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April 26, 1990

PG&E Letter No. DCL-90-112



U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Annual Radiological Environmental Operating Report

Gentlemen:

Enclosed is the 1989 Annual Radiological Environmental Operating Report for Diablo Canyon Units 1 and 2, submitted in accordance with Subsection 6.9.1.5 of the Technical Specifications, Appendix A to Facility Operating Licenses Nos. DPR-80 and DPR-82.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

A handwritten signature in cursive script, appearing to read 'J. D. Shiffer'. The signature is written in black ink and is positioned above the printed name.

J. D. Shiffer

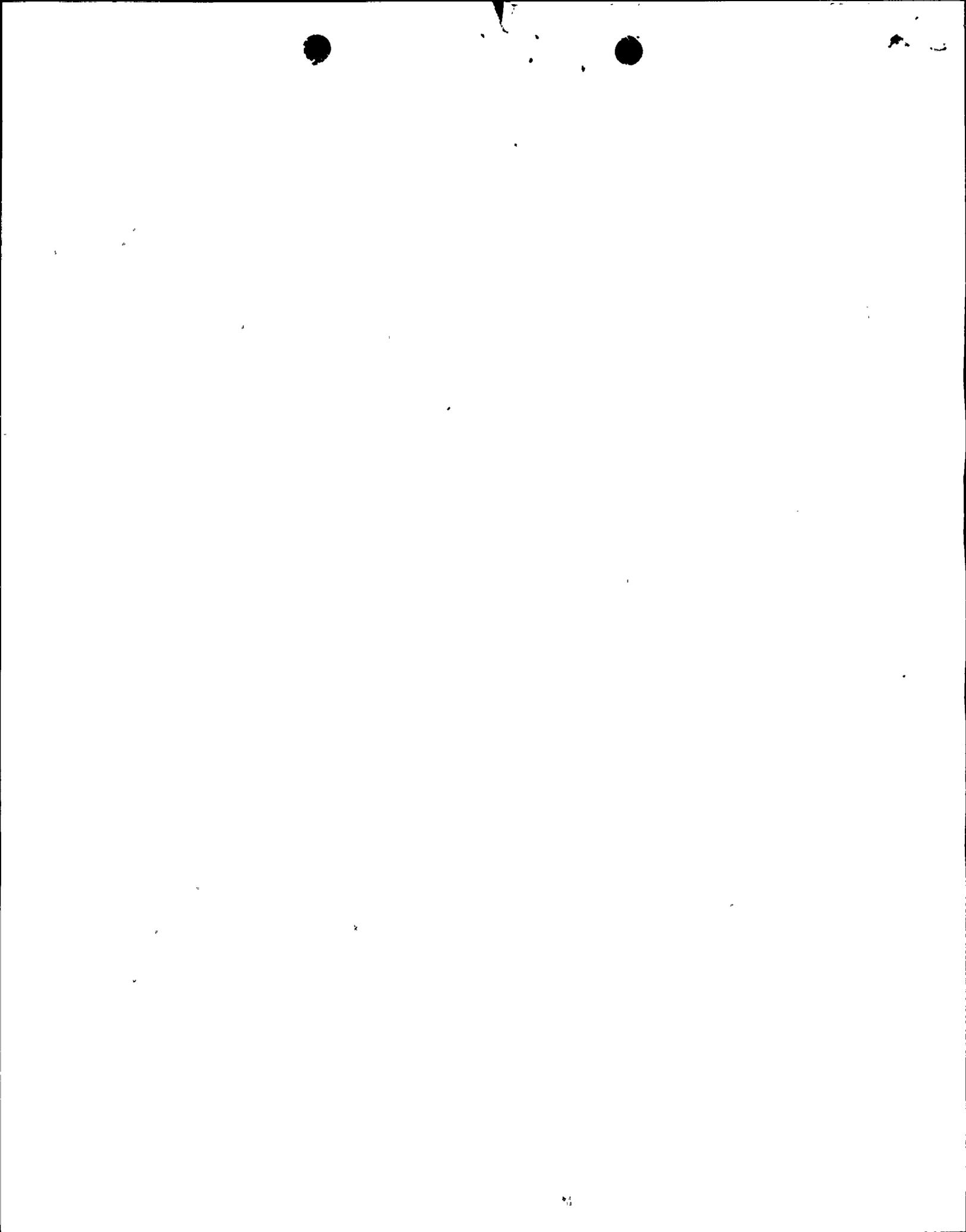
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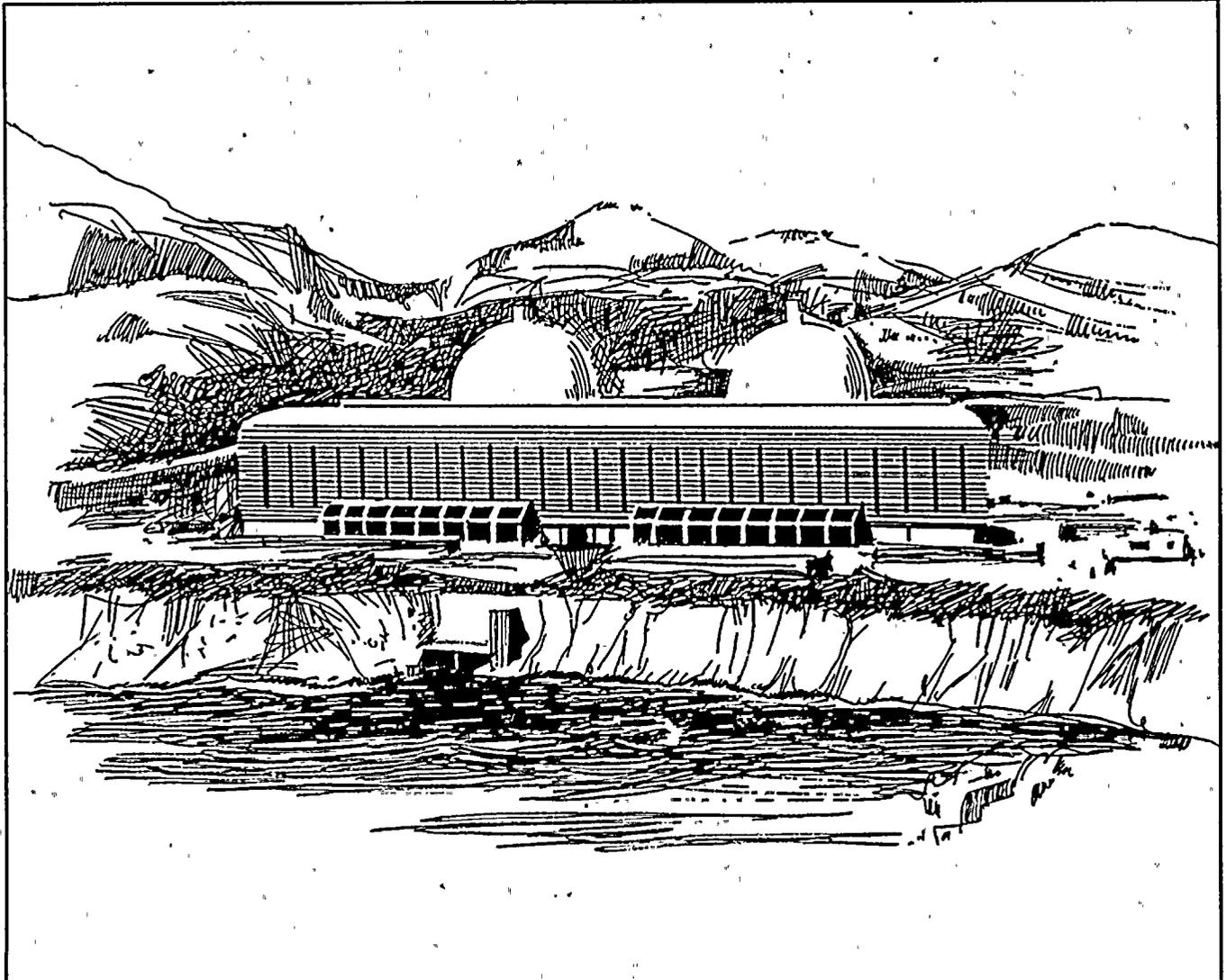
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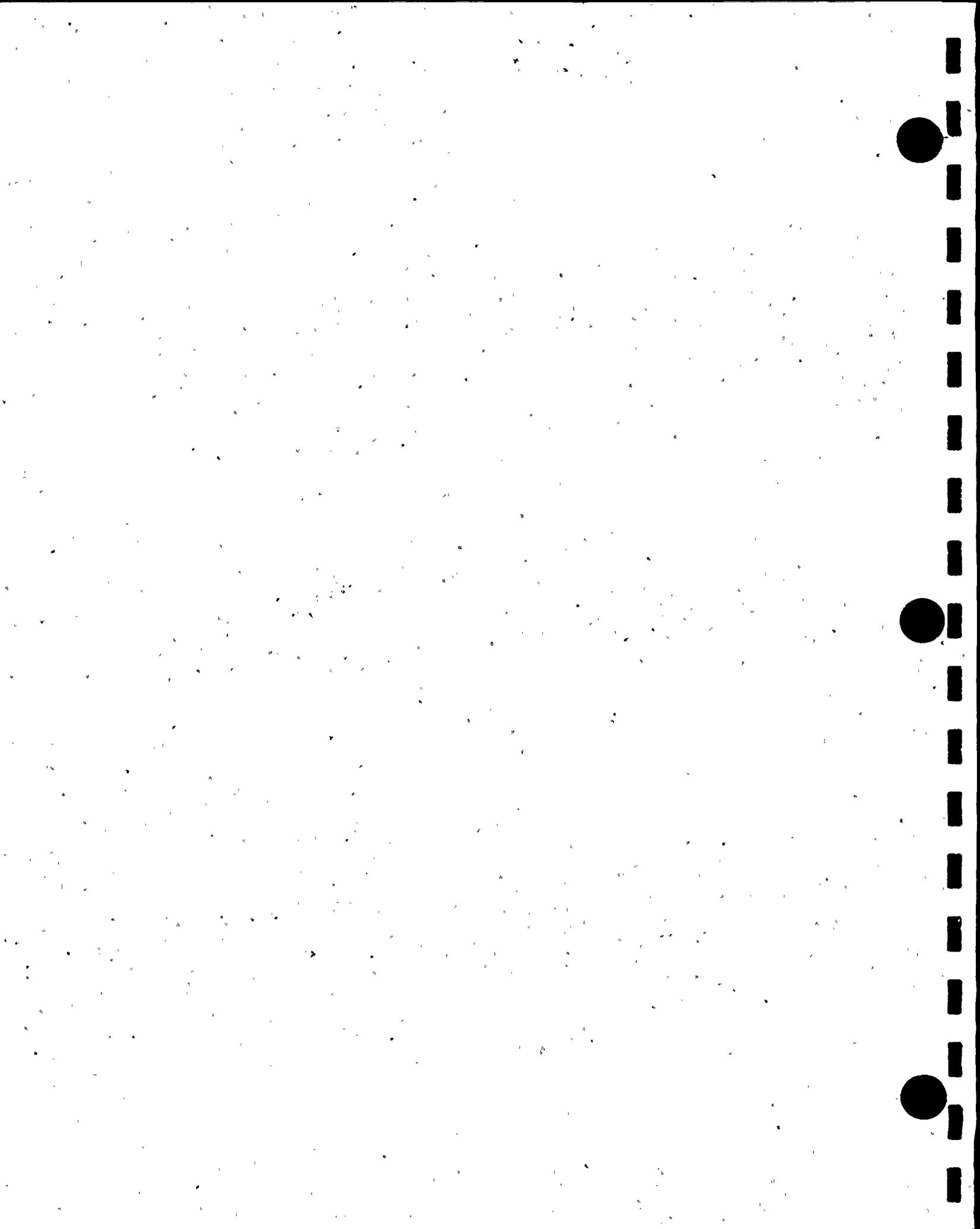
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Diablo Canyon Power Plant Units 1 and 2



