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1980 ANNUAL ENVIRONMENTAL RADIOLOGICAL REPORT DIABLO CANYON POWER PLANT

DEPARTMENT OF ENGINEERING RESEARCH

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PACIFIC GAS AND ELECTRIC COMPANY
DEPARTMENT OF ENGINEERING RESEARCH

1980 ANNUAL ENVIRONMENTAL RADIOLOGICAL REPORT DIABLO CANYON POWER PLANT

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SUMMARY

The environmental radiological monitoring program was continued with minor changes in 1980. The measurements taken during this year generally remained in the range of other preoperational measurements. Results of the Department of Engineering Research's participation in the EPA cross-check program and a land use census of the vicinity of the plant site are also included in this report.

INTRODUCTION

This report contains results of the preoperational environmental radiological monitoring program (ERMP) for the Diablo Canyon Power Plant (DCPP) site compiled for the period January 1, 1980 through December 31, 1980. The monitoring program was conducted in accordance with the Diablo Canyon Environmental Radiological Monitoring Program, as revised May 1, 1979.(1) Results of previous measurements from Diablo Canyon environs are contained in quarterly reports numbered 1-35(2) and the 1979 Annual Environmental Radiological Report.(3)

SAMPLE COLLECTION AND ANALYSES

During this period, 60 marine samples were collected and analyzed as described in the marine sampling program, Table 1. This program prescribes a quarterly sampling schedule which is utilized to insure that required samples will be obtained at least semiannually, if available. However, black abalone, red abalone, Pismo clams, and commercial salmon were collected only when in season and population density permitted.

Direct radiation was measured at monthly intervals at 30 stations and at quarterly intervals at five additional locations (Table 2). The direct radiation exposures were measured using thermoluminescent dosimeters (TLDs). The sampling locations are described by Table 3 and shown in Figures 1-3.

Air was continuously sampled at nine locations, Stations MT1, 2F2, 5F1, 7D1, 8S1, OS2, SM, SV, and LO, as shown in Figures 1-3. These samples, 289 air particulate filters and 368 iodine cartridges, were collected generally at weekly intervals. Five samples were not collected from Stations 5F1, 7D1, 8S1, and LO due to mechanical failure in the sampling equipment.

Forty-three terrestrial samples were collected and analyzed as described in Table 2. These included milk samples from two dairies which were collected at monthly intervals, surface water samples from two Diablo Creek locations which were collected quarterly, and vegetable samples from three farms which were collected quarterly.

In addition, the results of our participation in the EPA Environmental Radiological Laboratory Intercomparison Program and a summary of a land use census for the plant environs are included in this report.

DISCUSSION OF RESULTS

The results obtained from the monitoring program are contained in Appendices A and B. Each appendix is ordered in the following manner: Water Samples, Table 1; Airborne Radioactivity, Table 2; Fish and Seafood Samples, Table 3; Milk Samples, Table 4; Terrestrial Food Products, Table 5; Sediment Samples, Table 6, and Direct Radiation Measurements, Table 7. The tables in Appendix A present summaries of the results in

accordance with current Nuclear Regulatory Commission (NRC) guidance.(4) The tables in Appendix B contain the analytical results of the individual samples which were used to compile the summaries in Appendix A.

In addition to the above, Table A-8 details the results of our participation in the EPA Laboratory Intercomparison Program. Table B-8 contains the results from the analyses of indicator marine samples which were collected during the year which are not directly compatible with NRC reporting guidelines.

A short narrative summary will follow describing the results contained in the tables of Appendix A. The maximum values for the Lower Limits of Detection (LLD) that are discussed below are shown in Table 4.

Water Samples

One sample of seawater from Diablo Cove and two samples of surface water from Diablo Creek were collected quarterly. Analytical techniques used were capable of achieving the required LLDs with the exception of that for iodine-131. No iodine-131 activity was detected in any water sample and none could be expected due to the lack of a source and its short half-life. However, we are adjusting our sampling and analytical techniques to achieve the required sensitivity.

Airborne Radioactivity

Air particulate filters and iodine cartridges were collected at weekly intervals from nine stations. Gross beta activity was measured on all filters. These measurements were consistent with previous values until October. Gross beta values began increasing consistently in October and continued to do so through the end of the year. This is due to fallout

from an atmospheric nuclear weapons test conducted by the Peoples Republic of China on October 16, 1980. The airborne samples collected from Santa Maria, Solvang, and Lompoc were treated as indicator stations. No iodine-131 was detected on any of the charcoal cartridges. The LLDs were met for all these analyses. The particulate filters were composited quarterly by location and analyzed for gamma emitters. All of these analyses met required sensitivities. Low concentrations of 103 Ru, 140 Ba, 140 La, 95 Zr, and 54 Mn were detected in the fourth quarter composite of particulate filters due to the atmospheric weapons test mentioned above.

Fish and Seafood Samples

Fish, abalone, and clam samples were taken when available each quarter. Cesium-137 activity was measured in fish samples throughout the year, but the activity was well below reporting levels. This activity results from previous atmospheric nuclear weapons tests.

Milk Samples

Raw milk samples were collected each month from two dairies except for a Station 5F2 sample in August when milk was not collected due to bacterial contamination. The required analytical sensitivity was met on noted isotopes in all samples. Cesium-137 activity was measured in Samples 80367 and 80539, but the measured activity was below the reporting level for this isotope. This activity results from previous atmospheric nuclear weapons tests.

Food Products

Green leafy parts of vegetables grown in the Diablo Canyon area were collected from two farms at quarterly intervals. In addition, snow peas were collected at quarterly intervals from a farm along the plant access

road. The required analytical sensitivities were met for noted isotopes on all samples. Small concentrations of naturally occurring or fallout radioisotopes were measured in these samples, but all were well below the reporting levels.

Sediments

Sediment samples were collected from Diablo Cove at quarterly intervals. Although cesium-137 activity was measured in one of these samples, the level measured was substantially below reporting levels. This activity results from previous atmospheric nuclear weapons tests.

Direct Radiation

Victoreen Model TL-15 glass encapsulated CaF_2:Mn thermoluminescent dosimeters are used in direct radiation monitoring in the Diablo Canyon environs. There are 35 dosimeter locations. Thirty are changed monthly; five are exchanged quarterly. Station 7S2 is changed quarterly since it is difficult to change in adverse weather, and Station 5F3 is changed quarterly to allow comparison with state TLD data at this location. The Santa Barbara County stations at Santa Maria (SM), Solvang (SV), and Lompoc (LO) are collected quarterly by agreement with the Santa Barbara County Health Department. These stations were treated as indicator stations on the summary table. The measurements for 1980 are in agreement with those for the previous nine years for the stations that were monitored during that time. The results are given in Table B-7.

In addition to the routine dosimetry program, we also participated in the Fifth International Intercomparison of Environmental Dosimeters. This intercomparison was sponsored by the University of Texas, School of Public

Health, the U.S. Department of Energy, and the Idaho National Engineering Laboratory. In the intercomparison, there were three groups of exposed dosimeters and one group of control dosimeters. One of the exposed groups was placed in the environment for three months of exposure to natural background. The other two groups were given a known laboratory exposure; one at the beginning of the exposure period and one at the end in order to study fading characteristics. The dosimeters were sent in Schedule 80 PVC pipe similar to the holders used in the field around Diablo Canyon Power Plant. The results for the dosimeters were returned to the organizers in late January 1981; however, a report from the Intercomparison Committee has not been sent to the participants.

EPA ENVIRONMENTAL RADIOACTIVITY LABORATORY INTERCOMPARISON STUDIES PROGRAM

The DER radioanalytical laboratory participated in the Environmental Protection Agency's (EPA) Environmental Radioactivity Laboratory Intercomparison Studies (Cross-check) Program[5] during 1980. We participated in the following determinations (sample mediums-radionuclide combination): diet samples containing gamma emitters; milk samples containing gamma emitters; water samples containing tritium, iodine-131, gamma emitters, and alpha and beta emitters; and air particulate samples containing alpha and beta emitters. Our participation was such that we received at least three samples of each of these determinations. The results of our participation are shown on Table A-8. As noted on the table, we have not received the known values from the EPA for several of the determinations conducted during 1980. As these known values will be available from the EPA, we do not plan to submit a supplementary report to include these values.

LAND USE CENSUS

Engineering Research conducted a land use census in the vicinity of Diablo Canyon Power Plant. This census was for 1980. The land use census is required by Nuclear Regulatory Commission, Regulatory Guide 4.8, "Environmental Technical Specifications for Nuclear Power Plants," and by the Diablo Canyon Power Plant Environmental Technical Specifications. These both require that a census be conducted at least once per year during the growing season (between June 1 and October 1 for the Diablo Canyon environs). The census is to identify the nearest milk animal and nearest garden greater than 50 square meters (500 square feet) producing broad-leaf vegetation in each of the 16 meteorological sectors within a distance of 8 kilometers (5 miles) of the plant. In addition, the Diablo Canyon Environmental Technical Specifications require the identification of the location of the nearest residence in each of the 16 sectors within a distance of five miles.

The methods for conducting the census were: a helicopter flyover, contact with San Luis Obispo County agricultural personnel and contact with individual landowners or tenants. The landowners were identified from county records. The flyover was made during October 1979, as was contact with county agricultural personnel. The landowners and tenants were contacted between July 15 and September 1, 1980.

The only activities indicated by county agricultural personnel were cattle grazing in much of the area surrounding the plant site and truck farming in the southeast sector along the coastal plateau.

During the flyover, no gardens greater than 500 square feet (except for the above mentioned farming) or milk animals were observed. Contact with the landowners or tenants confirmed this observation. These contacts were made either personally or by phone.

The land use in the vicinty of Diablo Canyon has not changed significantly from that identified in Section 2.0 of the Diablo Canyon Final Safety Analysis Report. Figure 4 and Table B-9 summarize the land use census results. No milk animals were identified within the first five miles in any sector. The only garden or farm greater than 500 square feet is in the southeast sector along the site access road. This farm is on the coastal plateau; it starts at approximately two miles from the plant and extends to 4.5 miles from the plant. The nearest residence is 1-3/4 miles north-northwest of the plant. A total of eight permanent residences were identified within five miles of the plant.

METHODS OF SAMPLE COLLECTION AND ANALYSIS

Most samples are collected by DER personnel. A quarterly collection schedule is followed for marine, surface water, and vegetable samples to insure that a sample is taken semiannually. California Polytechnic College Foundation personnel under the direction of Dr. F. Clogston collect terrestrial and occasionally some marine samples. PGandE Coast Valley Division personnel service the air sampling station at Station 2F2. The San Luis Obispo (SLO) County Health Department personnel service Station 5F3 dosimetry. Santa Barbara County personnel service the air sampling stations at SM, SV, and LO.

Marine and terrestrial samples are processed for analysis at DER. Except for seawater, samples are freeze-dried or evaporated prior to determining gross beta activity. Beta analysis is performed on low background, thin window, gas-flow proportional counters; the limit of detectability is typically 0.5 pCi/gm of a standard containing K-40. Activities are reported per gram dry sample or per gram original sample, as appropriate.

The tritium (H-3) activity in surface water is determined by analyzing a distilled aliquot of the sample with a liquid scintillation spectrometer. The limit of detection for this analysis is typically 0.2 pCi/ml of water.

Radioiodine analyses are performed on milk samples within eight days of collection. Following addition of stable iodine to the raw milk to permit determination of chemical recovery, iodine is separated from the milk by an anion ion exchange resin. Iodine is stripped from the resin and after purification is precipitated as cuprous iodide for measurement by beta-gamma coincidence counting. The detection limit attained by this method is typically 0.2 pCi/liter for I-131.

A gamma isotopic analysis, using a Ge(Li) or intrinsic germanium detector and multichannel pulse height analyzer, is performed on all marine and terrestrial samples, on iodine cartridges, and on quarterly composite of air filters. The limit of detectability attained in the gamma scan is typically less than 1 pCi/gm of a freeze-dried sample containing a single radionuclide.

Air samplers are located at Stations MT1, 2F2, 5F1, 7D1, 8S1, OS2, SM, SV, and LO (Figures 1 through 3). The constant flow samplers have a flow rate in the range of 40 lpm. An HV-70 filter and a Scott TEDA

impregnated charcoal cartridge for the collection of radioiodines are used. The filters and cartridges are concurrently collected on a weekly basis and mailed to DER. The filters are counted to determine gross beta activity at least 72 hours after collection to allow for naturally occurring short-lived radionuclides to decay, and the filters are combined quarterly for an analysis of gamma emitters. The cartridges are gamma scanned within one half-life (eight days) to determine I-131 concentration. The limit of detection of this analysis is typically 0.02 pCi per cubic meter of air sampled.

