Ci	None	3 assemblies	None
JAN - JUN. 1981	12 resin shipments, volume and activity not reported	1353 m^3, 620 Ci	None	None	None
JUL - DEC. 1981	16 m^3, resin and filters, 13.5 Ci	249 m^3, 2.7 Ci	None	None	None
JAN - JUN. 1982	3.95 m^3, filter media, 23.5 Ci	206 m^3, 7.03 Ci	None	None	36.7 m^3, 0.0138 Ci
JUL - DEC. 1982	2.27 m^3, resin, 39.5 Ci	283 m^3, 5.14 Ci	None	None	395 m^3, 0.0531 Ci
JAN - JUN. 1983	19.8 m^3, resin, 217 Ci	107 m^3, 5.73 Ci	None	None	67.3 m^3, 3.13 Ci
JUL - DEC. 1983	None	69.9 m^3, 0.622 Ci	None	None	68.6 m^3, 0.134 Ci
JAN - JUN. 1984	None	47.2 m^3, 0.129 Ci	None	None	None
JUL - DEC. 1984	None	147 m^3, 15.0 Ci	None	None	97.3 m^3, 0.239 Ci

SOLID RADWASTE SHIPMENTS

	Resins, Filters, Evaporator Bottoms	Dry Activated Waste	Irradiated Components	Spent Fuel	Other
JAN - JUN. 1985	None	115 m^3, 2.89 Ci	None	None	19.1 m^3, 0.67 Ci Note 4
JUL - DEC. 1985	None	21.3 m^3, 2.16 Ci Note 4	None	None	24.9 m^3, 0.325 Ci Note 4
JAN - JUN. 1986	None	38.7 m^3, 3.52 Ci	None	None	1.7 m^3, 0.24.Ci
JUL - DEC. 1986	4.02 m^3, 370 Ci	202 m^3, 8.04 Ci	None	None	4.24 m^3, 0.19 Ci Note 4
JAN - JUN. 1987	None	3.18 m^3, 10.5 Ci	None	None	2.90 m^3, 1.64 Ci Note 4
JUL - DEC. 1987	4.02 m^3, 25.7 Ci	26.8 m^3, 12.0 Ci	None	None	Note 4
JAN - JUN. 1988	None	15.3 m^3, 0.846 Ci	None	None	1.70 m^3, 1.25 Ci Note 4
JUL - DEC. 1988	None	13.6 m^3, 1.85 Ci	None	None	0.212 m^3, 0.117 Ci Note 4
JAN - JUN. 1989	16.1 m^3, 673 Ci	43.7 m^3, 2.33 Ci	None	None	2.69 m^3, 5.20 Ci
JUL - DEC. 1989	23.3 m^3, 1,020 Ci	29.1 m^3, 0.09 Ci	None	None	3.79 m^3, 18.6 Ci
JAN - JUN. 1990	None	7.45 m^3, 0.197 Ci	None	None	None
JUL - DEC. 1990	None	50.6 m^3, 4.20 Ci	None	None	0.0566 m^3, 8.34 Ci Note 4

Note 1: The activity for these items was included in the dry activated waste activity for that period.

SOLID RADWASTE SHIPMENTS

Note 2: The total volume for 1972 was corrected subsequent to the 1972 Jan-Jun. Semiannual Effluent Report. The correction has been applied equally to both 6 month periods.

Note 3: The data reported in the Jul-Dec. 1979 Semiannual Effluent Report section titled "Solid Waste" was erroneous. Table III of the report and our review of records indicate no solid radwaste was shipped during the Jul-Dec. 1979 period.

Note 4: This data does not include shipments reported as common to Units 1, 2 and 3.

Note 5: This is a conservative estimate based on the most active drum (7.5×10^{-2} Ci) times the total number of drums shipped (19).

NRC REQUEST

Liquid Effluent and Doses

1. Provide for all years in which calculations were performed, the doses reported in the Semi-annual Effluent Release Reports and/or the Radiation Environmental Monitoring Program Reports.