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Report Issued:

April 23, 1990

1989 ANNUAL RADIOLOGICAL
ENVIRONMENTAL OPERATING REPORT
DIABLO CANYON POWER PLANT

Prepared by
Angeline Ong

April 1990

Report 420DC-90.339

Pacific Gas & Electric Company
Technical and Ecological Services
3400 Crow Canyon Road, San Ramon, California 94583

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EXECUTIVE SUMMARY

This report contains results from the operational Radiological Environmental Monitoring Program for Diablo Canyon Power Plant (DCPP) compiled for the period January 1, 1989 through December 31, 1989. This program is conducted by the Health Physics Unit of Pacific Gas & Electric Company's Technical and Ecological Services (TES) in San Ramon, California, and is conducted in accordance with section 3/4.12 of the DCPP Technical Specifications.

A review of the results from the 1989 Radiological Environmental Monitoring Program showed that all positively detected results were well below the reporting levels, and none of the lower limits of detection were exceeded. The airborne radioactivity concentrations around DCPP were consistent with preoperational background measurements. The mean percent availability for all air samplers was 98.6 percent for 1989. The ambient direct radiation levels in the environs surrounding DCPP did not change and were within the preoperational range. The analyses of water samples confirmed that the operation of DCPP had no significant impact on the aquatic medium in the plant environs. Vegetable crops harvested during their growing season and milk samples collected also showed no significant impact from plant operation. Some marine biological samples were found to contain plant-related nuclides. However, their activity concentrations were well below reporting levels and did not have any significant impact on the critical dose pathway to man.

The results of the 1989 Radiological Environmental Monitoring Program showed that the operation of Diablo Canyon Power Plant had no significant radiological impact on the environment.

Prepared by:



Angeline Ong
Health Physicist

Approved by:



Samuel L. Altshuler
Supervising Mechanical Engineer



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1

INTRODUCTION

Diablo Canyon Power Plant (DCPP) consists of two Westinghouse pressurized water reactors. Unit 1 (1086 MWe) attained criticality on April 29, 1984 and Unit 2 (1119 MWe) attained criticality on August 20, 1985. This report contains results from the operational Radiological Environmental Monitoring Program for Diablo Canyon Power Plant compiled for the period January 1, 1989 through December 31, 1989. During this period, 1,682 environmental samples were collected and analyzed to determine radiation levels. They consisted of 71 terrestrial samples, 225 marine samples, 501 air particulate filters, 501 iodine cartridges, and 384 thermoluminescent dosimeter readings. The program is conducted by the Health Physics Unit of Pacific Gas & Electric Company's, Technical and Ecological Services (TES) in San Ramon, California. Also included in this report are the results of TES participation in the Environmental Protection Agency (EPA) cross-check program, the state cross-check program, and the current land use census of the plant environs.

DCPP ENVIRONMENTAL MONITORING PROGRAM

The Radiological Environmental Monitoring Program was conducted in accordance with section 3/4.12 of the DCPP Technical Specifications. This program was designed to identify and quantify ambient radioactivity concentrations in the environs surrounding DCPP and to determine whether there were any significant increases in the concentration of radionuclides, attributable to plant operations, in the critical dose pathways.

The environmental media selected were based on the potential dose pathways of the radionuclides from the environment to man. They included the following: air, direct radiation, non-migratory marine species, algae, seawater, ocean bottom sediment, local agricultural crops, drinking water, surface water, and milk. The environmental samples were collected on a weekly, monthly, quarterly, or annual basis depending on sample type and availability. The frequencies of collection of the samples from the different media are summarized in Tables 1 and 2. These samples were collected by TES personnel, PG&E Mission Trail Region personnel, and contractors.



TABLE 1

MARINE SAMPLING PROGRAM

<u>Sample Item</u>	<u>Sampling Location</u>	<u>Type of Analysis</u>	<u>Material Analyzed</u>	<u>Collection Frequency</u>
Seawater	Diablo Cove Pacific Ocean North Pacific Ocean South Plant Outfall Rattlesnake Canyon	Gamma isotopic	Aliquot	Monthly
Red algae, foliose (<u>Iridaea</u> sp.)	Diablo Cove Rattlesnake Canyon	Gamma isotopic	Complete sample	Quarterly if available
Bull kelp (<u>Nereocystis leutkeana</u>)	Diablo Cove Pacific Ocean North Pacific Ocean South Rattlesnake Canyon	Gamma isotopic	Pneumatocyst and blade	Monthly if available
Mussels (<u>Mytilus californianus</u>)	Diablo Cove Pacific Ocean North Pacific Ocean South Rattlesnake Canyon	Gamma isotopic	Complete sample, less shell	Quarterly if available
Black abalone (<u>Haliotis cracherodii</u>)	Diablo Cove Pacific Ocean North Pacific Ocean South Rattlesnake Canyon	Gamma isotopic	Edible muscle	Quarterly if available
Surfperch (<u>Family Embiotocidae</u>)	Diablo Cove Pacific Ocean North Pacific Ocean South Rattlesnake Canyon	Gamma isotopic	Edible muscle	Quarterly if available



TABLE 1, continued

MARINE SAMPLING PROGRAM

<u>Sample Item</u>	<u>Sampling Location</u>	<u>Type of Analysis</u>	<u>Material Analyzed</u>	<u>Collection Frequency</u>
Red abalone (<u>Haliotis rufescens</u>)	Diablo Cove Pacific Ocean North Pacific Ocean South Rattlesnake Canyon	Gamma isotopic	Edible muscle	Quarterly if available
Rockfish (<u>Sebastes</u> sp.)	Diablo Cove Pacific Ocean North Pacific Ocean South Rattlesnake Canyon	Gamma isotopic	Edible muscle	Quarterly if available
Fish (species unspecified)	Commercial landing in Morro Bay* or Avila Pier*	Gamma isotopic	Edible muscle	Quarterly if caught locally**
Salmon (species unspecified)	Commercial landing in Morro Bay* or Avila Pier*	Gamma isotopic	Edible muscle	Quarterly if caught locally**

*Commercial sampling.