Gamma dosimetry is performed at stations shown in Figures 1 through 3. At all stations except 7S2, SM, SV, LO, and 5F3, a packet containing three Victoreen (Model TL-15) TLDs is exposed on a monthly basis and changed by PGandE personnel. At Stations 7S2, SM, SV, LO, and 5F3, a packet of three TLDs are exposed quarterly and changed by PGandE personnel and the SLO County Health Department personnel, respectively. All TLDs are mailed to DER for readout after their exposure.

The $\pm$ term in the tables of Appendix B is the two-sigma error; i.e., the 95 percent confidence level.

TABLE 1

Marine Sampling Program

Sample Item	Sampling Location	Type of Analysis	Material Analyzed	Collection Frequency
Seawater	Diablo Cove	Gamma isotopic, tritium	Aliquot	Quarterly
Red algae, foliose (*Iridaea* sp.)	Diablo Cove	Gamma isotopic	Complete sample	Quarterly
Bull kelp (*Nereocystis leutkeana*)	Diablo Cove	Gamma isotopic	Frond and stipe	Quarterly
Goose barnacles (*Pollicipes polymerus*)	Diablo Cove	Gamma isotopic	Meat and shell	Quarterly
Mussels (*Mytilus californianus*)	Diablo Cove	Gamma isotopic	Complete sample, less shell	Quarterly if available
Black abalone (*Haliotis cracherodii*)	Diablo Cove	Gamma isotopic	Edible muscle and viscera	Quarterly
Striped sea perch (*Embiotoca lateralis*)	Diablo Cove	Gamma isotopic	Edible muscle	Quarterly if available
Pismo clams (*Tivela stultorum*)	Pismo Beach	Gamma isotopic	Complete sample, less shell	Quarterly
Red abalone (*Haliotis rufescens*)	Diablo Cove	Gamma isotopic	Edible muscle and viscera	Quarterly if available
Blue Rockfish (*Sebastes mystinus*)	Diablo Cove	Gamma isotopic	Edible muscle	Quarterly
	Commercial landing in Morro Bay[a/]	Gamma isotopic	Edible muscle	Quarterly[b/] if collected locally
Salmon	Commercial landing in Morro Bay[a/]	Gamma isotopic	Edible muscle	Quarterly[b/] if collected locally

a/Commercial samples. b/Sampled when in season.

TABLE 2

Direct Radiation, Airborne, and Terrestrial Sampling Program

Sample Item	Sampling Location	Type of Analysis	Collection Frequency
Direct Radiation[a]	35 stations[b]	Gamma dose	Monthly[c]
Airborne			
Particulates[d]	9 stations[b]	Gross beta Gamma isotopic	Weekly Quarterly composite
Iodine	9 stations[b]	Gamma for I-131	Weekly
Surface water	2 stations[e]	Gross beta[f], gamma isotopic[g], tritium	Quarterly
Grains and vegetables	Farm in San Luis Obispo area; farm in Guadalupe area; farm along plant access road[b]	Gamma isotopic[g]	Quarterly
Milk	Farm in San Luis Obispo area; farm in Guadalupe; area[b]	Gamma isotopic[g] Radioiodine[g]	Monthly Monthly

a/Thermoluminescent dosimeters (TLD), three at each station.
b/See Figures 1, 2, and 3 for locations.
c/Except Stations 7S2, 5F3, SM, SV, and LO which are quarterly.
d/Filters changed weekly or as required by dust loading; analyzed at least 72 hours after filter change.
e/Diablo Creek above 500 kv switchyard; Diablo Creek at Diablo Cove.
f/Analyses performed on evaporate.
g/Analyses performed on complete sample.

TABLE 3

Distances and Directions to Environmental Monitoring Stations

Old Station Code	Current Station Code*	Station Name	Radial Direction (True Heading) (Degrees)	Radial Distance from Plant (Miles)
3	0S1	Exclusion Fence-Northwest Corner	320	0.1
*	0S2	North Gate	320	0.5
*	1S1	Wastewater Pond	330	0.4
*	2S1	Back Road-300 m North of Plant	C	0.2
*	3S1	Road NW of 230 kv Switchyard	23	0.4
*	4S1	Back Road Between Switchyards	43	0.5
4	5S1	400 kv Switchyard	58	0.4
20	5S2	Diablo Creek Wier	65	0.6
8	5S3	Microwave Tower Road	70	0.7
5	6S1	Microwave Tower	94	0.5
*	7S1	Overlook Road	112	0.3
28	7S2	Diablo Peak	103	1.1
6	8S1	Target Range	125	0.5
7	8S2	Southwest Site Boundary	128	1.1
*	9S1	South Cove	167	0.4
1	MT1	Meteorological Tower	185	0.2
19	DCM	Diablo Cove	270	0.2
21	DCC	Diablo Creek at Diablo Cove	270	0.1
2	WN1	Northwest Guard Shack	290	0.2
13	1A1	Crowbar Canyon	327	1.6
18	0B1	Point Buchon	325	3.6
*	1C1	Montana de Oro Campground	336	4.7
*	5C1	Junction Prefumo/See Canyon Roads	64	4.7
16	7C1	Pecho Creek Ruins	118	4.1
10	2D1	Sunnyside School	10	6.9
*	3D1	Clark Valley	24	6.2
11	4D1	Los Osos School	36	7.6
*	6D1	Junction See/Davis Canyon Roads	89	7.5
27	7D1	Avila Gate	120	6.6
14	7D2	Avila Beach	110	7.6
26	2F1	Morro Bay	0	10.9
9	2F2	Morro Bay Power Plant	358	11.2
12	5F1	SLO Zone 1 Substation	68	11.2
25	5F2	Cal Poly Farm	60	12.6
29	5F3	SLO County Health Department	70	12.7
17	7F1	Shell Beach	110	10.8
22	7F2	Pismo Beach	115	12.6
23	7G1	Arroyo Grande	115	16.8
15	7G2	Oceano Substation	118	17.3
30	7G3	Woodland Dairy	122	17.9
*	SM	Santa Maria	127	29.7
*	LO	Lompoc	154	44.6
*	SV	Solvang	144	56.1

*New station.

TABLE 3 - contd.

*Station Code (XYZ):

X - First number (0-9) represents the radial sector in which the station is located:

0 - Northwest
1 - North-northwest
2 - North
3 - North-northeast
4 - Northeast
5 - East-northeast
6 - East
7 - East-southeast
8 - Southeast
9 - South-southeast

Y - Letter (S, A-H) represents the distance from the plant:

S - On-site
A - 0-2 miles from plant (but off-site)
B - 2-4 miles from plant
C - 4-6 miles from plant
D - 6-8 miles from plant
E - 8-10 miles from plant
F - 10-15 miles from plant
G - 15-20 miles from plant
H - Greater than 20 miles from plant

Z - Second number represents the station number within the zone.

*Station Code (LO, SM, SV, MT1, WN1, DCC, DCM):

The Santa Barbara County stations at Lompoc, Santa Maria, and Solvang and the on-site locations at the meteorological tower, Diablo Cove, and Diablo Creek at Diablo Cove do not follow the coding system listed above.

TABLE 4

Maximum Values for the Lower Limits of Detection (LLD)[a]

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
Gross beta	4[b]	1×10^{-2}				
^{3}H	2000 (1000)[b]					
^{54}Mn	15		130			
^{59}Fe	30		260			
$^{58,60}Co$	15		130			
^{65}Zn	30		260			
^{95}Zr-Nb	15					
^{131}I	1[b]	7×10^{-2}		1	60[c]	
$^{134,137}Cs$	15(10)[b],18	1×10^{-2}	130	15	80	150
^{140}Ba	60			60		
^{140}La	15			15		

Table Notation

a - The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95 percent probability with 5 percent probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \times V \times 2.22 \times Y \times \exp(-\lambda t)}$$

where

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume)

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

TABLE 4 - contd.

E is the counting efficiency (as counts per transformation)

V is the sample size (in units of mass or volume)

2.22 is the number of transformations per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

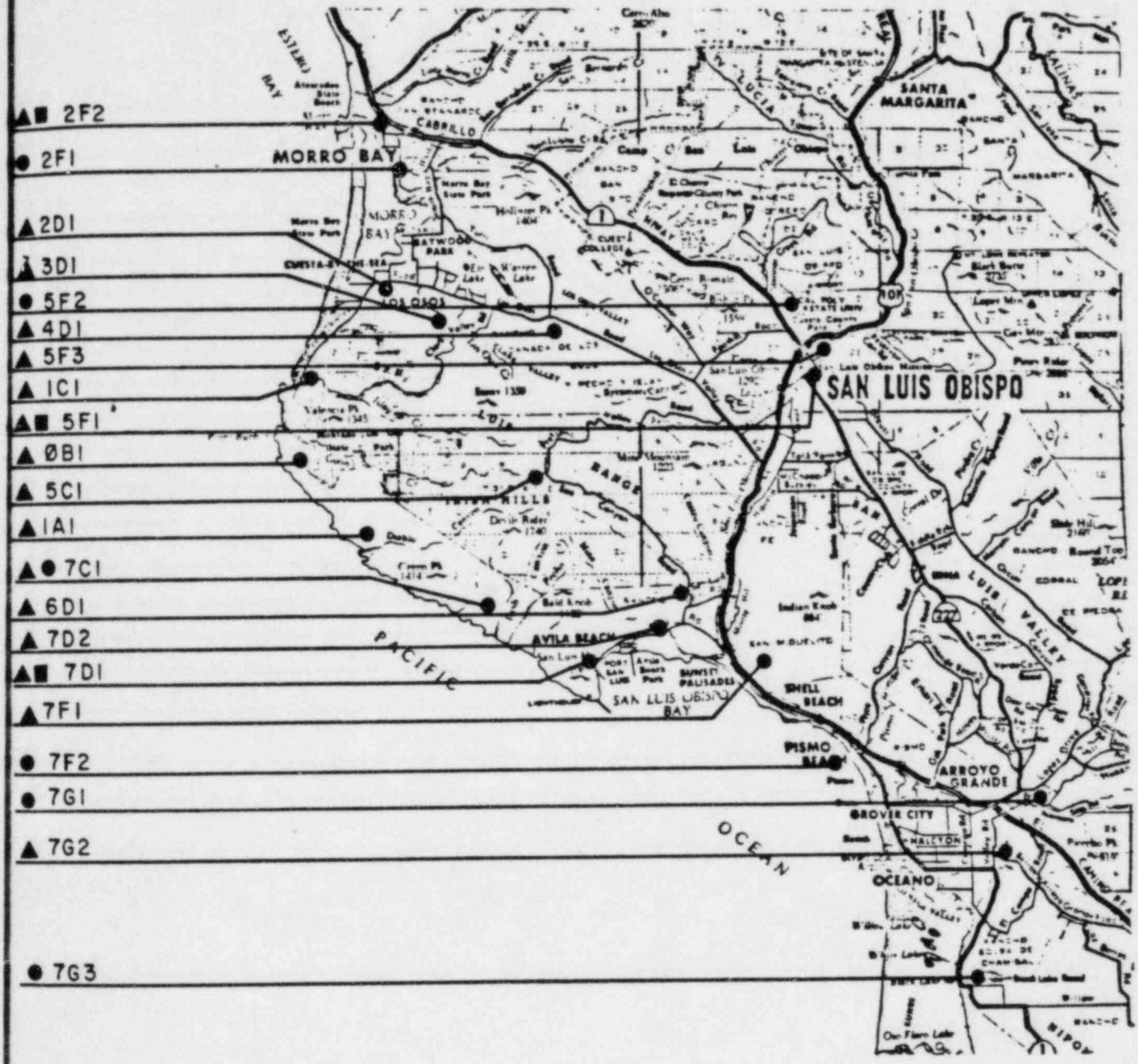
t is the elapsed time between sample collection (or end of the sample collection period) and time of counting

The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples).

Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidably small sample sizes, the presence of interferring nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors will be identified and described elsewhere in the report.

b - LLD for drinking water.

c - LLD for leafy vegetables.