2. Provide for the years 1967-1971 and 1988-1990, the total curies of effluents discharged. The data should be provided in terms of fission and activation products and tritium. Information should also be provided, for the years in which doses were calculated, on the radionuclides which contribute the major portion of the maximum organ and total body doses. [Minor editorial changes have been made to this request for clarity.]

SCE RESPONSE TO "LIQUID EFFLUENTS AND DOSES," PART 1

1. Calculations for doses at the site boundary due to liquid effluent releases were performed starting in 1985. The data from 1985 through 1990 is provided below. This data was extracted from the Semiannual Effluent Reports. Data contained in the Radiological Environmental Operating Reports (REORs) represents the total dose detected at various offsite locations. It is not possible to determine the source of the dose (i.e., liquid effluent, airborne effluent, or other). Therefore REOR data was not used in the table below.

LIQUID DOSES
MREM

	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
1985				
Whole Body	2.36×10^{-1}	1.84×10^{-1}	6.36×10^{-2}	8.83×10^{-1}
Limiting Organ	1.25×10^{0}	3.72×10^{-1}	1.04×10^{-1}	1.21×10^{0}
1986				
Whole Body	5.88×10^{-1}	8.36×10^{-2}	2.58×10^{-2}	8.91×10^{-3}
Limiting Organ	1.74×10^{0}	2.68×10^{-1}	1.27×10^{-1}	2.47×10^{-2}
1987				
Whole Body	7.45×10^{-3}	6.54×10^{-2}	1.42×10^{-2}	2.27×10^{-2}
Limiting Organ	1.44×10^{-2}	1.69×10^{-1}	6.44×10^{-2}	2.55×10^{-1}
1988				
Whole Body	2.83×10^{-1}	3.78×10^{-2}	3.20×10^{-2}	2.01×10^{-1}
Limiting Organ	4.77×10^{-1}	5.10×10^{-2}	4.30×10^{-2}	2.89×10^{-1}
1989				
Whole Body	2.55×10^{-2}	2.35×10^{-2}	1.49×10^{-2}	5.23×10^{-2}
Limiting Organ	3.48×10^{-2}	2.62×10^{-2}	1.74×10^{-2}	6.78×10^{-2}
1990				
Whole Body	2.67×10^{-3}	2.82×10^{-2}	1.47×10^{-1}	6.74×10^{-2}
Limiting Organ	3.34×10^{-3}	4.39×10^{-2}	1.98×10^{-1}	9.13×10^{-2}

SCE RESPONSE TO "LIQUID EFFLUENTS AND DOSES," PART 2

Tabulated below are the curies of liquid effluent discharged in 1967 through 1971, and 1988 through 1990 as reported in the Semiannual Effluent Reports.

LIQUID EFFLUENTS

	Fission and Activation Product Ci	Tritium Ci	Major Radionuclide Contributor to:	
			Organ Ci	Whole Body Ci
JUN-DEC 67	3.17×10^{-1} Note 1	NA	NA	NA
JAN-JUN 68	1.40×10^{-1} Note 1	NA	NA	NA
JUL-DEC 68	1.50×10^{0} Note 1	NA	NA	NA
JAN-JUN 69	2.04×10^{0} Note 2	$1.77 \times 10^{+3}$	NA	NA
JUL-DEC 69	5.96×10^{0} Note 2	$1.76 \times 10^{+3}$	NA	NA
JAN-JUN 70	1.81×10^{0} Note 2	$2.74 \times 10^{+3}$	NA	NA
JUL-DEC 70	2.00×10^{0} Note 2	$2.04 \times 10^{+3}$	NA	NA
JAN-JUN 71	6.67×10^{-1} Note 2	$2.58 \times 10^{+3}$	NA	NA
JUL-DEC 71	7.96×10^{0} Note 3	$1.99 \times 10^{+3}$	NA	NA
1988				
1ST QUARTER	3.67×10^{-1}	$4.73 \times 10^{+2}$	9.54×10^{-2} ^{131}I	7.97×10^{-2} ^{134}Cs
2ND QUARTER	1.16×10^{-1}	$1.44 \times 10^{+2}$	3.35×10^{-2} ^{134}Cs	3.35×10^{-2} ^{134}Cs
3RD QUARTER	6.91×10^{-2}	$1.61 \times 10^{+2}$	2.64×10^{-2} ^{134}Cs	2.64×10^{-2} ^{134}Cs
4TH QUARTER	1.59×10^{-1}	$7.56 \times 10^{+2}$	7.62×10^{-2} ^{131}I	1.88×10^{-2} ^{134}Cs