**Sampled when in season.



TABLE 2

DIRECT RADIATION, AIRBORNE, AND TERRESTRIAL SAMPLING PROGRAM

<u>Sample Item</u>	<u>Sampling Locations^{b/}</u>	<u>Type of Analysis</u>	<u>Collection Frequency</u>
Direct radiation ^{a/}	32 stations	Gamma exposure	Quarterly
Airborne Particulates	8 stations	Gross beta, Gamma isotopic	Weekly ^{c/} Quarterly composite
Iodine	8 stations	Gamma for I-131	Weekly
Surface water	1 station ^{d/}	Gamma isotopic, tritium	Monthly
Vegetative greens	Farm in San Luis Obispo area; farm in Arroyo Grande area; farm along plant access road	Gamma isotopic (including I-131)	Monthly
Milk	Farm in San Luis Obispo area;	Gamma isotopic, radioiodine	Monthly
Drinking water	1 station	Gamma isotopic, radioiodine, tritium	Monthly

^{a/} Thermoluminescent dosimeters, three at each station.

^{b/} See Figures 1, and 2 for locations.

^{c/} Filters changed weekly or more frequently as required by dust loading; analyzed at least 24 hours after filter change.

^{d/} Diablo Creek above 500 kV switchyard.



The sampling locations were determined by land use, site meteorology, and local demographics. Indicator stations were selected as those stations with the potential to show effects of plant operations. Special interest stations were selected because of the importance of the dose pathway. Control stations were selected outside the influence of the plant. Table 3 below lists the indicator, special interest, and control stations for the different sample media:

TABLE 3
SAMPLING LOCATIONS*

<u>Sampling Medium</u>	<u>Indicator</u>	<u>Special Interest</u>	<u>Control</u>
Airborne	MT1, ØS2, 1S1, 8S1, 8S2, 7D1, 5F1		2F2
Direct Radiation	MT1, WN1, ØS1, 5S1, 6S1, 8S1, 8S2, 5S3, 2D1, 1A1, 7C1, ØB1, 4C1, ØS2, 1S1, 2S1, 3S1, 4S1, 7S1, 1C1, 5C1, 3D1, 6D1, 9S1	4D1, 5F1, 7F1, 7D1, 7D2, 7G2, 5F3	2F2
Seawater	DCM	PON, POS	7C2
Surface Water	5S2		
Drinking Water	DW1		
Outfall Water	OUT		
Fish & Seafood	DCM, 7D3, 2F1	PON, POS	7C2
Algae	DCM	PON, POS	7C2
Sediment	DCM		
Food crops	7C1, 7G1		5F2
Milk			5F2

* See Table 4 for station code.



The distances and directions to the environmental monitoring stations are listed on Table 4. The off-site and on-site stations are shown in Figures 1 and 2 respectively.



TABLE 4

DISTANCES AND DIRECTIONS TO ENVIRONMENTAL MONITORING STATIONS
(Stations are shown on Figures 1 and 2)

Station Code*	Station Name	Radial Direction (True Heading) (Degrees)	Radial Distance from Plant km (Miles)
ØS1	Exclusion Fence-Northwest Corner	320	0.2 (0.1)
ØS2	North Gate	320	.8 (0.5)
1S1	Wastewater Pond	330	.6 (0.4)
2S1	Back Road-300 m North of Plant	0	.3 (0.2)
3S1	Road NW of 230 kV Switchyard	23	.6 (0.4)
4S1	Back Road Between Switchyard	43	.8 (0.5)
5S1	400 kV Switchyard	58	.6 (0.4)
5S2	Diablo Creek Weir	65	1.0 (0.6)
5S3	Microwave Tower Road	70	1.0 (0.6)
6S1	Microwave Tower	94	.8 (0.5)
7S1	Overlook Road	112	0.5 (0.3)
8S1	Target Range	125	.8 (0.5)
8S2	Southwest Site Boundary (Sec. Met Tower)	128	1.8 (1.1)
9S1	South Cove	167	.6 (0.4)
MT1	Meteorological Tower	185	.3 (0.2)
DCM	Diablo Cove	270	.3 (0.2)
WN1	Northwest Guard Shack	290	.3 (0.2)
1A1	Crowbar Canyon	327	2.6 (1.6)
ØB1	Point Buchon	325	5.8 (3.6)
1C1	Montana de Oro Campground	336	7.5 (4.7)
4C1	Clark Valley Gravel Pit	45	9.3 (5.8)
5C1	Junction Prefumo/See Canyon Roads	64	7.5 (4.7)
7C1	Pecho Creek Ruins (Mello Farm)	120	6.6 (4.1)
7C2	Rattlesnake Canyon	124	7.5 (4.7)
2D1	Sunnyside School	10	11.0 (6.9)
3D1	Clark Valley	24	9.9 (6.2)
4D1	Los Osos School	36	12.2 (7.6)
6D1	Junction See/Davis Canyon Roads	89	12.0 (7.5)
7D1	Avila Gate	118	10.6 (6.6)
7D2	Avila Beach	110	12.2 (7.6)
7D3	Avila Pier	120	11.0 (6.9)
2F1	Morro Bay (Commercial Landing)	0	17.4 (10.9)
2F2	Morro Bay Power Plant	358	17.9 (11.2)
5F1	SLO Zone 1 Substation	68	17.9 (11.2)
5F2	Cal Poly Farm	60	20.2 (12.6)
5F3	SLO County Health Department	70	20.3 (12.7)
7F1	Shell Beach	110	17.3 (10.8)
7G1	Arroyo Grande (Ka'waoka Farm)	115	26.9 (16.8)
7G2	Oceano Substation	118	27.7 (17.3)

TABLE 4 - continued

DISTANCES AND DIRECTIONS TO ENVIRONMENTAL MONITORING STATIONS
(Stations are shown on Figures 1 and 2)

Station Code*	Station Name	Radial Direction (True Heading) (Degrees)	Radial Distance from Plant km (Miles)
OUT	Plant Outfall	270	0.3 (0.2)
DW1	Drinking Water	In Plant	---
PON	Pacific Ocean North of Diablo Cove	305°	2.4 (1.5)
POS	Pacific Ocean South of Diablo Cove	145	1.3 (0.8)

*Station Code (XYZ):