LEGEND

- ▲ Dosimetry Station
- ■ Air Particulate Station
- ● Biological Sampling Station

UNITS 1 AND 2
DIABLO CANYON SITE

Figure 1

Off Site Stations

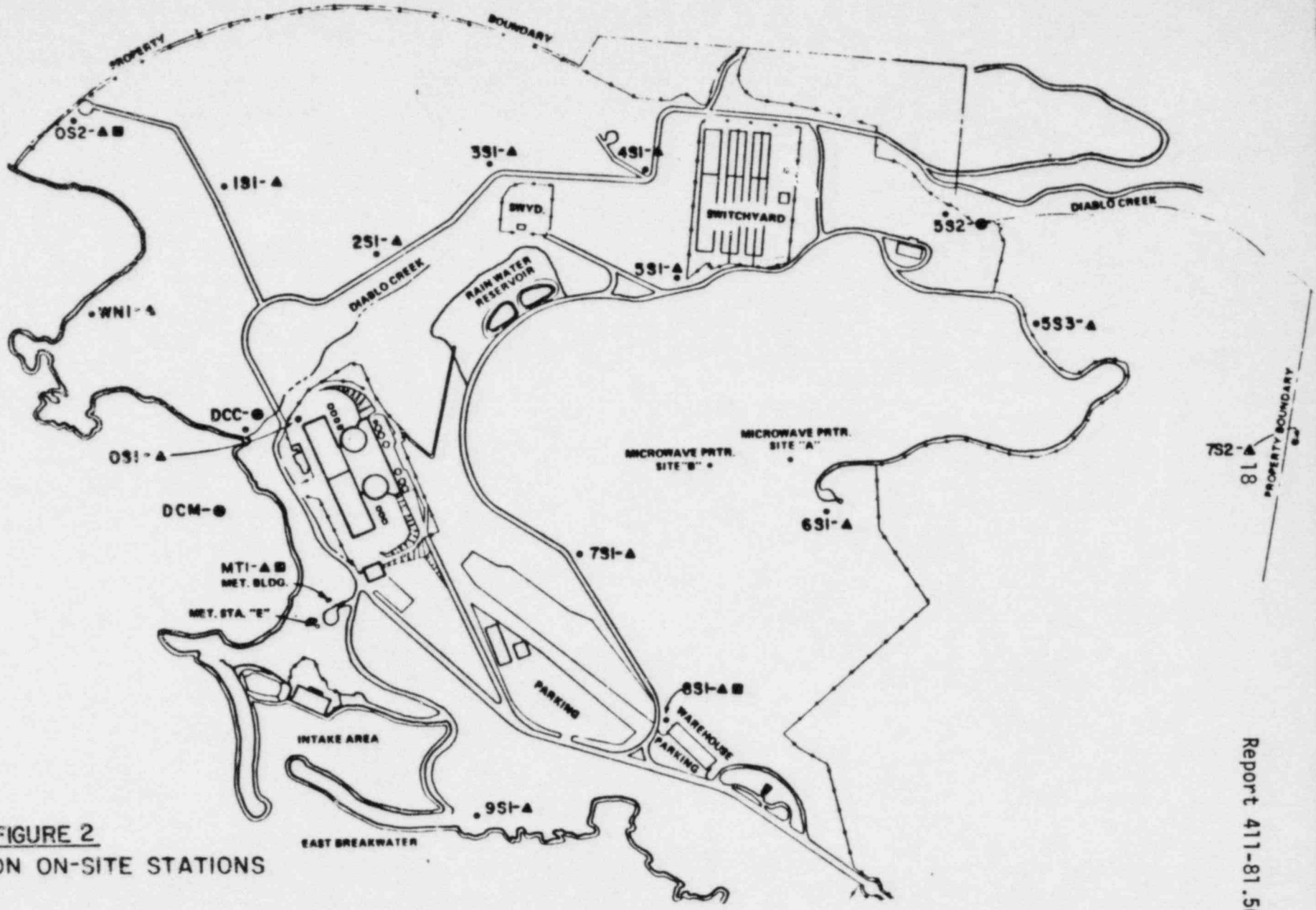


FIGURE 2

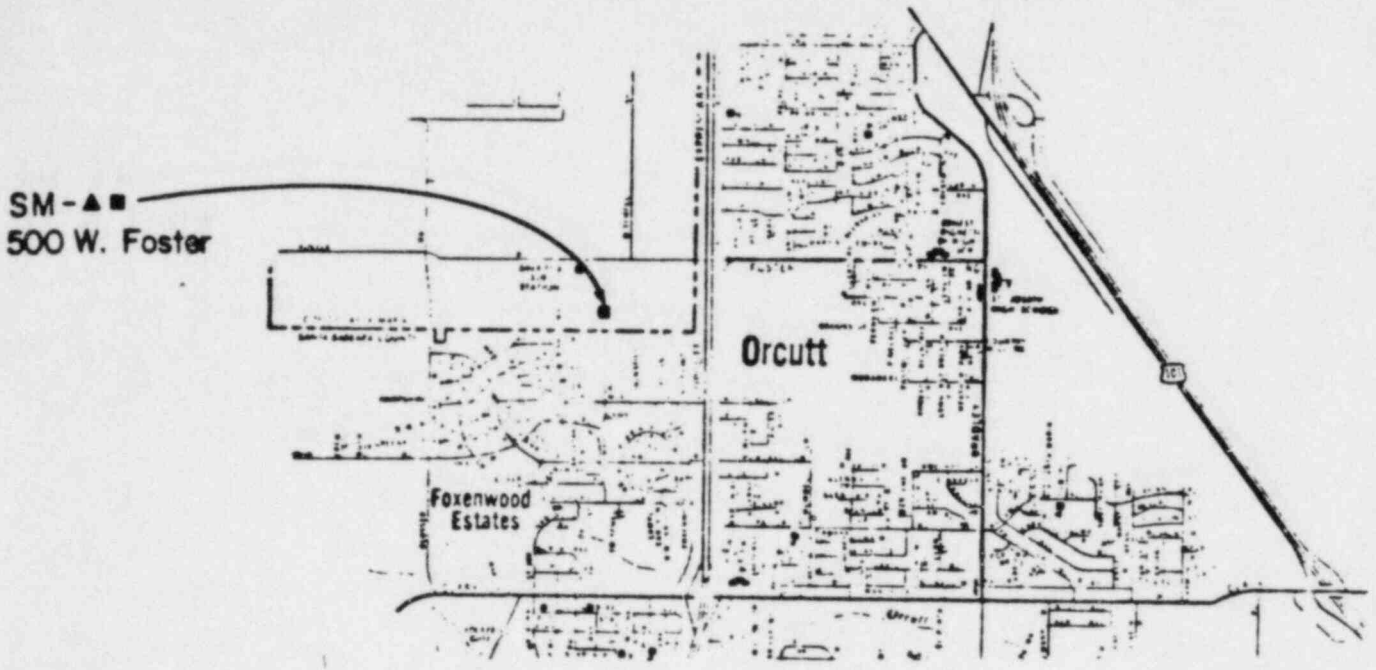
DIABLO CANYON ON-SITE STATIONS

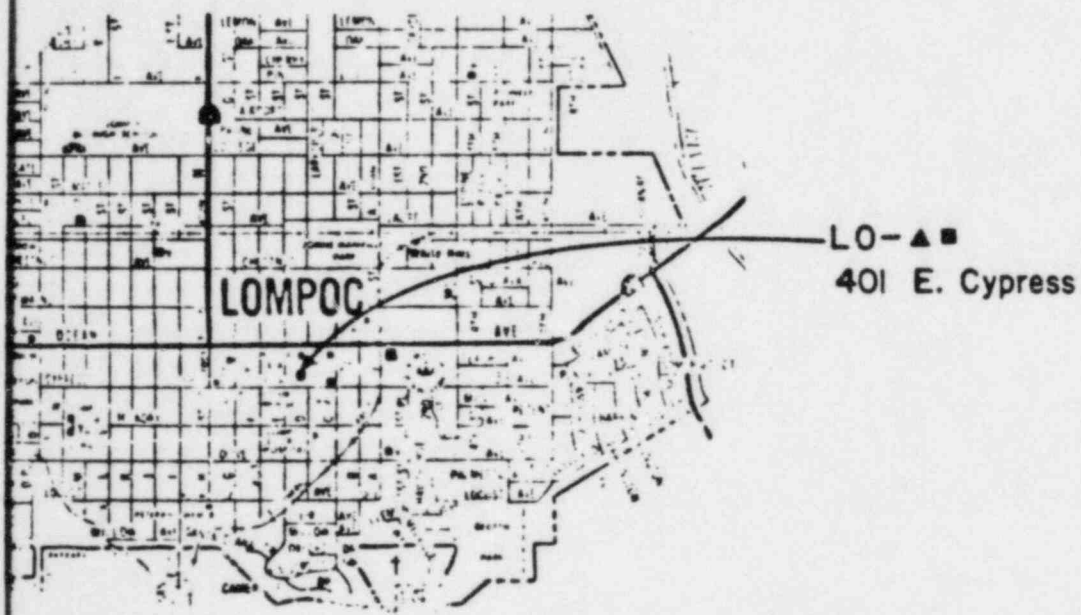
Legend:

▲ -Dosimetry Station

■ -Air Particulate Station

● -Biological Station





NTA BARBARA COUNTY STATIONS

Legend:

▲ - Dosimetry Station

■ - Air Particulate Station

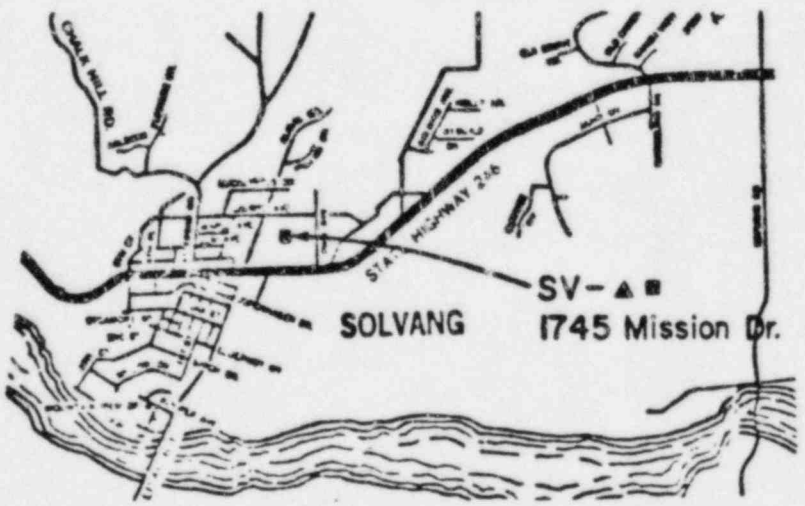
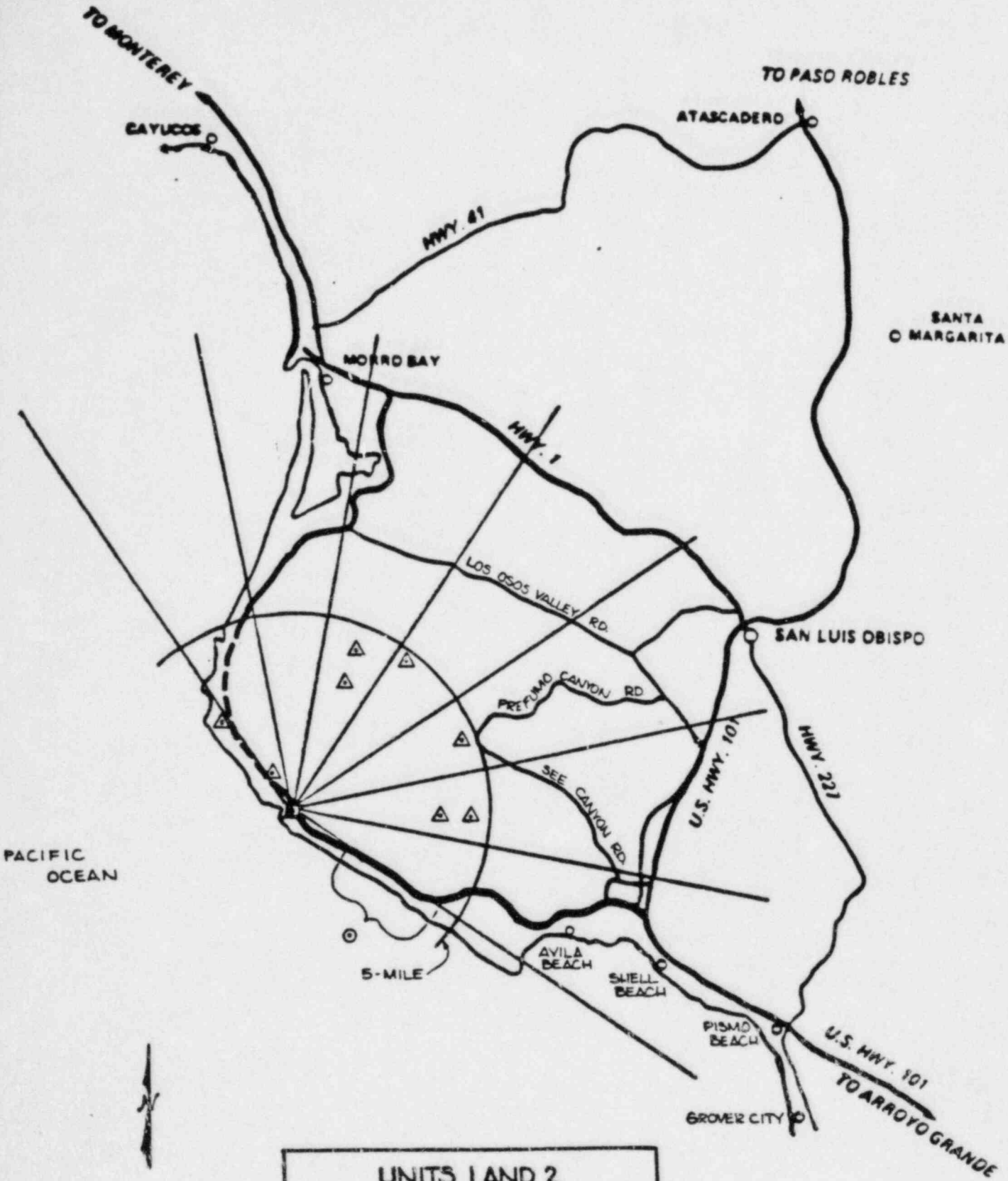