LIQUID EFFLUENTS

	Fission and Activation Product Ci	Tritium Ci	Major Radionuclide Contributor to:	
			Organ Ci	Whole Body Ci
1989				
1ST QUARTER	1.43×10^{-1}	$6.05 \times 10^{+1}$	3.21×10^{-2} ^{134}Cs	3.21×10^{-2} ^{134}Cs
2ND QUARTER	1.22×10^{-1}	$2.17 \times 10^{+1}$	5.89×10^{-2} ^{137}Cs	3.96×10^{-2} ^{134}Cs
3RD QUARTER	1.11×10^{-1}	$2.15 \times 10^{+2}$	4.80×10^{-2} ^{137}Cs	3.03×10^{-2} ^{134}Cs
4TH QUARTER	2.90×10^{-1}	$6.65 \times 10^{+2}$	1.50×10^{-1} ^{137}Cs	1.01×10^{-1} ^{134}Cs
1990				
1ST QUARTER	9.53×10^{-3}	$3.30 \times 10^{+2}$	5.71×10^{-3} ^{137}Cs	5.71×10^{-3} ^{137}Cs
2ND QUARTER	1.98×10^{-1}	$8.49 \times 10^{+2}$	2.70×10^{-2} ^{131}I	6.06×10^{-2} ^{134}Cs
3RD QUARTER	1.57×10^{-1}	$2.12 \times 10^{+2}$	6.71×10^{-2} ^{137}Cs	4.69×10^{-2} ^{134}Cs
4TH QUARTER	3.59×10^{-2}	$3.26 \times 10^{+1}$	1.74×10^{-2} ^{137}Cs	1.11×10^{-2} ^{134}Cs

NA - Data not available

Note 1: Reported as total activity released. Breakdown by radionuclide is not available.

Note 2: Reported as total beta - gamma activity released.

Note 3: Sum of beta-gamma plus xenon isotopes.

NRC REQUEST

Airborne Effluents and Doses

1. Provide for all years in which calculations were performed, the doses reported in the Semi-annual Effluent Release Reports and/or the Radiation Environmental Monitoring Program Reports.

2. Provide for the years 1967-1971 and 1988-1990, the total curies of effluents discharged. Data should be provided in terms of noble gases, ^{131}I, and tritium. Information should also be provided, for the years in which doses were calculated, on the radionuclides which contribute the major portion of the maximum organ, gamma and beta air, skin and total body doses. [Minor editorial changes have been made to this request for clarity.]

SCE RESPONSE TO "AIRBORNE EFFLUENTS AND DOSES," PART 1

1. Calculations for doses at the site boundary due to airborne effluent releases were performed starting in 1985. The data from 1985 through 1990 is provided below. This data was extracted from the Semiannual Effluent Reports. The data contained in the Radiological Environmental Operating Reports (REORs) represents the total dose detected at various offsite locations. It is not possible to determine the source of the dose (i.e., liquid effluent, airborne effluent, or other). Therefore, REOR data was not used in the table below.