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

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

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

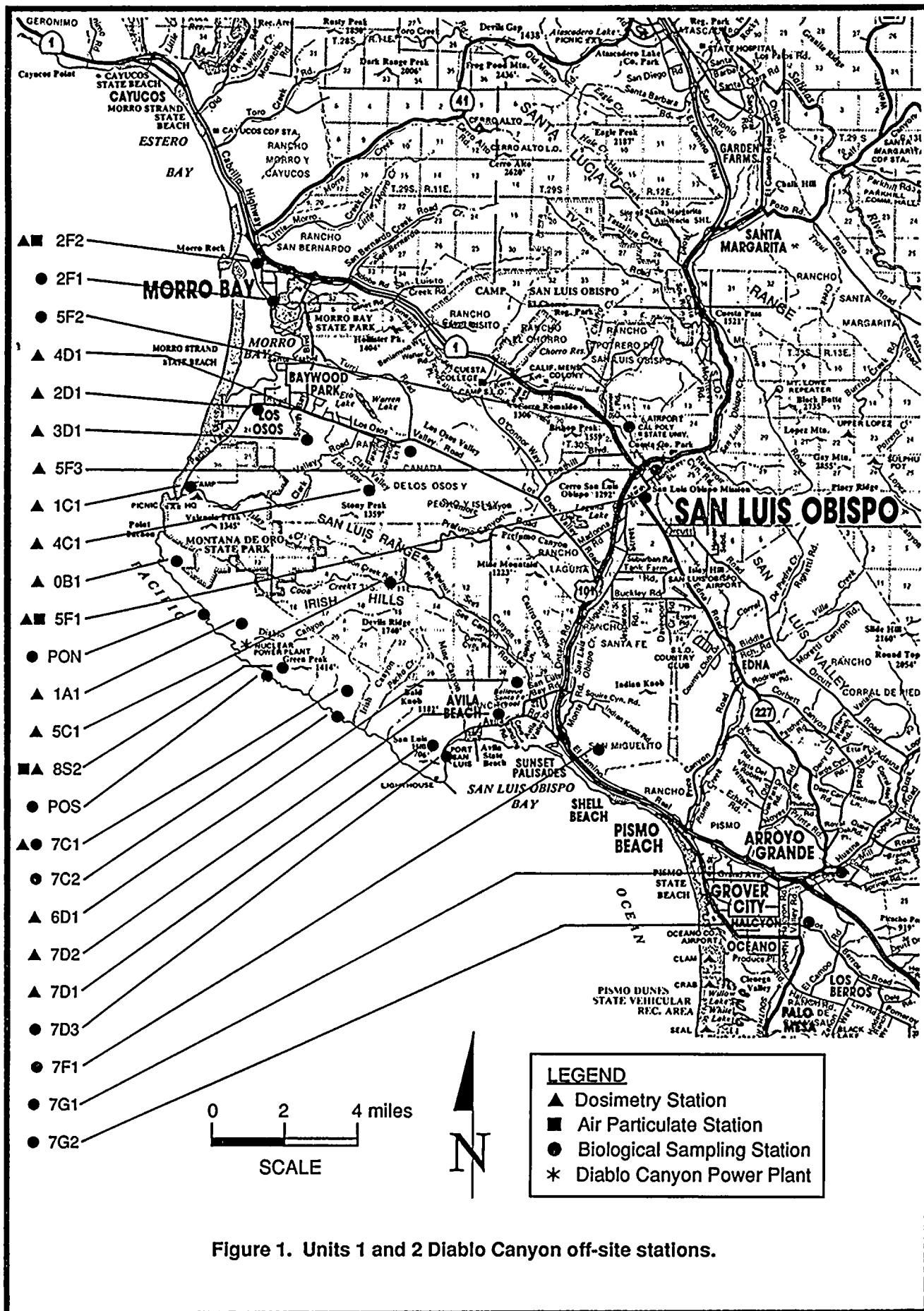
- S - On-site
- A - 0-2 miles from plant (but off-site)
- B - 2-4 miles from plant
- C - 4-6 miles from plant
- D - 6-8 miles from plant
- E - 8-10 miles from plant
- F - 10-15 miles from plant
- G - 15-20 miles from plant
- H - Greater than 20 miles from plant

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

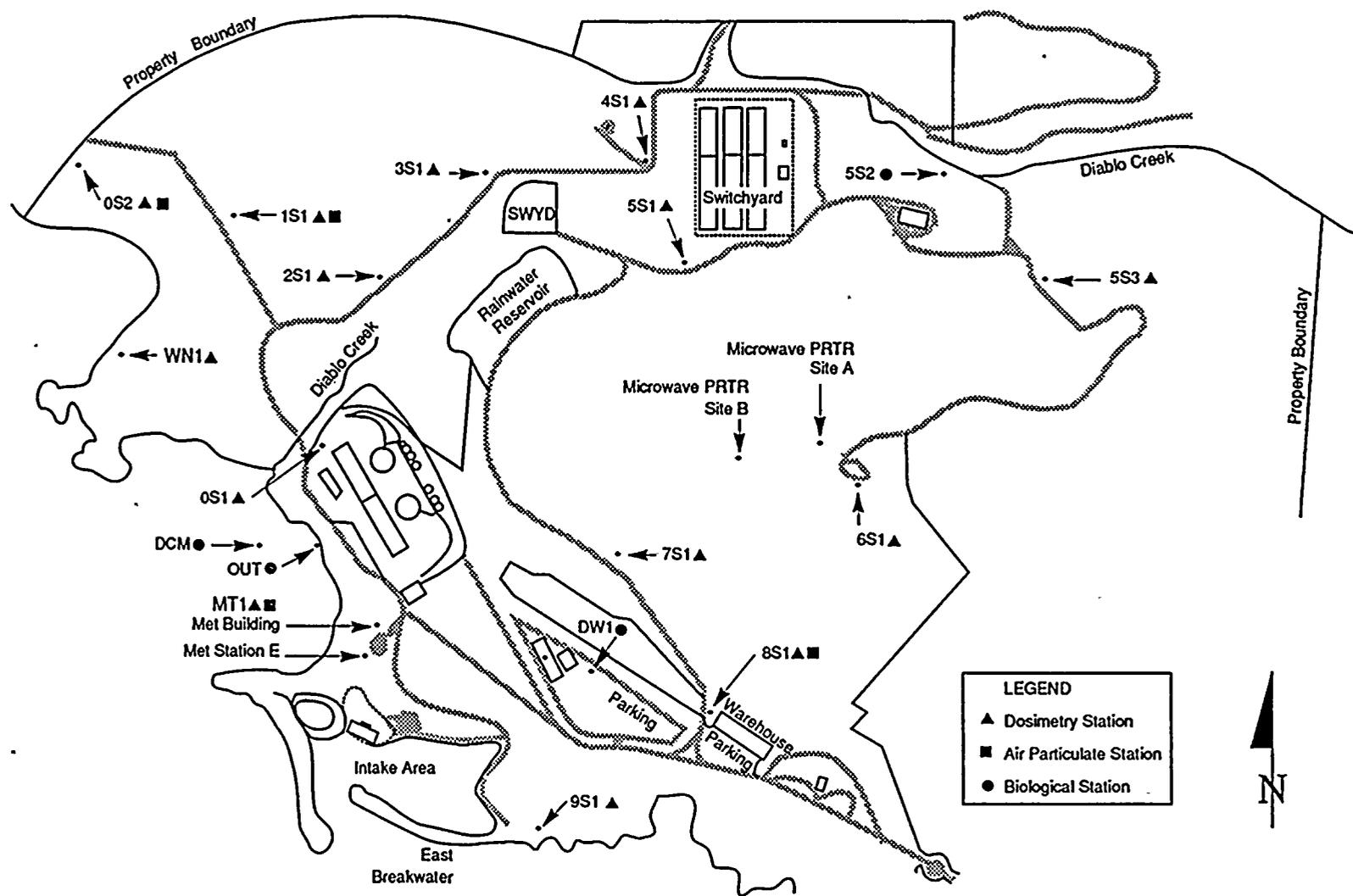
*Station Code (DCM, MT1, WN1, PON, POS, OUT, DW1):

The following stations do not follow the coding system: Diablo Cove Marine (DCM), Meteorological Tower (MT1), Northwest guard shack (WN1), Pacific Ocean North (PON), Pacific Ocean South (POS), Plant Outfall (OUT), and Drinking Water (DW1).









LEGEND

- ▲ Dosimetry Station
- Air Particulate Station
- Biological Station



Figure 2. Units 1 and 2 Diablo Canyon on-site stations.



SAMPLING METHODS

AIRBORNE RADIOACTIVITY

Air particulate and radioiodine sampling were performed weekly. Constant flow air samplers were used to draw air through paper filters to collect air particulates and through TEDA impregnated charcoal cartridges to collect radioiodine. The air samplers were set at a flow rate of 1.5 cfm and located one meter above the ground.

At the end of the sampling period, the filter and cartridge were collected. All necessary data regarding the flow rate, run time, sampler time on and off, date of collection, and sampler location were recorded and submitted, along with the samples, to TES for analysis.

DIRECT RADIATION

Direct radiation was measured at 32 stations in the vicinity of Diablo Canyon using Panasonic UD814 thermoluminescent dosimeters (TLDs), and these TLDs were exchanged on a quarterly basis.

The field TLD packets were prepared at TES Dosimetry (located at DCPD) for exchange. Control dosimeters were carried with the field dosimeters to differentiate the exposure the dosimeters received in the field from that which they received during transit. The location, date, and time of exchange were recorded on the log sheet which accompanied the field dosimeters.

WATER SAMPLES

Water samples (seawater, drinking water, surface water, and outfall water) were collected monthly. Two 1-gallon plastic bottles of each water sample type were collected at their respective locations.

Seawater samples were collected offshore at Diablo Cove (station DCM), station PON, station POS, and Rattlesnake Canyon (station 7C2). The outfall water samples were collected in the plant outfall. Surface water samples were collected from Diablo Creek Weir (station 5S2) located on site at DCPD. Drinking water samples were collected from the drinking water system on site.



Before collection, the plastic bottles were rinsed with the water to be collected. After collection, the samples were securely sealed and labelled with sample type, location, date, time of collection, and the person performing the collection. The samples were then sent to TES for analysis.

MARINE SAMPLES

Marine samples collected included, but were not limited to, the following: iridacea, bull kelp, red and black abalone, California mussels, rockfish, surfperch, commercial fish, and ocean bottom sediment. The intertidal samples (iridacea, mussels, and black abalone) were collected quarterly when the tide was at its lowest level during the quarter. Bull kelp was collected monthly from the offshore kelp bed near the plant. Quarterly samples of fish, red abalone, and an annual sample of ocean bottom sediment were collected from the waters near the plant by TES divers. Fish caught offshore and available commercially were also obtained for analysis. All samples were subject to unavailability due to seasonal fluctuations or unfavorable sampling conditions.