FIGURE 3



UNITS 1 AND 2
DIABLO CANYON SITE

FIGURE 4. LAND USE CENSUS

⊙ GARDENS OR FARM

△ RESIDENCES

REFERENCES

1. Letter to Joseph Ward, Department of Health Services from R. F. Cayot, concerning modifications of environmental radiological program for the Diablo Canyon site, dated June 14, 1979.

2. Environmental Radiation Study in the Vicinity of Diablo Canyon, California, Reports 1-35.

3. 1979 Annual Environmental Radiological Report, Diablo Canyon Power Plant.

4. NRC Branch Technical Position on Environmental Radiation Monitoring, Revision 1 (November 1979).

5. EPA-600/4-78-032 (June 1978), Environmental Radioactivity Laboratory Intercomparison Studies Program 1978-1979.

APPENDIX A

Environmental Radiological Monitoring Program Summaries

TABLE A-1a

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean: Name, Distance and Direction	Location with Highest Annual Mean: Mean(1)(b) Range(b)	Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
Seawater (pCi/liter)	Tritium(2)	315	None detected	Sta.DCM, 0.2 mi, 270°	None detected	-	0
	Gamma Isotopic (4)					-	0
	54Mn	3.1	None detected		None detected		
	59Fe	7.8	None detected		None detected		
	58Co	2.9	None detected		None detected		
	60Co	4.4	None detected		None detected		
	65Zn	6.7	None detected		None detected		
	95Zr	5.7	None detected		None detected		
	95Nb	5.1	None detected		None detected		
	131I	5.3(c)	None detected		None detected		
	134Cs	2.9	None detected		None detected		
	137Cs	3.5	5.6 (1/4)		5.6 (1/4)		
	140Ba	16	None detected		None detected		
	140La	10	None detected		None detected		

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

(c)LLD is higher than Table 4 values due to length of time between sampling and counting.

TABLE A-1b

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Surface Water (pCi/liter)	Gross beta (8)	0.37	3.17(8/8) 1.77-4.60	Sta.DCC, 0.1 mi, 270°	3.56(4/4) 2.53-4.60	-	0
	Tritium(8)	371	None detected	-	None detected	-	0
	Gamma Isotopic(8)			-		-	0
	54Mn	3.9	None detected		None detected		
	59Fe	7.4	None detected		None detected		
	58Co	3.8	None detected		None detected		
	60Co	3.7	None detected		None detected		
	65Zn	9.0	None detected		None detected		
	95Zr	8.7	None detected		None detected		
	95Nb	4.3	None detected		None detected		
	131I	5.3(c)	None detected		None detected		
	134Cs	4.2	None detected		None detected		
	137Cs	4.0	None detected		None detected		
	140Ba	15	None detected		None detected		
	140La	8.3	None detected		None detected		

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

(c)LLD is higher than Table 4 values due to length of time between sampling and counting.

TABLE A-2

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean(c) Name, Distance and Direction	Location with Highest Annual Mean(c) Mean(1)(b) Range(b)	Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
Airborne (pCi/m^3)	131I(368)	0.07	None detected	-	-	Sta.2F2 None detected	0
	Gross Beta (368)	0.005	0.087(318/318) 0.009-0.588	Sta.8S1, 0.5 mi, 125°	0.085(43/43) 0.012-0.490	0.077(50/50) 0.012-0.467	0
	134Cs	0.01	None detected	-	-	None detected	0
	137Cs	0.01	None detected	-	-	None detected	0

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

(c)SM, SV, and LO stations were not monitored during the entire year. The calculated mean for each of these stations is unusually high due to the nuclear weapon test in October; therefore, they were not considered when determining the location with the highest annual mean gross beta count.

TABLE A-3

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Fish and Seafood (pCi/kg wet)	Gamma Isotopic(30)			Sta.DCM, 0.2 mi, 270°		Sta.2F1, 10.9 mi, 0°	0
	54Mn	74	None detected		-	None detected	
	59Fe	156	None detected		-	None detected	
	58Co	75	None detected		-	None detected	
	60Co	71	None detected		-	None detected	
	65Zn	147	None detected		-	None detected	
	134Cs	76	None detected		-	None detected	
	137Cs	76	12.5(4/21) 10-14		12.5(4/21) 10-14	24.0(7/9) 7.3-33	

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

TABLE A-4

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Milk (pCi/liter)	131I(23)	0.20	None detected	-	-	None detected	0
	Gamma Isotopic(23)			Sta.7G3, 17.9 mi, 122°		Sta.5F2, 12.6 mi, 60°	0
	134Cs	4.8	1.1 (1/12)		1.1 (1/12)	None detected	
	137Cs	4.9	2.5 (1/12)		2.5 (1/12)	2.4 (1/11)	
	140Ba	19	None detected	-	-	None detected	
	140La	14	None detected	-	-	None detected	

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

TABLE A-5

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Food Products (pCi/kg wet)	Gamma Isotopic(12)					Sta.5F2, 12.6 mi, 60°	0
	131I	53	None detected	-	-	None detected	
	134Cs	6.0	None detected	-	-	None detected	
	137Cs	6.2	None detected	-	-	None detected	

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

TABLE A-6

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Sediment (pCi/kg dry)	Gamma Isotopic(4)			Sta.DCM, 0.2 mi, 270°		-	0
	134Cs	26	None detected		-		
	137Cs	25	46 (1/4)		46 (1/4)		

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

TABLE A-7

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323

Location of Facility San Luis Obispo, California (County, State) Reporting Period 1/1/80-12/31/80

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Direct Radiation(mR)	TLD Packets (330)	1 mR/mo	76.8(306/306) 51.0-104.5 mR/yr	Sta.3S1, 0.4 mi, 23°	8.71(8/8) 6.4-11.2 mR/mo	Sta.2F2 and 4D1 58.7(24/24) 55.2-62.3 mR/yr	0

(a)Calculated Lower Limit of Detection (LLD). The value reported is the highest LLD calculated for any of the summarized samples.

(b)Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (1).

TABLE A-8

Diablo Canyon Power Plant 1980 Annual Report
EPA Environmental Radiological Laboratory Intercomparison Studies Program

Sample Type	Radionuclide	Date	Results[1/] EPA Known Value ± Expected Precision( )	Results[1/] DER Average Value ± Experimental Precision( )
Diet	I-131	7/11/80	54±5	53±3
		11/10/80	34±5	28±1
	Cs-137	7/11/80	27±5	30±1
		11/10/80	12±5	14±1
	K	7/11/80	2660±130	3043±51
		11/10/80	3100±150	2860±30
Milk	I-131	1/25/80	0.01±0.1	<10
		4/25/80	33±5	36±13
		7/25/80	0	<5
		10/31/80	18±5	24±3
	Cs-137	1/25/80	40±5	38±3
		4/25/80	28±5	25±1
		7/25/80	35±5	43±1
		10/31/80	21±5	27±1
	K	1/25/80	1600±80	1523±6
		4/25/80	1190±60	923±53
		7/25/80	1550±78	1867±40
		10/31/80	1620±81	1930±30
Air Particulates	Alpha	3/28/80	15±5	20±1
		6/27/80	24±6	29±2
		9/26/80	24±6	27.3±0.6
		12/19/80	*	24.7±0.6
	Beta	3/28/80	41±5	45±1
		6/27/80	28±5	35±2
		9/26/80	10±5	18.3±0.6
		12/19/80	*	27±0

1/ Only radionuclides contained in the sample are reported on this table. DER reported values for all radionuclides added to these samples by the EPA and did not report values for any radionuclides not added.

2/ DER values recorded are the average of the three results submitted plus or minus the experimental sigma (1 sigma).

*Known values not yet received from the EPA.

TABLE A-8 - contd.

Sample Type	Radionuclide	Date	Results EPA Known Value ± Expected Precision( )	Results DER Average Value ± Experimental Precision( )
Water	H-3	2/8/80	1750±341	1550±72
		4/11/80	3400±360	3491±93
		8/15/80	1210±329	1347±101
		10/10/80	3200±360	3113±38
		12/26/80	2240±350	2223±70
	I-131	4/4/80	44±5	44±2
	Cr-51	2/1/80	101±5	101±9
		6/6/80	13±5	15±2
		10/3/80	86±5	92±6
	Co-60	2/1/80	11±5	11±1
		6/6/80	5±5	6±1
		10/3/80	16±5	17±0
	Zn-65	2/1/80	25±5	27±2
		6/6/80	23±5	27±1
		10/3/80	25±5	28±2
	Ru-106	2/1/80	51±5	46±8
		6/6/80	37±5	37±1
		10/3/80	46±5	47±3
	Cs-134	2/1/80	10±5	9±1
		6/6/80	11±5	10±1
		10/3/80	20±5	<18
	Cs-137	2/1/80	30±5	31±2
		6/6/80	17±5	19±1
		10/3/80	12±5	15±1
	Alpha	3/21/80	13±5	14±2
		7/18/80	36±9	31±4
	Beta	3/21/80	22±5	17±1
		7/18/80	38±5	41±3

APPENDIX B

Analytical Results of Individual Samples

TABLE B-1

Diablo Canyon Power Plant 1980 Annual Report
Water Samples, Collected 1980 (pCi/l)

Sample (Station No.)	Date Collected	Gross Beta	3H	54Mn	59Fe	58Co	60Co	65Zn	95Zr	95Nb	131I	134Cs	137Cs	140Ba	140La	Others
80067 (DCM) Seawater	2/19/80	NA	<315	<1.1	<2.3	<1.1	<1.1	<2.4	<2.4	<1.1	<1.5	<1.1	<1.2	<3.3	<2.4	-
80068 (5S2) Surface Water	2/19/80	4.17± 0.34	<315	<3.9	<7.1	<3.8	<3.5	<9.0	<8.7	<4.3	<5.3	<4.2	<4.0	<11	<7.6	-
80069 (DCC) Surface Water	2/19/80	4.60± 0.37	<316	<3.4	<6.9	<3.7	<3.6	<8.0	<8.2	<3.9	<4.9	<3.2	<3.9	<12	<8.3	-
80262 (DCM) Seawater	5/13/80	NA	NA	<1.8	<3.6	<1.8	<2.0	<4.1	<4.5	<2.0	<2.8	<2.0	<2.1	<5.8	<10.0	7Be= 9.8±8.2
80263 (5S2) Surface Water	5/13/80	1.77± 0.17	<368	<1.7	<3.2	<1.8	<1.9	<3.3	<3.8	<1.9	<1.9	<2.0	<1.8	<4.8	<3.6	-
80264 (DCC) Surface Water	5/13/80	4.27± 0.37	<3	<3.3	<7.4	<2.9	<3.1	<8.7	<8.2	<3.6	<4.2	<3.5	<3.9	<9.3	<7.4	-
80479 (DCM) Seawater	8/4/80	NA	<171	<3.1	<7.8	<2.9	<3.4	<6.7	<5.7	<5.1	<5.3	<2.9	<3.5	<15.9	<5.2	-
80481 (5S2) Surface Water	8/4/80	2.49± 0.21	<173	<1.0	<4.0	<1.2	<1.1	<2.2	<2.9	<1.9	<2.5	<1.0	<1.8	<6.0	<1.8	-
80482 (DCC) Surface Water	8/4/80	2.84± 0.24	<171	<2.9	<4.6	<2.2	<1.9	<4.0	<3.5	<2.2	<4.4	<2.0	<2.4	<15.4	<4.3	-
80712 (DCM) Seawater	11/3/80	NA	NA	<2.2	<4.3	<2.2	<4.4	<4.7	<4.7	<1.9	<3.1	<2.3	5.6± 2.7	<9.3	<2.9	-
80713 (DCC) Surface Water	11/3/80	2.53± 0.28	<226	<0.8	<1.6	<1.6	<1.2	<1.8	<1.5	<0.9	<1.1	<0.9	<1.0	<3.5	<1.1	-
80714 (5S2) Surface Water	11/3/80	2.65± 0.27	<226	<1.7	<5.2	<3.2	<3.7	<3.1	<3.1	<1.7	<2.1	<1.6	<1.7	<6.6	<1.9	-