AIRBORNE DOSES

	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
1985				
Tritium, Iodines and Particulates - mrem	4.36×10^{-4}	3.78×10^{-5}	1.05×10^{-2}	5.05×10^{-3}
Noble gases gamma - mrad beta - mrad	 3.32×10^{-1} 6.54×10^{-1}	 1.73×10^{-1} 4.67×10^{-1}	 1.11×10^{-1} 3.04×10^{-1}	 6.56×10^{-2} 1.81×10^{-1}
Direct radiation - mrem	2.37×10^{-1}	2.26×10^{-1}	1.91×10^{-1}	1.48×10^{-1}
1986				
Tritium, Iodines and Particulates - mrem	2.09×10^{-4}	1.08×10^{-4}	1.15×10^{-3}	6.31×10^{-5}
Noble gases gamma - mrad beta - mrad	 3.59×10^{-4} 1.08×10^{-3}	 0.00 0.00	 3.21×10^{-2} 7.36×10^{-2}	 1.69×10^{-2} 4.69×10^{-2}
Direct radiation - mrem	2.11×10^{-1}	1.63×10^{-1}	2.75×10^{-1}	5.47×10^{-1}
1987				
Tritium, Iodines and Particulates - mrem	1.18×10^{-4}	1.07×10^{-2}	1.29×10^{-3}	1.78×10^{-3}
Noble gases gamma - mrad beta - mrad	 1.46×10^{-2} 4.35×10^{-2}	 3.38×10^{-2} 8.79×10^{-2}	 3.08×10^{-2} 8.37×10^{-2}	 3.48×10^{-2} 9.45×10^{-2}
Direct radiation - mrem	2.60×10^{-1}	4.64×10^{-1}	1.12×10^{0}	2.47×10^{0}

AIRBORNE DOSES

	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
1988				
Tritium, Iodines and Particulates - mrem	8.27×10^{-3}	8.09×10^{-3}	1.89×10^{-3}	4.78×10^{-2}
Noble gases gamma - mrad beta - mrad	8.51×10^{-2} 2.48×10^{-1}	0.00 0.00	4.99×10^{-2} 1.25×10^{-1}	2.87×10^{-1} 7.78×10^{-1}
Direct radiation - mrem	1.23×10^{0}	1.05×10^{0}	4.00×10^{0}	5.30×10^{0}
1989				
Tritium, Iodines and Particulates - mrem	6.28×10^{-3}	9.95×10^{-4}	8.43×10^{-4}	3.27×10^{-4}
Noble gases gamma - mrad beta - mrad	1.78×10^{-7} 1.68×10^{-5}	2.70×10^{-2} 3.57×10^{-2}	4.76×10^{-2} 1.26×10^{-1}	1.24×10^{-1} 3.39×10^{-1}
Direct radiation - mrem	2.94×10^{0}	2.65×10^{0}	1.09×10^{-1}	1.02×10^{-1}
1990				
Tritium, Iodines and Particulates - mrem	5.59×10^{-3}	3.33×10^{-1}	4.44×10^{-2}	6.86×10^{-3}
Noble gases gamma - mrad beta - mrad	3.33×10^{-2} 9.51×10^{-2}	1.06×10^{-1} 2.90×10^{-1}	1.03×10^{-1} 3.07×10^{-1}	0.00 0.00
Direct radiation - mrem	1.53×10^{-1}	6.98×10^{-2}	1.62×10^{-1}	$1.12 \times 10^{+1}$

SCE RESPONSE TO "AIRBORNE EFFLUENTS AND DOSES", PART 2

2. Tabulated below are the curies of airborne effluent discharged in 1967 through 1971, and 1988 through 1990 as reported in the Semiannual Effluent Reports. Noble gas releases are dominated by a single isotope. That isotope is therefore the major contributor to the beta/gamma dose. Since beta provides the skin dose and gamma provides the total body dose, the isotope that is the major contributor to beta/gamma is also the major contributor to the skin and total body doses. Therefore headings for skin and total body have not been included.

AIRBORNE EFFLUENTS

	Noble Gases Ci	Iodine-131 Ci	Tritium Ci	Major Radionuclide Contributor to:	
				Organ Ci	Gamma-Beta Air Ci
JUN-DEC 67	4.02×10^{0} Note 1	NA	NA	NA	NA
JAN-JUN 68	2.63×10^{0} Note 1	NA	NA	NA	NA
JUL-DEC 68	2.02×10^{0} Note 1	NA	NA	NA	NA
JAN-JUN 69	$5.64 \times 10^{+1}$ Note 1	NA	3.21×10^{-1}	NA	NA
JUL-DEC 69	$2.00 \times 10^{+2}$ Note 2	NA	2.15×10^{0}	NA	NA
JAN-JUN 70	$8.48 \times 10^{+2}$ Note 2	NA	6.21×10^{0}	NA	NA
JUL-DEC 70	$7.58 \times 10^{+2}$ Note 2	NA	4.56×10^{0}	NA	NA
JAN-JUN 71	$1.36 \times 10^{+3}$ Note 2	NA	8.63×10^{0}	NA	NA
JUL-DEC 71	$4.64 \times 10^{+3}$	NA	4.50×10^{1}	NA	NA
1988					
1ST QTR	$9.60 \times 10^{+2}$	9.76×10^{-4}	3.62×10^{0}	9.76×10^{-4} ^{131}I	$9.36 \times 10^{+2}$ ^{133}Xe
2ND QTR	< LLD	7.24×10^{-7}	$1.16 \times 10^{+1}$	7.24×10^{-7} ^{131}I	None - Shutdown