The samples were sealed in plastic bags immediately upon collection and labelled with sample type, location, date, time of collection, and individual performing the collection before they were sent to TES.

FOOD CROPS

Representative samples of vegetable crops in season were collected monthly from Cal Poly Farm (station 5F2), Kawaoka Farm in Arroyo Grande (station 7G1), and Mello Farm (station 7C1) along the site access road. The samples were harvested by the individual performing the collection, sealed immediately in polyethylene bags, labelled with sample type, sample location, collection date, time of collection, and the individual performing the collection, and then sent to TES for analysis.

MILK

Milk was collected monthly from Cal Poly Farm (station 5F2). Two 1-gallon plastic bottles of milk were collected from each dairy. Forty grams of sodium bisulfite preservative were added to each milk sample. The bottles



were sealed and shaken thoroughly to distribute the preservative. They were labelled with sample type, sample location, date and time of collection, and the individual performing the collection, and then sent to TES for analysis.



SAMPLE ANALYSES

Samples received at TES were analyzed for radioactivity by standard methods as outlined in the environmental monitoring procedures for DCP(1). The results of the analyses were reported at the 95 percent confidence level (2σ). All analyses were performed such that the lower limits of detection (LLDs) listed on Table 5 were achieved under routine conditions. The LLD is an a priori (before the fact) estimate of the activity concentration that can be practically achievable with a given measuring instrument, procedure, and type of sample. This value is not intended to be used as an a posteriori (after the fact) criterion for the presence of activity. Background fluctuation, unavoidably small sample size, the presence of interfering nuclides or other uncontrollable circumstances may occasionally render these LLDs unachievable. In such cases the contributing factors are identified and described in this report.

A brief description of the analyses of the different sample types and the general method of counting is discussed below. For quick reference, Tables 1 and 2 summarize the type of analyses that were done on the different sample media.

AIRBORNE RADIOACTIVITY

The filter papers collected from the field were placed on individual planchets and counted for gross beta activity in a low-background, thin-window gas proportional counter. They were counted at least 24 hours after collection to allow for the decay of radon daughters. Gamma isotopic analysis was then performed on quarterly composites of the filters to determine the activity concentration of gamma emitting isotopes.

Gamma isotopic analyses were also performed on the TEDA impregnated charcoal cartridges to determine the radioiodine concentration. The cartridges and filter papers were counted for a time period such that the LLDs were met.

DIRECT RADIATION

Panasonic (UD814) thermoluminescent dosimeters were used to measure the ambient radiation level. The dosimeters were annealed and packaged at TES



TABLE 5

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)^{a/}

<u>Analysis</u>	<u>Water (pCi/L)</u>	<u>Airborne Particulate or Gas (pCi/m³)</u>	<u>Fish (pCi/kg, wet)</u>	<u>Milk (pCi/L)</u>	<u>Food Products (pCi/kg, wet)</u>	<u>Sediment (pCi/kg, dry)</u>
Gross beta	4	1x10 ⁻²				
H-3	2000					
Mn-54	15		130			
Fe-59	30		260			
Co-58,60	15		130			
Zn-65	30		260			
Zr-Nb-95	15					
I-131	1 ^{b/}	7x10 ⁻²		1	60	
Cs-134	15	5x10 ⁻²	130	15	60	150
Cs-137	18	6x10 ⁻²	150	18	80	180
Ba-La-140	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):

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



TABLE 5, continued

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)^{a/}

where

LLD is the lower limit of detection as defined (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)

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).

b/ LLD for drinking water.



to be sent out in the field. After field exposure, the TLDs were read out. The TLDs were calibrated using an NBS-traceable cesium-137 source.

WATER SAMPLES

Gamma isotopic analyses were performed on all water sample types (drinking water, surface water, outfall water, and seawater). To determine the activity concentration of gamma emitters, a known volume of the water sample was analyzed using a gamma spectrometer.

Tritium analyses were performed on drinking water, surface water and outfall water. The water samples were distilled prior to analysis, and analyzed for tritium using a liquid scintillation spectrometer.

MARINE SAMPLES

Only the edible portion of the fish, abalone, and mussels were analyzed for gamma emitters. A weighed amount of the prepared sample was analyzed using a gamma spectrometer.

The bull kelp blades and the pneumatocyst were prepared separately for analysis. The weighed samples were then counted on the gamma spectrometer to determine the activity concentration of gamma emitters. The results reported were based on wet weight for the marine samples.

The sediment sample that was collected from Diablo Cove was first oven dried before performing gamma isotopic analysis to determine the activity concentration. The results reported for the sediment sample were based on dry weight.

FOOD CROPS

Whenever possible, the leafy portions of the vegetative sample were prepared for analysis. The samples were analyzed to determine the gamma isotopic content, including iodine-131. The results obtained were based on wet weight.



MILK

A known volume of the milk sample was first analyzed on a gamma spectrometer to determine its gamma isotopic content. Stable iodine carrier was then added to the milk sample for determination of chemical recovery. The total iodine was separated from the sample by passing the sample through an anion resin column. The iodine was chemically extracted from the resin, precipitated as cuprous iodide and counted on the beta-gamma coincidence spectrometer.



QUALITY CONTROL

Routine quality control was performed throughout the year to ensure the accuracy of equipment and procedures used in determining the results.

The TES radiological laboratory participates in the EPA Environmental Radioactivity Laboratory Intercomparison Studies Program and the state cross-check program. In addition to these programs, TES also participates in a PG&E intracompany cross-check program.

Appendix A, Table A-9 presents the results of TES participation in the EPA Environmental Radiological Laboratory Intercomparison Studies Program. Participation included the following determinations:

- food and milk samples containing gamma emitters;
- water samples containing tritium, iodine-131, gamma emitters, strontium-89, strontium-90, alpha and beta emitters;
- air particulate samples containing cesium-137, strontium-90, alpha and beta emitters.

Three independent analyses were performed on each sample and the values were submitted for intercomparison with other participants. The 1989 results shown in Table A-9 were all within the acceptable range set by the EPA. Due to problems with the I-131 in the Air Particulate Intercomparison Study for August, 1989, the result was invalidated by the EPA Environmental Radioactivity Laboratory.

TES results for the intracompany cross-check program were found to be in good agreement with the other participants. No discrepancies were found.

The 1987 state cross-check report released in 1989 showed that our submitted results were comparable to those of the state of California's S&R Laboratory. No discrepancies were found. The 1988 cross-check report has not been issued yet. It will, therefore, be discussed in the 1990 annual report. Included in this report is the table of TES results submitted for the 1989 cross-check program (Appendix B, Table B-1).



LAND USE CENSUS

TES conducted a land use census in the vicinity of Diablo Canyon Power Plant for 1989. The land use census is required by the Nuclear Regulatory Commission, Regulatory Guide 4.8, "Environmental Technical Specifications for Nuclear Power Plants", and by the Diablo Canyon Power Plant Technical Specification 3.12.2. The census is to be conducted at least once per year during the growing season, chosen as between June 1 and October 1, for the Diablo Canyon environs.

The objective of the land use census is to identify the nearest milk animal and the nearest garden greater than 50 square meters (500 square feet), producing broadleaf vegetation, in each of the landward meteorological sectors within a distance of 8 kilometers (5 miles) of the plant. In addition, the Diablo Canyon Technical Specifications require the identification of the nearest residence in each of the landward sectors within a distance of 5 miles.

The land use census was conducted by direct contact with individual landowners or tenants, and property visits. The landowners or tenants were identified from county records and were contacted between June 30 and September 30, 1989.

Contact with the landowners or tenants identified no household gardens greater than 50 square meters (500 square feet). No milk animals were identified within the first 5 miles in any sector. Much of the area surrounding the plant site is used for cattle grazing. The only garden or farm greater than 50 square meters is on the coastal plateau in the east southeast (ESE) sector, along the site access road. The farm starts at approximately 2 miles from the plant and extends to 4.5 miles from the plant. It produces mainly legumes and cereal grass (grains).