TABLE B-2

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station MT1 (pCi/m**3), First Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80005	485	1/8/80	1/11/80	0.035±0.003	1/
80019	556	1/17/80	1/22/80	0.011±0.001	
80026	297	1/22/80	1/28/80	0.032±0.003	
80037	384	1/28/80	2/4/80	0.057±0.004	
80042	474	2/5/80	2/8/80	0.044±0.004	
80055	380	2/11/80	2/15/80	0.040±0.003	
80070	537	2/20/80	2/25/80	0.025±0.002	
80080	323	2/25/80	2/29/80	0.018±0.002	
80111	470	3/4/80	3/10/80	0.019±0.002	
80123	385	3/10/80	3/17/80	0.017±0.002	
80144	426	3/17/80	3/24/80	0.028±0.002	
80169	431	3/24/80	3/27/80	0.024±0.002	
80182	481	4/1/80	4/7/80	0.025±0.002	
Quarterly Composite		12/31/79-4/1/80	4/8/80	^{7}Be = 0.166±0.014 $^{134,137}Cs$ = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station MT1 (pCi/m**3), Second Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80192	394	4/7/80	4/11/80	0.040±0.003	1/
80220	595	4/17/80	4/22/80	0.049±0.003	
80232	255	4/21/80	4/29/80	0.040±0.003	
80240	433	4/28/80	5/9/80	0.030±0.002	
80252	397	5/5/80	5/14/80	0.034±0.003	
80265	474	5/13/80	5/16/80	0.016±0.001	
80295	441	5/20/80	5/28/80	0.027±0.002	
80307	428	5/27/80	6/2/80	0.015±0.001	
80335	358	6/2/80	6/9/80	0.023±0.002	
80345	438	6/9/80	6/16/80	0.012±0.001	
80357	549	6/18/80	6/25/80	0.017±0.001	
80379	310	6/23/80	6/26/80	0.018±0.002	
80395	427	6/30/80	7/8/80	0.025±0.002	
Quarterly Composite		4/1/80-6/30/80	7/21/80	7Be = 0.077±0.003 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station MT1 (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80406	427	7/7/80	7/10/80	0.017±0.001	1/
80420	428	7/14/80	7/21/80	0.017±0.002	
80438	424	7/21/80	7/31/80	0.016±0.001	
80456	432	7/28/80	8/7/80	0.018±0.001	
80483	411	8/4/80	8/11/80	0.022±0.002	
80498	434	8/11/80	8/18/80	0.024±0.002	
80543	552	8/20/80	8/27/80	0.019±0.001	
80551	309	8/25/80	9/2/80	0.027±0.002	
80579	490	9/2/80	9/8/80	0.019±0.002	
80588	366	9/8/80	9/12/80	0.017±0.001	
80611	493	9/16/80	9/21/80	0.021±0.002	
80627	370	9/22/80	9/29/80	0.027±0.002	
80640	537	10/1/80	10/7/80	0.039±0.003	
Quarterly Composite		6/30/80-10/1/80	10/20/80	7Be = 0.059±0.001 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station MT1 (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80655	316	10/6/80	10/20/80	0.047±0.004	1/
80665	430	10/13/80	10/21/80	0.039±0.003	
80682	480	10/21/80	10/27/80	0.055±0.004	
80697	373	10/27/80	10/31/80	0.081±0.006	
80716	478	11/4/80	11/10/80	0.205±0.010	
80727	368	11/10/80	11/13/80	0.176±0.012	
80746	430	11/17/80	11/20/80	0.215±0.014	
80789	444	11/24/80	12/2/80	0.252±0.016	
80820	479	12/2/80	12/12/80	0.313±0.020	
80831	366	12/8/80	12/15/80	0.205±0.014	
80851	422	12/15/80	2/2/81	0.269±0.012	
80874	435	12/22/80	1/5/81	0.352±0.023	
80885	483	12/30/80	1/6/81	0.423±0.027	
Quarterly Composite		10/1/80-12/30/80	1/9/81	7Be = 0.144±0.001 134,137Cs = <0.01 103Ru = 0.024±0.0002 140Ba = 0.014±0.002 95Zr = 0.018±0.0002 140La = 0.011±0.0007	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 2F2 (pCi/m**3), First Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80008	428	1/9/80	1/11/80	0.040±0.003	1/
80016	428	1/16/80	1/22/80	0.012±0.001	
80031	428	1/23/80	1/28/80	0.033±0.002	
80046	855	2/6/80	2/11/80	0.049±0.003	
80060	440	2/13/80	2/19/80	0.044±0.002	
80071	415	2/20/80	2/25/80	0.016±0.002	
80100	428	2/27/80	3/3/80	0.020±0.001	
80122	856	3/12/80	3/17/80	0.016±0.001	
80149	428	3/19/80	3/24/80	0.027±0.002	
80174	428	3/26/80	3/31/80	0.021±0.002	
80180	428	4/2/80	4/7/80	0.021±0.002	
Quarterly Composite		1/2/80-4/2/80	4/18/80	7Be = 0.131±0.009 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 2F2 (pCi/m**3), Second Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80200	428	4/9/80	4/15/80	0.041±0.003	1/
80219	429	4/16/80	4/22/80	0.045±0.003	
80237	427	4/23/80	5/1/80	0.026±0.002	
80245	426	4/30/80	5/13/80	0.032±0.002	
80257	427	5/7/80	5/16/80	0.029±0.002	
80275	428	5/14/80	5/19/80	0.018±0.002	
80296	428	5/21/80	5/28/80	0.026±0.002	
80304	428	5/28/80	6/2/80	0.017±0.001	
80340	428	6/4/80	6/9/80	0.022±0.002	
80350	435	6/11/80	6/16/80	0.012±0.001	
80356	421	6/18/80	6/25/80	0.018±0.001	
80384	428	6/25/80	6/30/80	0.019±0.002	
80396	428	7/2/80	7/8/80	0.023±0.002	
Quarterly Composite		4/2/80-7/2/80	7/21/80	7Be = 0.066±0.007 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 2F2 (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80411	428	7/9/80	7/18/80	0.018±0.001	1/
80427	427	7/16/80	7/24/80	0.012±0.001	
80444	430	7/23/80	8/4/80	0.018±0.001	
80457	426	7/30/80	8/7/80	0.015±0.001	
80489	428	8/6/80	8/14/80	0.021±0.002	
80533	430	8/13/80	8/19/80	0.021±0.002	
80542	426	8/20/80	8/23/80	0.014±0.001	
80560	429	8/27/80	9/4/80	0.025±0.002	
80584	427	9/3/80	9/10/80	0.016±0.001	
80601	427	9/10/80	9/16/80	0.015±0.001	
80616	428	9/17/80	9/21/80	0.030±0.002	
80631	428	9/24/80	9/29/80	0.021±0.002	
80645	428	10/1/80	10/7/80	0.036±0.003	
Quarterly Composite		7/2/80-10/1/80	10/21/80	7Be = 0.061±0.001 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 2F2 (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80660	428	10/8/80	10/20/80	0.047±0.003	1/
80672	428	10/15/80	10/21/80	0.032±0.002	
80683	428	10/22/80	10/27/80	0.069±0.005	
80702	428	10/29/80	11/4/80	0.089±0.006	
80723	493	11/6/80	11/12/80	0.190±0.012	
80739	364	11/12/80	11/19/80	0.110±0.007	
80775	428	11/19/80	12/1/80	0.241±0.016	
80808	428	11/26/80	12/3/80	0.247±0.016	
80826	439	12/3/80	12/13/80	0.440±0.028	
80840	418	12/10/80	12/16/80	0.264±0.017	
80858	430	12/17/80	12/22/80	0.400±0.026	
80873	426	12/24/80	12/30/80	0.376±0.024	
80899	856	1/7/81	1/15/81	0.467±0.030	
Quarterly Composite		10/1/80-1/7/81	1/16/81	7Be = 0.129±0.002 134,137Cs = <0.01 103Ru = 0.024±0.0003 140Ba = 0.011±0.003 106Ru = 0.002±0.0007 95Zr = 0.024±0.0003 140La = 0.008±0.0009	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 5F1 (pCi/m**3), First Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80006	479	1/8/80	1/11/80	0.040±0.003	1/
80020	556	1/17/80	1/22/80	0.011±0.001	
80027	297	1/22/80	1/28/80	0.026±0.003	
80038	387	1/28/80	2/4/80	0.038±0.003	
80043	470	2/5/80	2/8/80	0.049±0.004	
80056	368	2/11/80	2/15/80	0.034±0.003	
80072	532	2/20/80	2/25/80	0.021±0.002	
80081	327	2/25/80	2/29/80	0.013±0.001	
80112	464	3/4/80	3/10/80	0.018±0.002	
80124	389	3/10/80	3/18/80	0.014±0.001	
80145	467	3/18/80	3/24/80	0.027±0.002	
80170	389	3/24/80	3/27/80	0.018±0.002	
80183	469	4/1/80	4/7/80	0.023±0.002	
Quarterly Composite		12/31/79-4/1/80	4/9/80	7Be = 0.121±0.012 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 5F1 (pCi/m**3), Second Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80193	385	4/7/80	4/11/80	0.030±0.003	1/
80221	590	4/17/80	4/22/80	0.042±0.003	
80233	263	4/21/80	4/29/80	0.030±0.003	
80241	432	4/28/80	5/9/80	0.026±0.002	
80253	427	5/5/80	5/14/80	0.023±0.002	
80266	467	5/13/80	5/16/80	0.015±0.002	
80297	446	5/20/80	5/28/80	0.020±0.002	
80308	434	5/27/80	6/2/80	0.018±0.001	
80336	356	6/2/80	6/11/80	0.023±0.002	
80346	434	6/9/80	6/16/80	0.012±0.001	
80358	549	6/18/80	6/25/80	0.017±0.001	
80380	308	6/23/80	6/26/80	0.020±0.002	
2/	-	6/30/80	-	-	
Quarterly Composite		4/1/80-6/23/80	7/22/80	7Be = 0.066±0.003 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/No sample collected due to mechanical failure.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 5F1 (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80407	422	7/7/80	7/10/80	0.012±0.001	1/
80421	428	7/14/80	7/21/80	0.017±0.001	
80439	424	7/21/80	7/31/80	0.015±0.001	
80458	431	7/28/80	8/7/80	0.018±0.001	
80484	418	8/4/80	8/14/80	0.024±0.002	
80499	429	8/11/80	8/18/80	0.020±0.002	
80544	548	8/20/80	8/27/80	0.019±0.001	
80552	309	8/25/80	9/2/80	0.028±0.002	
80580	495	9/2/80	9/8/80	0.021±0.002	
80589	361	9/8/80	9/12/80	0.020±0.002	
80612	493	9/16/80	9/21/80	0.024±0.002	
80625	369	9/22/80	9/29/80	0.026±0.002	
80639	548	10/1/80	10/7/80	0.043±0.005	
Quarterly Composite		6/30/80-10/1/80	10/21/80	7Be = 0.060±0.005 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 5F1 (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80656 2/	-	10/6/80	-	-	1/
80666	427	10/13/80	10/21/80	0.046±0.003	
80684	529	10/22/80	10/27/80	0.064±0.004	
80698	324	10/27/80	10/31/80	0.037±0.003	
80718	480	11/4/80	11/10/80	0.202±0.013	
80728	361	11/10/80	11/13/80	0.227±0.015	
80747	429	11/17/80	11/20/80	0.203±0.013	
80790	449	11/24/80	12/3/80	0.251±0.016	
80821	469	12/2/80	12/12/809	0.207±0.019	
80832	383	12/8/80	12/15/80	0.103±0.007	
80852	428	12/15/80	12/19/80	0.410±0.026	
80875	418	12/22/80	1/5/81	0.411±0.026	
80886	491	12/30/80	1/6/81	0.463±0.029	
Quarterly Composite		10/1/80-12/30/80	1/12/81	7Be = 0.133±0.003 134,137Cs = <0.01 103Ru = 0.025±0.0006 95Zr = 0.018±0.0006 54Mn = 0.0003±0.0001 140La = 0.007±0.002	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/No sample collected due to mechanical failure.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 7D1 (pCi/m**3), First Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80007	486	1/8/80	1/11/80	0.033±0.003	1/
80021	556	1/17/80	1/22/80	0.010±0.001	
80028	297	1/22/80	1/28/80	0.022±0.002	
80039	385	1/28/80	2/4/80	0.044±0.004	
80044	472	2/5/80	2/11/80	0.031±0.003	
80057	382	2/11/80	2/15/80	0.032±0.003	
80073	529	2/20/80	2/25/80	0.017±0.002	
80082	322	2/25/80	3/3/80	0.014±0.001	
80113	468	3/4/80	3/10/80	0.017±0.001	
80125	387	3/10/80	3/18/80	0.014±0.001	
80146	427	3/17/80	3/24/80	0.019±0.002	
80171	428	3/24/80	3/27/80	0.019±0.001	
80184	469	4/1/80	4/7/80	0.022±0.002	
Quarterly Composite		12/31/79-4/1/80	4/11/80	7Be = 0.119±0.011 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 7D1 (pCi/m**3), Second Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80194	381	4/7/80	4/14/80	0.027±0.003	1/
80222	592	4/17/80	4/22/80	0.040±0.003	
80234	258	4/21/80	4/29/80	0.029±0.003	
80242	433	4/28/80	5/11/80	0.023±0.002	
80254	427	5/5/80	5/16/80	0.028±0.002	
2/	-	5/13/80	-	-	
80298	443	5/20/80	5/28/80	0.029±0.002	
80309	434	5/27/80	6/2/80	0.017±0.002	
80337	353	6/2/80	6/11/80	0.024±0.002	
80347	436	6/9/80	6/16/80	0.015±0.001	
80359	549	6/18/80	6/25/80	0.022±0.002	
80381	309	6/23/80	6/26/80	0.022±0.002	
80397	427	6/30/80	7/8/80	0.027±0.002	
Quarterly Composite		4/1/80-6/30/80	7/22/80	7Be = 0.071±0.007 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Sample not collected due to mechanical failure.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 7D1 (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80408	427	7/7/80	7/18/80	0.023±0.002	1/
80422	428	7/14/89	7/21/80	0.017±0.001	
80440	424	7/21/80	7/31/80	0.019±0.002	
80459	431	7/28/80	8/7/80	0.016±0.001	
80485	415	8/4/80	8/14/80	0.029±0.002	
80500	429	8/11/80	8/19/80	0.024±0.002	
80545	551	8/20/80	8/27/80	0.018±0.001	
80553	309	8/25/80	9/2/80	0.029±0.002	
80581	493	9/2/80	9/8/80	0.021±0.002	
80590	363	9/8/80	9/12/80	0.019±0.002	