AIRBORNE EFFLUENTS

	Noble Gases Ci	Iodine-131 Ci	Tritium Ci	Major Radionuclide Contributor to:	
				Organ Ci	Gamma-Beta Air Ci
3RD QTR	$2.38 \times 10^{+2}$	7.44×10^{-5}	1.53×10^{0}	7.44×10^{-5} ^{131}I	$2.14 \times 10^{+2}$ ^{133}Xe
4TH QTR	$1.79 \times 10^{+3}$	9.27×10^{-3}	3.78×10^{0}	9.27×10^{-3} ^{131}I	$1.70 \times 10^{+3}$ ^{133}Xe
1989					
1ST QTR	1.35×10^{-2}	6.64×10^{-4}	1.00×10^{0}	6.64×10^{-4} ^{131}I	1.32×10^{-2} ^{85}Kr
2ND QTR	$4.55 \times 10^{+1}$	4.11×10^{-5}	5.11×10^{-1}	4.11×10^{-5} ^{131}I	$3.49 \times 10^{+1}$ ^{133}Xe
3RD QTR	$2.73 \times 10^{+2}$	1.81×10^{-4}	1.32×10^{-1}	1.81×10^{-4} ^{131}I	$2.58 \times 10^{+2}$ ^{133}Xe
4TH QTR	$7.89 \times 10^{+2}$	1.20×10^{-3}	$3.21 \times 10^{+1}$	1.20×10^{-3} ^{131}I	$5.26 \times 10^{+2}$ ^{133}Xe
1990					
1ST QTR	$3.05 \times 10^{+2}$	4.56×10^{-4}	5.43×10^{0}	4.56×10^{-4} ^{131}I	$2.96 \times 10^{+2}$ ^{133}Xe
2ND QTR	$7.06 \times 10^{+2}$	7.36×10^{-4}	$5.77 \times 10^{+1}$	7.36×10^{-4} ^{131}I	$6.68 \times 10^{+2}$ ^{133}Xe
3RD QTR	$7.93 \times 10^{+2}$	6.02×10^{-3}	$2.12 \times 10^{+1}$	6.02×10^{-3} ^{131}I	$7.80 \times 10^{+2}$ ^{133}Xe
4TH QTR	< LLD	1.02×10^{-5}	6.93×10^{0}	1.02×10^{-5} ^{131}I	None - Shutdown

NA - Data not available

LLD - Lower limit of detection

Note 1: Reported as total activity released. Breakdown by radionuclide is not available.

Note 2: Reported as total beta - gamma activity released.

NRC REQUEST

Radiological Environmental Monitoring Program Reports

The results of the individual samples obtained to meet the requirements of Table 3.18.1 of the San Onofre Unit 1 Technical Specifications should be provided for the years in which only San Onofre Unit 1 was operating and for the years 1985, 1987, 1988, and 1990 when San Onofre Units 2 and 3 were also operating. The information should be summarized as in the example given in Attachment 1 to this Enclosure. [Attachment 1 has not been included in our restatement.]

SCE RESPONSE TO "RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REPORTS"

Enclosure 2 to this letter contains data for the specified years. To provide a manageable database, we have limited the data to the most significant nuclides analyzed. Enclosure 2 contains data for the nuclides which have reporting levels specified in Technical Specification Table 3.18.2, and for strontium, gross alpha and gross beta. Data for other nuclides is included only if the analysis found levels above the lower limit of detection (LLD).