A total of seven permanent residences were identified within the 5-mile radius of the plant. The nearest residence is 1.55 miles north northwest (NNW) of the plant. Table B-5 summarizes the results of the land use census

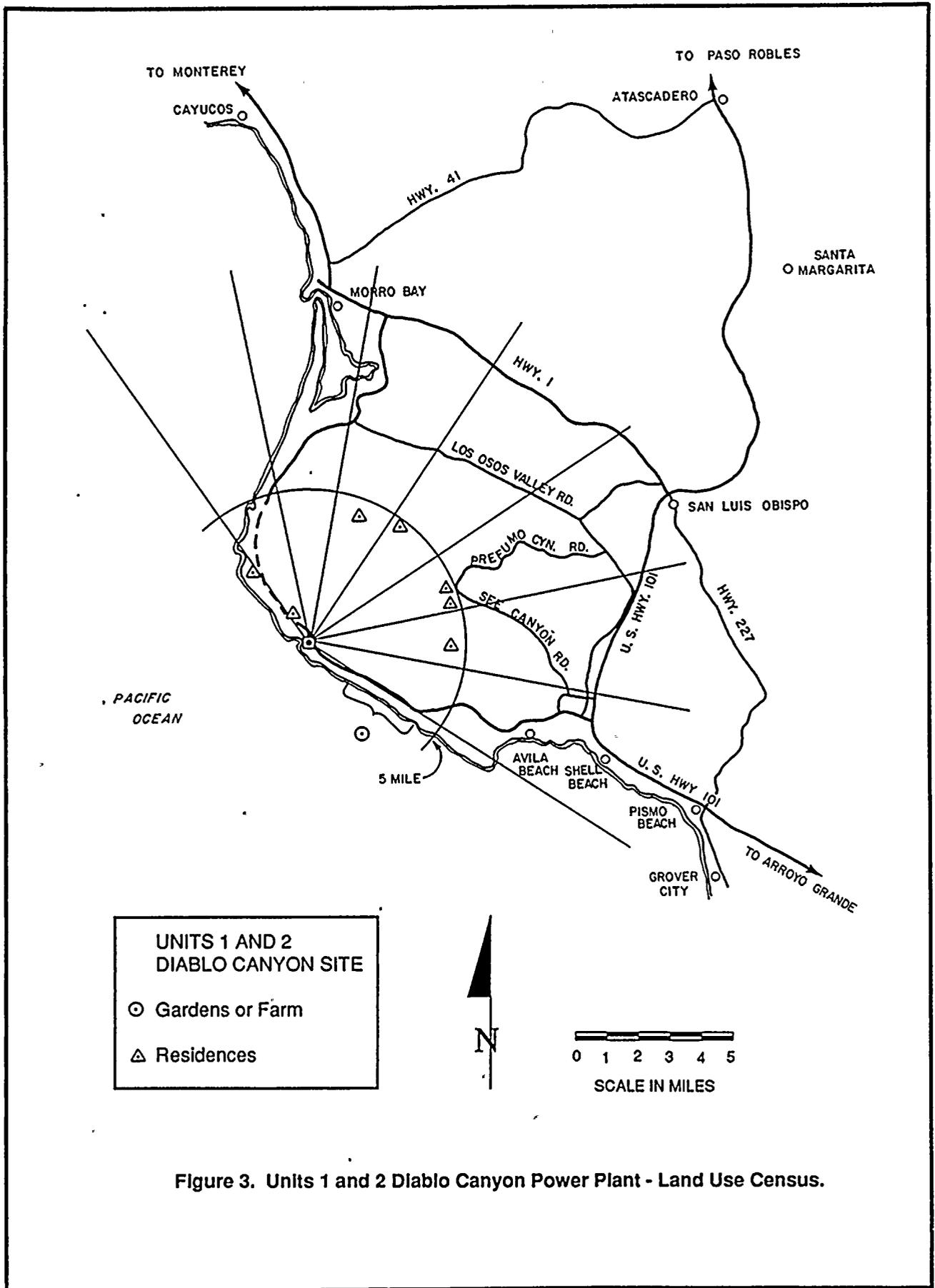


and Figure 3 shows the locations of the farm and residences in the vicinity of Diablo Canyon Power Plant.

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5



UNITS 1 AND 2
 DIABLO CANYON SITE

○ Gardens or Farm

△ Residences

Figure 3. Units 1 and 2 Diablo Canyon Power Plant - Land Use Census.



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RESULTS AND DISCUSSION

The results for the DCPD Radiological Environmental Monitoring Program are listed in Appendices A and B. The \pm terms listed in the tables in the appendices are the 95 percent confidence level (2σ). The tables in Appendix A present summaries of the results, in accordance with current Nuclear Regulatory Commission (NRC) guidelines⁽³⁾, and the results of the EPA Laboratory Intercomparison Program. The tables in Appendix B contain analytical results of the individual samples performed in 1989 and state cross-check results.

The lower limits of detection for the radionuclides of interest listed in Table 5 were met for all analyses performed for the DCPD Radiological Environmental Monitoring Program. Analytical results for different sample types are discussed below.

AIRBORNE RADIOACTIVITY

Air particulates and radioiodine samples were collected weekly from seven indicator stations: MT1, ØS2, 1S1, 5F1, 7D1, 8S1, and 8S2 in the DCPD environs; and one control station, 2F2 (Morro Bay). A total of 501 air particulate filters and 501 iodine cartridges were collected and analyzed. Appendix A, Table A-2 summarizes the data collected for the air sampling program.

Air Particulates: Gross beta activity was detected in every weekly air particulate sample collected from all indicator and control stations. The range for the indicator stations was 0.001 - 0.085 pCi/m³ with a mean of 0.016 pCi/m³. The range for the control station was 0.001 - 0.081 pCi/m³ with a mean of 0.018 pCi/m³. Comparison of the data showed that the mean values of gross beta activities for the indicator stations were commensurate with those obtained from the control station. The gross beta activities detected at the air sampling stations are tabulated in Appendix B, Table B-3 and shown in Figure 4.





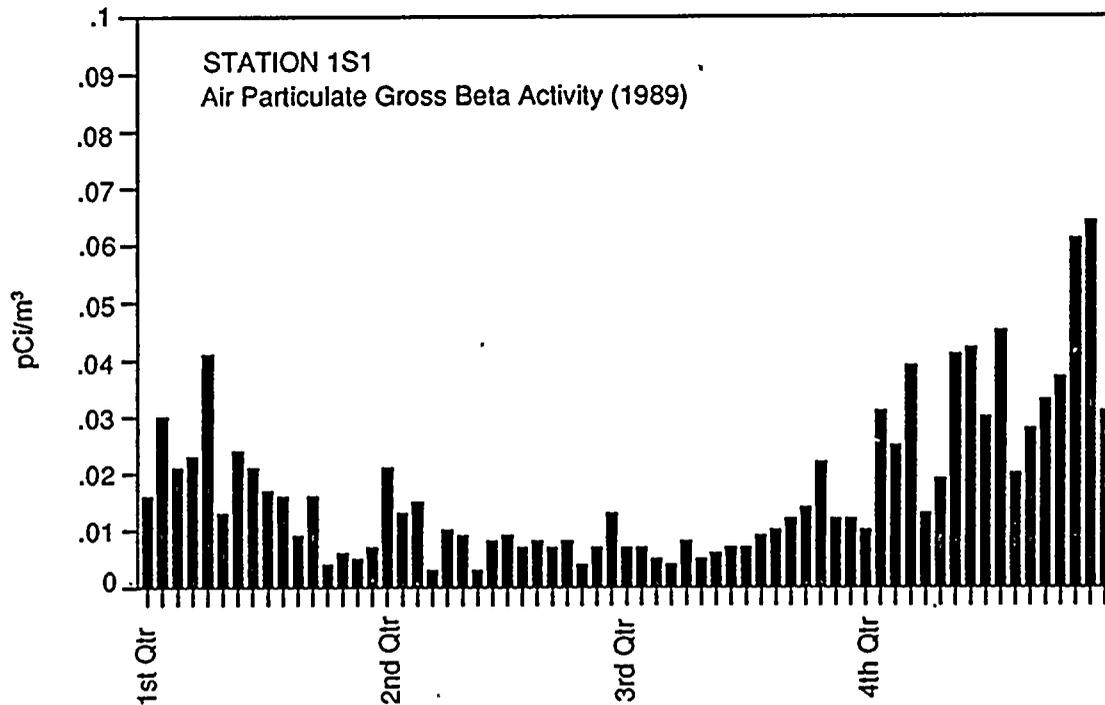
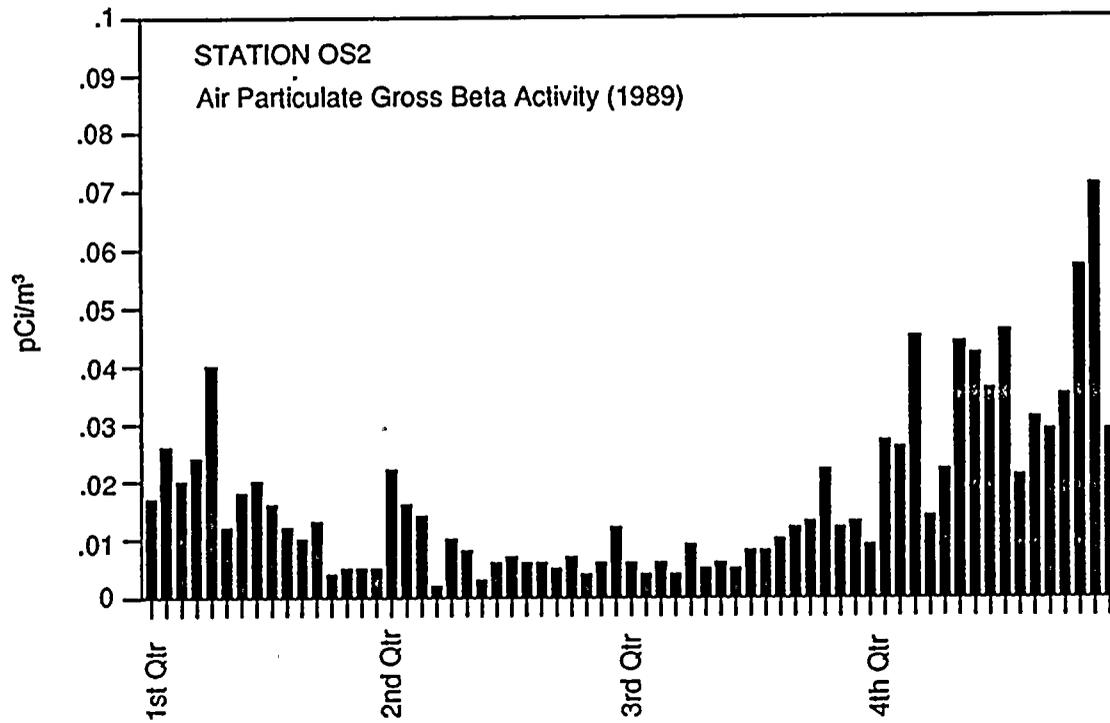