80613	492	9/16/80	9/21/80	0.025±0.002	
80628	370	9/22/80	9/29/80	0.025±0.002	
80638	510	10/1/80	10/6/80	0.047±0.003	
Quarterly Composite		6/30/80-10/1/80	10/21/80	7Be = 0.058±0.004 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 7D1 (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80657	323	10/6/80	10/20/80	0.047±0.004	1/
80667	426	10/13/80	10/20/80	0.032±0.003	
80685	531	10/22/80	10/27/80	0.062±0.004	
80699	321	10/27/80	11/4/80	0.080±0.006	
80720	477	11/4/80	11/10/80	0.192±0.012	
80729	369	11/10/80	11/13/80	0.177±0.012	
80748	425	11/17/80	11/20/80	0.211±0.014	
80791	447	11/24/80	12/3/80	0.254±0.016	
80822	475	12/2/80	12/13/80	0.253±0.017	
80833	369	12/8/80	12/15/80	0.173±0.016	
80855	439	12/15/80	12/19/80	0.450±0.029	
80876	418	12/22/80	12/30/80	0.328±0.021	
80887	478	12/30/80	1/6/81	0.416±0.027	
Quarterly Composite		10/1/80-12/30/80	1/12/81	7Be = 0.124±0.003 134,137Cs = <0.01 103Ru = 0.021+0.0004 95Zr = 0.015±0.0005	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 8S1 (pCi/m**3), First Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80074	99	2/20/80	2/25/80	0.044±0.005	1/
80126	441	3/10/80	3/18/80	0.014±0.001	
80147	427	3/17/80	3/24/80	0.027±0.002	
80172	429	3/24/80	3/27/80	0.019±0.002	
80185	482	4/1/80	4/7/80	0.025±0.002	
Quarterly Composite 2/		2/12/80-4/1/80	4/14/80	7Be = 0.130±0.017 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Airborne radioactivity measurements for this station were begun on 2/12/80.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 8S1 (pCi/m**3), Second Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80195	372	4/7/80	4/14/80	0.031±0.003	1/
80223	594	4/17/80	4/23/80	0.045±0.004	
80235	257	4/21/80	4/29/80	0.035±0.003	
80243	433	4/28/80	5/11/80	0.027±0.002	
80255	426	5/5/80	5/16/80	0.032±0.002	
80268	473	5/13/80	5/22/80	0.016±0.001	
80299	442	5/20/80	5/28/80	0.024±0.002	
80310	428	5/27/80	6/2/80	0.020±0.002	
80338	359	6/2/80	6/11/80	0.021±0.002	
80348	437	6/9/80	6/16/80	0.012±0.001	
80360	549	6/18/80	6/26/80	0.016±0.001	
80382	309	6/23/80	6/26/80	0.023±0.002	
80398	427	6/30/80	7/8/80	0.021±0.002	
Quarterly Composite		4/1/80-6/30/80	7/25/80	7Be = 0.075±0.003 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 8S1 (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80409	427	7/7/80	7/18/80	0.021±0.002	1/
80423	428	7/14/80	7/24/80	0.016±0.001	
80441	424	7/21/80	7/31/80	0.015±0.001	
80460	432	7/28/80	8/11/80	0.017±0.001	
80486	407	8/4/80	8/14/80	0.026±0.002	
80501	432	8/11/80	8/19/80	0.021±0.002	
80546	551	8/20/80	8/27/80	0.016±0.001	
80554	308	8/25/80	9/2/80	0.027±0.002	
80582	491	9/2/80	9/10/80	0.019±0.001	
80591	363	9/8/80	9/12/80	0.017±0.001	
80614	481	9/16/80	9/21/80	0.023±0.002	
2/	-	9/22/80	-	-	
80637	543	10/1/80	10/6/80	0.030±0.002	
Quarterly Composite		6/30/80-10/1/80	10/24/80	7Be = 0.055±0.002 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Sample not collected due to mechanical failure.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station 8S1 (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80658	301	10/6/80	10/20/80	0.044±0.004	1/
80668	426	10/13/80	10/21/80	0.045±0.003	
80686	457	10/21/80	10/27/80	0.054±0.004	
80701	371	10/27/80	11/5/80	0.092±0.006	
80719	454	11/4/80	11/10/80	0.199±0.013	
80730	370	11/10/80	11/13/80	0.186±0.012	
80749	425	11/17/80	11/20/80	0.214±0.014	
80792	443	11/24/80	12/3/80	0.260±0.017	
80823	479	12/2/80	12/13/80	0.300±0.019	
80834	365	12/8/80	12/15/80	0.173±0.012	
80853	422	12/15/80	12/19/80	0.456±0.029	
80878	434	12/22/80	12/30/80	0.448±0.029	
80889	486	12/30/80	1/6/81	0.490±0.031	
Quarterly Composite		10/1/80-12/30/80	1/12/81	7Be = 0.123±0.002 134,137Cs = <0.01 103Ru = 0.018±0.0002 140Ba = 0.013±0.003 95Zr = 0.015±0.0002 140La = 0.006±0.001	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station OS2 (pCi/m**3), First Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80127	441	3/10/80	3/18/80	0.013±0.001	1/
80148	423	3/17/80	3/24/80	0.029±0.002	
80173	432	3/24/80	3/31/80	0.019±0.002	
80186	481	4/1/80	4/7/80	0.022±0.002	
Quarterly Composite 2/		3/3/80-4/1/80	4/14/80	7Be = 0.117±0.011 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Airborne radioactivity measurements for this station were begun on 3/3/80.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station OS2 (pCi/m**3), Second Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80196	373	4/7/80	4/14/80	0.033±0.002	1/
80224	594	4/17/80	4/23/80	0.047±0.004	
80236	256	4/21/80	5/1/80	0.034±0.003	
80244	433	4/28/80	5/13/80	0.028±0.002	
80256	427	5/5/80	5/16/80	0.034±0.003	
80267	473	5/13/80	5/19/80	0.017±0.002	
80300	441	5/20/80	5/29/80	0.024±0.002	
80311	428	5/27/80	6/2/80	0.021±0.002	
80339	359	6/2/80	6/11/80	0.024±0.002	
80349	438	6/9/80	6/16/80	0.009±0.001	
80361	548	6/18/80	6/26/80	0.015±0.001	
80383	310	6/23/80	6/30/80	0.020±0.002	
80399	427	6/30/80	7/8/80	0.019±0.002	
Quarterly Composite		4/1/80-6/30/80	7/25/80	7Be = 0.060±0.009 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station OS2 (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80410	427	7/7/80	7/18/80	0.017±0.001	1/
80424	428	7/14/80	7/24/80	0.011±0.001	
80442	424	7/21/80	7/31/80	0.016±0.001	
80461	432	7/28/80	8/11/80	0.013±0.001	
80487	410	8/4/80	8/14/80	0.026±0.002	
80502	433	8/11/80	8/19/80	0.021±0.002	
80547	552	8/20/80	8/27/80	0.017±0.001	
80555	308	8/25/80	9/4/80	0.024±0.002	
80583	491	9/2/80	9/10/80	0.018±0.001	
80592	366	9/8/80	9/12/80	0.016±0.001	
80615	493	9/16/80	9/21/80	0.021±0.002	
80624	370	9/20/80	9/26/80	0.023±0.002	
80636	544	10/1/80	10/6/80	0.034±0.002	
Quarterly Composite		6/30/80-10/1/80	10/24/80	7Be = 0.048±0.005 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station OS2 (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80659	303	10/6/80	10/20/80	0.067±0.005	1/
80669	431	10/13/80	10/22/80	0.046±0.003	
00687	456	10/21/80	10/27/80	0.050±0.004	
80700	373	10/27/80	11/14/80	0.086±0.006	
80717	455	11/4/80	11/10/80	0.148±0.010	
80731	370	11/10/80	11/13/80	0.182±0.012	
80750	429	11/17/80	11/20/80	0.200±0.013	
80793	445	11/24/80	12/3/80	0.250±0.016	
80824	481	12/2/80	12/13/80	0.271±0.018	
80835	364	12/8/80	12/17/80	0.160±0.011	
80854	423	12/15/80	12/19/80	0.453±0.029	
80877	432	12/22/80	12/30/80	0.387±0.025	
80888	487	12/30/80	1/6/81	0.437±0.028	
Quarterly Composite		10/1/80-12/30/80	1/13/81	7Be = 0.126±0.002 134,137Cs = <0.01 103Ru = 0.022±0.003 140Ba = 0.011±0.003 95Zr = 0.016±0.0003 54Mn = 0.0002±0.00007 140La = 0.010±0.001	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station SM (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80402	672	7/7/80	7/10/80	0.023±0.002	1/
80417	242	7/11/80	7/21/80	0.022±0.002	
80449	365	7/24/80	8/4/80	0.022±0.002	
80462	424	7/31/80	8/11/80	0.025±0.002	
80494	432	8/7/80	8/18/80	0.025±0.002	
80536	427	8/14/80	8/23/80	0.025±0.002	
80548	482	8/22/80	8/27/80	0.023±0.002	
80564	367	8/28/80	9/4/80	0.029±0.002	
80585	428	9/4/80	9/10/80	0.023±0.002	
80606	430	9/11/80	9/16/80	0.022±0.002	
80621	425	9/18/80	9/26/80	0.035±0.003	
80633	428	9/25/80	10/6/80	0.035±0.004	
80649	428	10/2/80	10/9/80	0.063±0.004	
Quarterly Composite 2/		6/26/80-10/2/80	10/27/80	7Be = 0.079±0.004 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Airborne radioactivity measurements for this station were begun on 6/26/80.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station SM (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80661	429	10/9/80	10/20/80	0.059±0.004	1/
80673	422	10/16/80	10/22/80	0.027±0.002	
80694	429	10/23/80	10/31/80	0.065±0.006	
80707	428	10/30/80	11/5/80	0.093±0.006	
80725	426	11/6/80	11/12/80	0.198±0.013	
80743	428	11/13/80	11/19/80	0.145±0.010	
80777	427	11/20/80	12/1/80	0.285±0.018	
80812	366	11/26/80	12/12/80	0.207±0.014	
80836	429	12/3/80	12/15/80	0.268±0.017	
80844	489	12/11/80	12/16/80	0.277±0.018	
80862	489	12/19/80	12/22/80	0.355±0.023	
80882	427	12/26/80	1/5/81	0.356±0.023	
80896	426	1/2/81	1/7/81	0.316±0.020	
Quarterly Composite		10/2/80-1/2/81	1/15/81	7Be = 0.111±0.003 134,137Cs = <0.01 103Ru = 0.020±0.0005 95Zr = 0.015±0.0005 54Mn = 0.0003±0.0001 140La = 0.006±0.002	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station SV (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80403	431	7/3/80	7/10/80	0.031±0.002	1/
80418	420	7/10/80	7/21/80	0.022±0.002	
80431	445	7/17/80	7/24/80	0.019±0.002	
80450	418	7/24/80	8/4/80	0.022±0.002	
80463	425	7/31/80	8/11/80	0.045±0.003	
80495	416	8/7/80	8/18/80	0.038±0.003	
80537	434	8/14/80	8/23/80	0.031±0.002	
80549	430	8/21/80	9/2/80	0.028±0.002	
80565	426	8/28/80	9/4/80	0.037±0.003	
80586	429	9/4/80	9/10/80	0.025±0.002	
80607	427	9/11/80	9/16/80	0.030±0.002	
80622	441	9/18/80	9/26/80	0.042±0.003	
80632	415	9/25/80	10/6/80	0.046±0.003	
80650	484	10/3/80	10/9/80	0.071±0.005	
Quarterly Composite 2/		6/26/80-10/3/80	10/28/80	^{7}Be = 0.093±0.002 ^{134,137}Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Airborne radioactivity measurements for this station were begun on 6/26/80.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station SV (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80662	373	10/9/80	10/20/80	0.086±0.006	1/
80674	427	10/16/80	10/22/80	0.034±0.003	
80695	426	10/23/80	10/31/80	0.086±0.006	
80706	428	10/30/80	11/5/80	0.095±0.006	
80724 2/	423	11/6/80	11/6/80	-	
80744	419	11/13/80	11/19/80	0.182±0.012	
80778	435	11/20/80	12/1/80	0.306±0.020	
80813	476	11/28/80	12/12/80	0.300±0.019	
80838	377	12/4/80	12/16/80	0.220±0.014	
80845	428	12/11/80	12/17/80	0.371±0.024	
80863	483	12/19/80	12/22/80	0.361±0.023	
80883	405	12/26/80	1/5/81	0.486±0.031	
80897	316	12/31/80	1/7/81	0.588±0.038	
Quarterly Composite		10/3/80-12/31/80	1/15/81	7Be = 0.124±0.003 134,137Cs = <0.01 103Ru = 0.025±0.0005 95Zr = 0.019±0.0005 140La = 0.009±0.002	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Air particulate not collected on filter; analyzed iodine cartridge only.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station LO (pCi/m**3), Third Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80404	406	7/7/80	7/10/80	0.016±0.001	1/
80419	253	7/11/80	7/21/80	0.020±0.002	
80432	414	7/18/80	7/31/80	0.013±0.001	
80451	387	7/24/80	8/4/80	0.019±0.002	
80464	468	8/1/80	8/11/80	0.021±0.002	
80496	369	8/7/80	8/18/80	0.019±0.002	
80538	484	8/15/80	8/23/80	0.020±0.002	
80550	389	8/21/80	9/2/80	0.020±0.002	
80566	428	8/28/80	9/8/80	0.027±0.002	
80587	428	9/4/80	9/10/80	0.018±0.001	
80608	428	9/11/80	9/16/80	0.023±0.002	
80623	467	9/19/80	9/26/80	0.036±0.003	
80634	431	9/26/80	10/6/80	0.041±0.003	
80651	432	10/3/80	10/9/80	0.058±0.004	
Quarterly Composite 2/		6/30/80-10/3/80	10/27/80	7Be = 0.085±0.005 134,137Cs = <0.01	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.
2/Airborne radioactivity measurements for this station were begun on 6/30/80.