Figure 4. Continued.



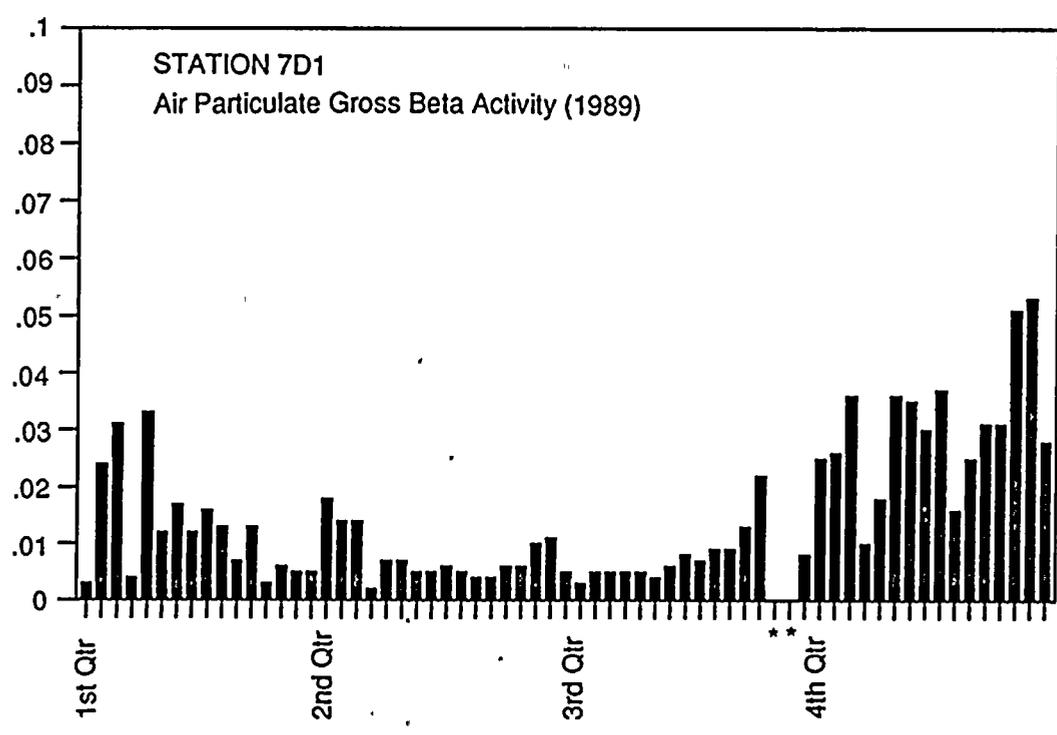
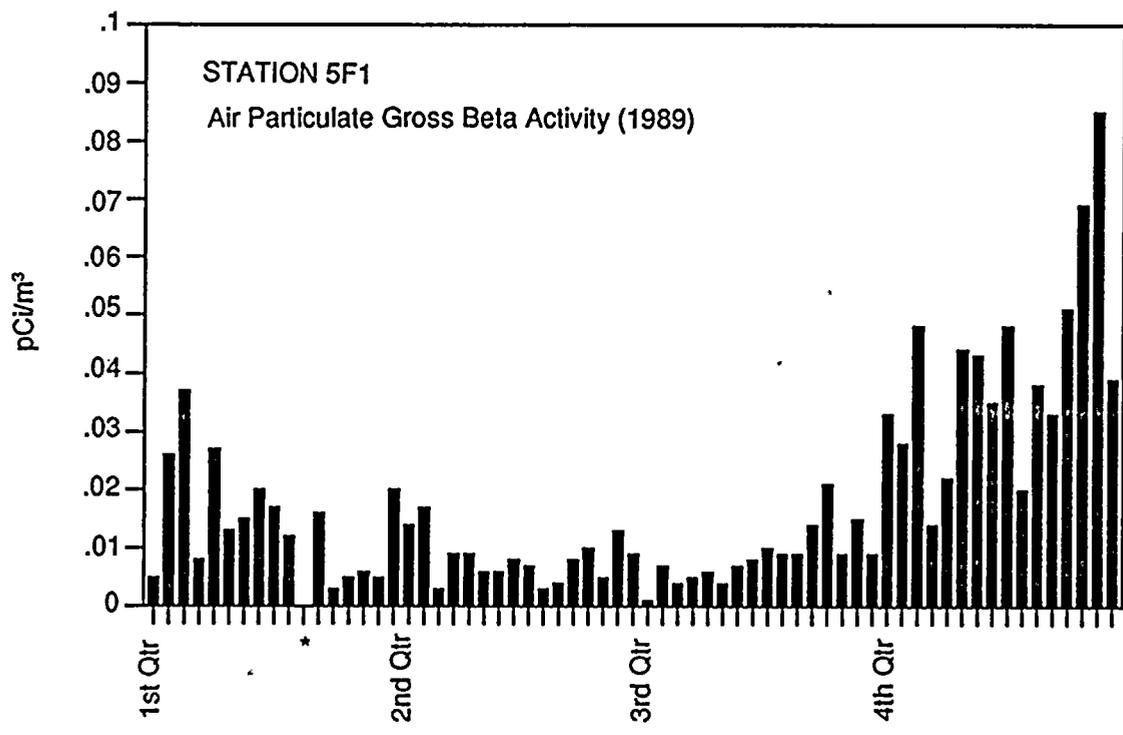
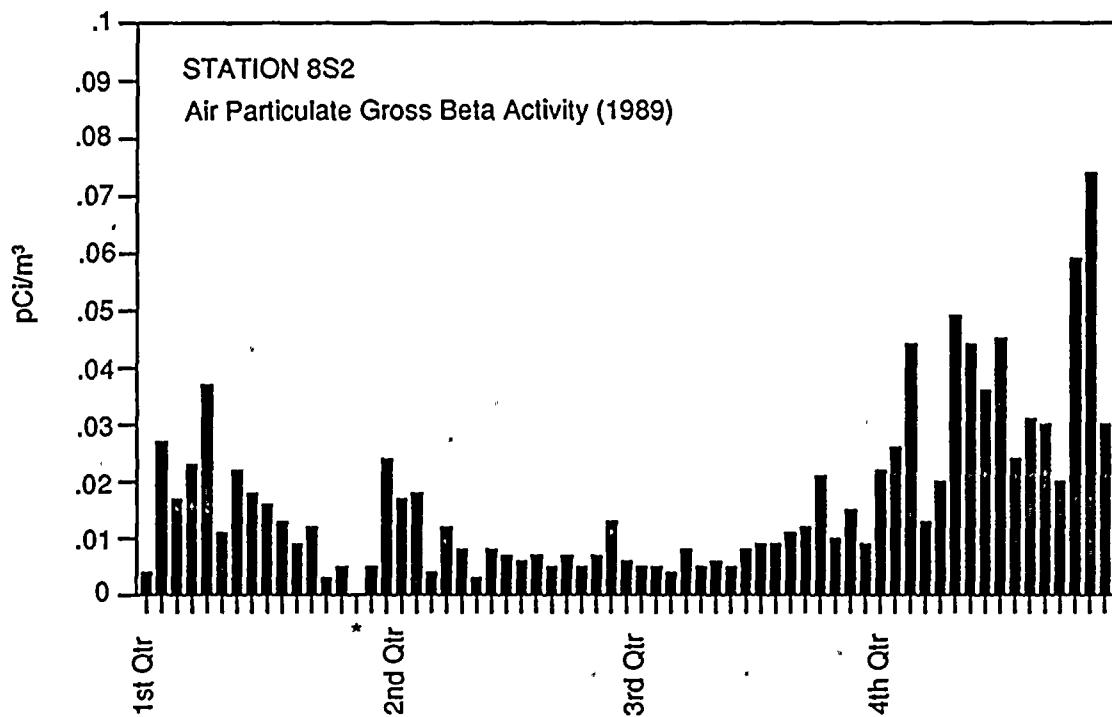
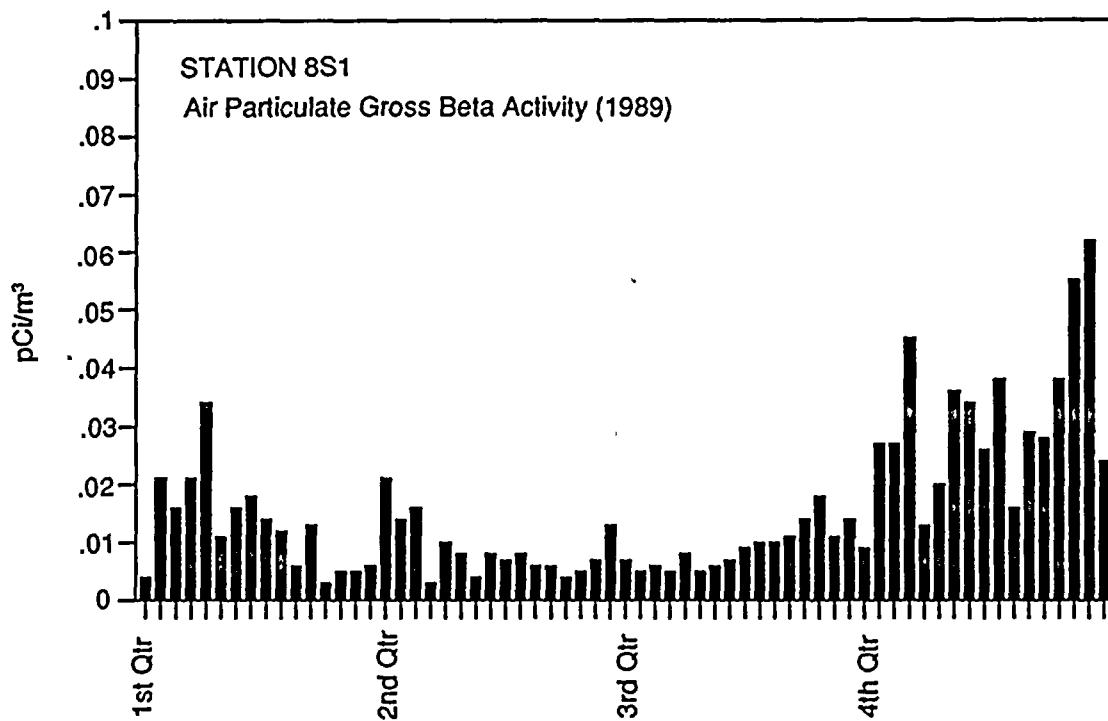