TABLE B-2 - contd.

Diablo Canyon Power Plant 1980 Annual Report
Airborne Radioactivity
Station LO (pCi/m**3), Fourth Quarter

Sample Number	Volume (m**3)	Collection Date	Counting Date	Gross Beta Activity	131I
80663	422	10/10/80	10/21/80	0.054±0.004	1/
80675	387	10/16/80	10/23/80	0.027±0.002	
80696	427	10/23/80	10/31/80	0.078±0.005	
80708	472	10/31/80	11/5/80	0.109±0.007	
80726	387	11/6/80	11/12/80	0.192±0.013	
80745	468	11/14/80	11/19/80	0.137±0.009	
80779	427	11/21/80	12/1/80	0.277±0.018	
80825	430	11/28/80	12/12/80	0.204±0.013	
80837	427	12/5/80	12/16/80	0.172±0.011	
80848	430	12/12/80	12/17/80	0.316±0.020	
80864	424	12/19/80	12/22/80	0.385±0.025	
80884	307	12/24/80	1/5/81	0.298±0.019	
80898	448	12/31/80	1/7/81	0.522±0.033	
Quarterly Composite		10/3/80-12/31/80	1/16/81	7Be = 0.117±0.002 134,137Cs = <0.01 103Ru = 0.020±0.0003 95Zr = 0.018±0.0004 140La = 0.006±0.002	

1/Unless specified, Iodine-131 concentrations were determined to be <0.07 pCi/m**3.

TABLE B-3

Diablo Canyon Power Plant 1980 Annual Report
Fish and Seafood Samples, Collected 1980 (pCi/kg wet)

Sample (Station No.)	Date Collected	Ratio Dry/Wet	54Mn	59Fe	58Co	60Co	65Zn	134Cs	137Cs	Others
80078 (DCM) Black Abalone Meat	2/25/80	0.288	<22	<46	<25	<21	<53	<22	<27	-
80079 (DCM) Black Abalone Viscera	2/25/80	0.193	<74	<156	<75	<71	<147	<76	<76	-
80116 (2F1) Commercial Rock Cod	3/5/80	0.173	<11	<36	<13	<11	<29	<10	25.3±7.09	-
80117 (2F1) Commercial Red Snapper	3/5/80	0.214	<3.8	<11	<4.6	<4.5	<11	<3.6	32.7±3.21	-
80152 (DCM) Perch	3/5/80	0.205	<22	<47	<20	<16	<42	<17	<20	-
80153 (7F2) Pismo Clam	3/19/80	0.196	<13	<30	<14	<15	<34	<13	<14	-
80269 (DCM) Black Abalone Meat	5/14/80	0.294	<12	<31	<12	<11	<25	<10	<12	-
80270 (DCM) Black Abalone Viscera	5/14/80	0.222	<32	<80	<36	<30	<67	<32	<33	-
80328 (7F2) Pismo Clams	5/18/80	0.177	<41	<110	<49	<47	<104	<44	<44	-
80329 (2F1) Commercial Red Snapper	5/29/80	0.198	<7.4	<26	<8.9	<7.1	<19	<6.4	7.3±2.1	-
80330 (2F1) Commercial Cod	5/29/80	0.185	<7.3	<24	<9.2	<7.4	<19	<6.1	14±3.4	-

TABLE B-3 - contd.

Sample (Station No.)	Date Collected	Ratio Dry/Wet	54Mn	59Fe	58Co	60Co	65Zn	134Cs	137Cs	Others
80331 (2F1) Commercial Salmon	5/29/80	0.269	<12	<46	<16	<13	<33	<12	<15	-
80371 (DCM) Perch	6/4/80	0.200	<3.2	<7.8	<4.1	<5.8	<8.9	<4.1	14±2.8	-
80372 (DCM) Blue Rockfish	6/4/80	0.215	<10	<29	<11	<11	<19	<6.9	<14	-
80567 (DCM) Perch	8/29/80	0.184	<16	<33	<12	<9.8	<24	<8.4	14±7.8	-
80568 (DCM) Blue Rockfish	8/29/80	0.200	<12	<41	<16	<12	<28	<11	12±9.5	-
80569 (DCM) Red Abalone Meat	8/29/80	0.261	<13	<25	<11	<14	<20	<8.1	<14	-
80570 (DCM) Red Abalone Viscera	8/29/80	0.237	<26	<84	<33	<26	<61	<26	<33	-
80571 (DCM) Black Abalone Meat	8/31/80	0.279	<31	<81	<37	<36	<63	<28	<38	-
80572 (DCM) Black Abalone Viscera	8/31/80	0.222	<8.7	<23	<17	<9.3	<43	<9.3	<11	-
80597 (DCM) Commercial Rock Cod	9/8/80	0.201	<5.8	<16	<10	<11	<21	<5.1	27±4.2	-
80598 (2F1) Commercial Red Snapper	9/8/80	0.226	<11	<20	<11	<9.9	<20	<7.0	<40	-
80735 (2F1) Commercial Rock Cod	11/12/80	0.229	<13	<52	<27	<11	<19	<5.3	33±5.1	-

TABLE B-3 - contd.

Sample (Station No.)	Date Collected	Ratio Dry/Wet	54Mn	59Fe	58Co	60Co	65Zn	134Cs	137Cs	Others
80736 (2F1) Commercial Red Snapper	11/12/80	0.236	<3.0	<22	<6.2	<4.9	<9.1	<2.5	29±2.1	-
80784 (DCM) Red Abalone Meat	11/17/80	0.291	<6.3	<40	<14	<13	<17	<5.6	<12	-
80785 (DCM) Red Abalone Viscera	11/17/80	0.280	<14	<87	<25	<12	<30	<11	<12	-
80786 (DCM) Blue Rockfish	11/19/80	0.290	<16	<67	<18	<13	<22	<7.3	<23	-
80787 (DCM) Striped Perch	11/19/80	0.215	<4.4	<25	<8.9	<4.1	<12	<4.2	10±3.0	-
80814 (DCM) Black Abalone Meat	11/24/80	0.283	<4.2	<25	<8.5	<5.4	<13	<3.7	<5.4	-
80815 (DCM) Black Abalone Viscera	11/24/80	0.245	<11	<79	<21	<16	<25	<9.8	<11	-

TABLE B-4

Diablo Canyon Power Plant 1980 Annual Report
Milk Samples, Collected 1980 (pCi/l)

Sample (Station No.)	Date Collected	131I	134Cs	137Cs	140Ba	140La	Others
80024 (5F2)	1/20/80	<0.20	<4.7	<4.9	<17	<14	-
80025 (7G3)	1/20/80	<0.20	<4.8	<4.8	<19	<13	-
80062 (5F2)	2/17/80	<0.20	<4.0	<4.4	<13	<9.7	-
80063 (7G3)	2/17/80	<0.20	<1.8	<2.0	<5.5	<4.1	-
80130 (5F2)	3/16/80	<0.20	<4.0	<4.5	<12	<7.9	-
80131 (7G3)	3/16/80	<0.20	<1.9	<2.2	<5.6	<4.1	-
80228 (5F2)	4/20/80	<0.20	<2.2	<2.4	<6.2	<4.6	-
80229 (7G3)	4/20/80	<0.20	<3.4	<3.5	<9.4	<6.7	-
80281 (5F2)	5/18/80	<0.20	<1.6	<1.8	<6.9	<5.1	-
80282 (7G3)	5/18/80	<0.20	<1.6	<1.8	<7.2	<5.2	-
80367 (5F2)	6/22/80	<0.20	<3.7	2.4±0.97	<12	<7.6	-
80368 (7G3)	6/22/80	<0.20	<3.4	<4.3	<14	<11	-
80433 (5F2)	7/20/80	<0.20	<1.2	<1.7	<5.3	<1.2	-
80434 (7G3)	7/20/80	<0.20	<2.2	<2.9	<13	<2.7	-
80539 (7G3)	8/17/80	<0.20	<1.0	2.5±1.3	<6.5	<1.1	-
80609 (5F2)	9/14/80	<0.20	<1.3	<1.6	<5.2	<1.2	-
80610 (7G3)	9/14/80	<0.20	1.1±0.7	<1.6	<5.8	<1.6	-
80676 (5F2)	10/19/80	<0.20	<0.8	<0.9	<7.6	<1.0	-
80677 (7G3)	10/19/80	<0.20	<1.4	<1.6	<6.6	<1.7	-
80753 (5F2)	11/16/80	<0.20	<2.2	<3.0	<14	<5.2	-
80751 (7G3)	11/16/80	<0.20	<1.4	<1.7	<10	<2.1	-
80856 (5F2)	12/14/80	<0.20	<1.0	<1.6	<4.9	<1.2	-
80857 (7G3)	12/14/80	<0.20	<1.3	<1.6	<6.8	<1.6	-

TABLE B-5

Diablo Canyon Power Plant 1980 Annual Report
Food Products, Collected 1980 (pCi/kg wet)

Sample (Station No.)	Date Collected	Ratio Dry/Wet	131I	134Cs	137Cs	Others
80064 (7G1) Brussels Sprout Greens	2/17/80	0.141	<14	<5.1	<5.8	7Be=262±38
80065 (5F2) Cauliflower Greens	2/17/80	0.093	<6.6	<6.0	<6.2	7Be=192±49
80083 (7C1) Snow Peas	2/26/80	0.116	<4.4	<2.5	<2.7	7Be=47±23
80283 (7G1) Celery Greens	5/18/80	0.125	<7.3	<4.3	<4.6	7Be=132±30
80284 (5F2) Broccoli Greens	5/18/80	0.152	<19	<4.6	<5.1	-
80334 (7C1) Snow Peas	6/3/80	0.136	<11	<2.3	<2.5	-
80435 (7C1) Snow Peas	7/19/80	0.136	<12	<1.9	<2.2	-
80436 (7G1) Celery Greens	7/20/80	0.134	<17	<4.4	<5.2	7Be=287±106
80437 (5F2) Squash Greens	7/20/80	0.154	<53	<1.7	<3.5	-
80752 (7G1) Broccoli Greens	11/16/80	0.152	<4.1	<1.9	<2.2	7Be=44±14 103Ru=3.9±1.3
80754 (5F2) Cauliflower Greens	11/16/80	0.093	<11	<4.5	<5.5	7Be=32±6 103Ru=3.2±0.7
80788 (7C1) Snow Peas	11/24/80	0.136	<6.2	<4.9	<5.9	-

TABLE B-6

Diablo Canyon Power Plant 1980 Annual Report
Sediment Samples, Collected 1980 (pCi/kg dry)

Sample (Station No.)	Date Collected	134Cs	137Cs	Others	Comments
80066 (DCM)	2/19/80	<22	<22	-	-
80261 (DCM)	5/13/80	<26	<25	-	-
80480 (DCM)	8/4/80	<17	<18	-	-
80711 (DCM)	11/3/80	<5.1	46±7	-	-

TABLE B-7

Diablo Canyon Power Plant 1980 Annual Report
Dosimeter Measurements (milliroentgens per month)

Station	Month												Annual Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
0S1	9.16	6.77	7.37	6.92	6.95	5.34	9.59	6.75	6.70	8.03	6.94	6.88	87.4
0S2(a)					6.34	5.00	8.77	6.07	6.04	6.93	6.15	6.30	77.4(b)
1S1(a)					5.26	3.79	6.77	4.91	4.57	5.52	4.68	5.47	61.5(b)
2S1(a)					6.43	4.49	7.72	6.04	5.72	7.90	6.02	6.54	76.3(b)
3S1(a)					9.04	7.08	11.21	9.79	7.92	10.99	7.30	6.35	104.5(b)
4S1(a)					6.95	5.04	8.86	7.25	6.40	7.78	7.14	6.62	84.1(b)
5S1	9.41	7.52	8.27	7.57	8.71	6.01	10.39	7.95	7.71	8.82	7.06	7.28	96.7
5S3	8.91	6.59	8.06	7.29	8.02	5.31	9.85	8.45	6.96	8.60	6.86	7.46	92.4
6S1	5.88	4.95	5.38	5.28	5.56	3.97	6.77	5.40	4.41	5.90	4.94	4.86	63.3
7S1(a)					7.11	4.93	8.41	6.98	6.41	8.04	6.36	7.34	83.4(b)
7S2(c)			15.39			16.85			16.45			22.09	70.8
8S1	6.13	5.49	5.82	6.29	6.24	4.31	7.80	5.48	5.16	6.97	5.61	5.92	71.2
8S2	6.39	5.53	5.91	5.57	5.76	4.01	7.82	5.04	4.33	6.49	5.46	6.11	68.4
9S1(a)					8.82	6.31	9.95	7.96	7.77	10.15	7.82	8.13	100.4(b)
MT1	7.76	6.32	6.96	6.65	7.39	4.83	8.83	6.63	6.04	7.51	6.39	6.97	82.3
WN1	5.24	4.37	4.94	4.69	4.87	3.18	6.29	4.41	4.49	5.13	4.61	4.55	56.8
1A1	5.16	3.98	4.31	4.37	4.80	3.36	5.90	4.50	4.20	5.34	4.28	4.37	54.6
0B1	4.99	3.41	3.90	3.51	4.10	2.90	5.02	3.51	3.79	4.05	3.60	8.25	51.0
1C1(a)					5.08	3.39	6.05	4.04	3.90	4.93	4.59	4.64	54.9(b)
5C1(a)					6.33	4.93	8.76	6.37	6.09	7.91	5.85	5.45	77.5(b)
7C1	7.16	5.85	6.78	6.14	6.43	4.81	7.86	6.25	5.90	10.61	5.67	6.72	80.2
2D1	5.07	4.18	4.64	4.32	4.55	3.34	5.59	4.40	3.91	5.08	4.09	3.92	53.1
3D1(a)					5.02	3.84	6.38	4.98	4.76	5.21	4.68	4.44	59.0(b)

TABLE B-7 - contd.

Station	Month												Annual Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
4D1	4.78	4.15	4.82	4.30	4.66	3.46	5.84	4.37	4.30	5.46	4.30	4.78	55.2
6D1(a)					6.32	4.68	7.73	6.04	5.45	7.12	6.05	5.52	73.4(b)
7D1	4.89	3.67	4.56	4.08	4.23	3.20	5.22	3.96	4.01	4.74	3.84	4.73	51.1
7D2	7.07	5.90	6.62	6.12	7.13	4.79	8.65	7.31	6.36	8.56	6.86	7.43	82.8
2F2	6.05	4.87	5.35	4.92	5.25	3.57	6.69	5.02	4.97	6.00	4.76	4.79	62.3
5F1	7.14	5.76	6.43	5.99	6.66	4.29	7.85	6.20	5.95	8.20	5.80	6.35	76.6
5F3(c)			23.90			19.29			20.59			29.72	93.5
7F1	6.43	5.07	5.81	5.72	6.15	4.30	7.75	5.92	5.61	7.11	5.48	5.73	71.1
7G2	6.63	5.96	6.78	6.20	6.77	5.15	8.65	6.15	6.21	7.37	6.29	6.52	78.7
SM(d)									14.18(e)			28.69	102.9(f)
LO(d)									14.34(e)			27.09	99.4(f)
SV(d)									13.24(e)			27.12	96.9(f)

(a)These stations were added to the monitoring program during May 1980.
(b)The annual total for the new stations is based on eight months' data projected for the full year.
(c)These stations are collected on a quarterly basis with the results listed under the last month of the quarter.
(d)These stations were added to the monitoring program during the third quarter of 1980.
(e)The results for third quarter include monitoring during August and September only.
(f)The annual total for the new stations is based on the data from the third and fourth quarters (five months) projected for the full year.

TABLE B-8

Diablo Canyon Power Plant 1980 Annual Report
Indicator Marine Samples, Collected 1980 (pCi/kg wet)

Sample (Station No.)	Date Collected	Ratio Dry/Wet	54Mn	59Fe	58Co	60Co	65Zn	134Cs	137Cs	Others
80077 (DCM) Iridaea	2/25/80	0.179	<7.5	<20	<8.3	<8.2	<22	<6.7	<7.7	-
80107 (DCM) California Mussel	2/27/80	0.154	<36	<90	<35	<39	<80	<40	<43	-
80108 (DCM) Gooseneck Barnacle Shell	2/27/80	0.497	<5.3	<13	<6.3	<5.7	<15	<6.0	<6.6	-
80109 (DCM) Gooseneck Barnacle Meat	2/27/80	0.199	<5.7	<19	<7.2	<5.4	<14	<6.1	<6.0	-
80271 (DCM) California Mussel	5/14/80	0.180	<7.2	<40	<15	<13	<9.4	<7.6	<12	-
80272 (DCM) Gooseneck Barnacle Meat	5/14/80	0.224	<5.0	<12	<5.6	<4.6	<12	<4.7	<5.4	-
80273 (DCM) Gooseneck Barnacle Shell	5/14/80	0.472	<10	<28	<12	<10	<22	<10	<11	-
80274 (DCM) Iridaea	5/14/80	0.172	<5.9	<19	<6.7	<7.1	<14	<5.6	<6.4	-
80369 (DCM) Bull Kelp Blade	6/11/80	0.057	<1.0	<6.7	<1.5	<1.4	<2.9	<0.8	<1.9	-
80370 (DCM) Bull Kelp Pneumatocyst	6/11/80	0.118	<3.6	<12	<5.6	<3.0	<8.3	<2.4	<3.3	-
80573 (DCM) California Mussel	8/31/80	0.166	<36	<98	<48	<49	<72	<40	<55	-
80574 (DCM) Gooseneck Barnacle Shell	8/31/80	0.509	<8.9	<20	<10	<6.8	<17	<7.0	<7.7	-

TABLE B-8 - contd.

Sample (Station No.)	Date Collected	Ratio Dry/Wet	54Mn	59Fe	58Co	60Co	65Zn	134Cs	137Cs	Others
80575 (DCM) Gooseneck Barnacle Meat	8/31/80	0.240	<3.2	<8.7	<2.6	<3.8	<5.4	<2.0	<3.3	-
80576 (DCM) Iridaea	8/31/80	0.159	<6.0	<20	<8.6	<9.0	<14	<5.3	<6.4	-
80595 (DCM) Bull Kelp Blade	9/5/80	0.061	<5.0	<13	<7.4	<5.9	<13	<4.8	<5.4	-
80596 (DCM) Bull Kelp Pneumatocyst	9/5/80	0.093	<4.4	<15	<4.9	<5.1	<14	<3.5	<4.2	-
80782 (DCM) Bull Kelp Blade	11/17/80	0.039	<1.1	<13	<2.0	<1.1	<3.2	<0.9	<1.0	-
80783 (DCM) Bull Kelp Pneumatocyst	11/17/80	0.126	<4.1	<29	<7.3	<4.0	<13	<3.0	<3.5	-
80816 (DCM) California Mussel	11/24/80	0.162	<8.6	<47	<18	<15	<18	<8.3	<9.6	-
80817 (DCM) Gooseneck Barnacle Meat	11/24/80	0.251	<1.2	<7.1	<2.2	<2.7	<2.9	<1.1	2.2±0.8	-
80818 (DCM) Gooseneck Barnacle Shell	11/24/80	0.500	<2.8	<16	<4.8	<4.0	<6.2	<2.8	<3.0	-
80819 (DCM) Iridaea	11/24/80	0.170	<1.6	<10	<2.8	<2.0	<4.4	<1.5	1.6±1.0	-

TABLE B-9

Diablo Canyon Power Plant 1980 Annual Report
Land Use Census
Distances in Miles from the Unit 1 Centerline to the Nearest
Milk Animal, Residence, or Vegetable Garden

	22-1/2 Degree Radial Sector(1)								
	NW	NNW	N	NNE	NE	ENE	E	ESE	SE
Nearest milk animal	None(2)	None	None	None	None	None	None	None	None
Nearest residence	3.6	1.75	None	3.3	4.9	4.7	3.8	None	None
Nearest vegetable garden	None	None	None	None	None	None	None	None	2

(1)Sectors not shown contain no land beyond the site boundary other than islets not used for the purposes indicated in this table.
(2)None within five miles (typical of other places where "None" is used).