Figure 4. Continued.



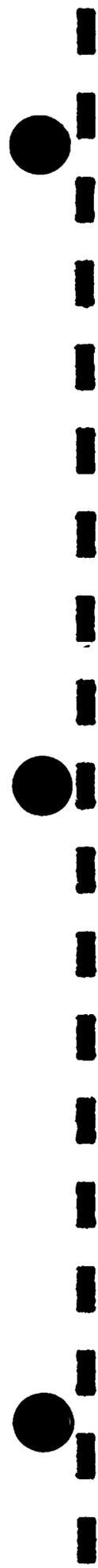
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* Sampler was not changed

Figure 4. Continued.



Gamma isotopic analyses, performed on quarterly composites of the air particulate filters from each station, showed no plant-related gamma activity but only naturally occurring radioactivity.

Radioiodine: A total of 501 iodine cartridges were analyzed for iodine-131. Iodine-131 was not detected at the indicator stations or control station.

DIRECT RADIATION

Dosimeters from 32 stations were collected on a quarterly basis and processed. A total of 384 TLD badges were collected; three dosimeters were placed at each station per quarter. The exposure levels from all indicator stations ranged from 11.1 to 23.1 mR/qtr with a mean of 16.8 mR/qtr. The exposure levels at the control station (2F2) ranged from 12.1 to 15.1 mR/qtr, with a mean of 13.1 mR/qtr. The exposure levels for 1989 did not differ significantly from the previous year, nor from the preoperational data. This indicates that the operation of DCPD did not significantly affect the ambient radiation level in the plant environs. See Appendix A, Table A-8 for the summary of the TLD readings for 1989; and Appendix B, Table B-4 for the individual station data.

WATER SAMPLES

A total of 84 water samples (48 seawater samples, 12 drinking water samples, 12 surface water samples and 12 outfall water samples) were collected and analyzed. The results of the water sample analyses are summarized in Appendix A, Tables A-1(a) to (d).

Gamma isotopic analyses were performed on all water samples. The samples showed no detectable radioactivity other than natural radioactivity.

Tritium analysis was performed on all drinking water, surface water and outfall water samples. Tritium was detected in only one outfall sample collected during the fourth quarter. It measured $8.65E3$ pCi/L which was still well below the report levels listed in Table 6⁽⁴⁾.

Review of the data showed that the operation of DCPD had negligible impact on the aquatic medium in the plant environs.



TABLE 6

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

<u>Analysis</u>	<u>Water</u> <u>(pCi/L)</u>	<u>Airborne</u> <u>Particulate</u> <u>or Grass</u> <u>(pCi/m³)</u>	<u>Fish</u> <u>(pCi/kg, wet)</u>	<u>Milk</u> <u>(pCi/L)</u>	<u>Vegetables</u> <u>(pCi/kg, wet)</u>
H-3	20,000*				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-Nb-95	400				
I-131	2**	0.9		3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba-La-140	200			300	

* For drinking water samples. This is the 40 CFR Part 141 value. If no drinking water pathway exists, a value of 30,000 pCi/L may be used.

** If no drinking water pathway exists, a value of 20 pCi/L may be use.



MARINE SAMPLES

A total of 161 marine samples were collected and analyzed. They included 39 fish samples, 25 abalone samples, 16 mussel samples, 79 algae samples, and 2 ocean bottom sediment samples. Table B-6 lists the marine samples collected for 1989. The results obtained from the indicator stations and control station are summarized in Appendix A, Tables A-3, A-4, and A-5. Appendix B, Table B-2 lists the individual samples and their detected nuclides.

Abalone: At station DCM, the red abalone sample collected in the fourth quarter contained Co-58 (3.43E1 pCi/kg). No radionuclides other than naturally occurring radionuclides were detected in the other samples collected from station DCM, special interest stations PON, POS, and control station 7C2.

The Co-58 activity concentration detected in the red abalone sample was well below reporting levels.

California mussels: Co-58 and Co-60 were detected in mussels collected at station DCM, and special interest stations PON and POS. None were detected in mussel samples from control station 7C2.

The activity concentration of Co-58 in samples with positively detected activity from station DCM ranged from 2.83E1 to 1.26E2 pCi/kg with a mean of 7.23E1 pCi/kg. At station PON, Co-58 was detected in two samples; the activity concentration ranged from 6.34E1 to 6.53E1 with a mean of 6.44E1 pCi/kg. Co-58 was not detected in samples collected from stations POS and 7C2.

The activity concentration of Co-60 in samples with positively detected activity from station DCM ranged from 5.10E1 to 6.88E1 pCi/kg with a mean of 6.01E1 pCi/kg. At station PON, it ranged from 4.40E1 to 8.09E1 pCi/kg with a mean of 6.41E1 pCi/kg. At station POS, it ranged from 3.32E1 to 3.86E1 pCi/kg with a mean of 3.59E1 pCi/kg. None was detected at station 7C2.

1 8 1 2



All radioactivity concentration of detected nuclides were well below reporting levels.

Fish: Cs-137 was the principal radionuclide detected in commercial fish samples collected from station 7D3. Its value ranged from 5.95E0 to 1.66E1 pCi/kg with a mean of 1.08E1 pCi/kg. Cs-137 was also detected in rockfish samples collected from stations DCM and PON. Their values were 8.82E0 and 1.08E1 pCi/kg respectively. These values were comparable to those found in the commercial fish samples. The Cs-137 values obtained were also within the range of preoperational measurements which were considered to be due to global fallout.

Only naturally occurring radionuclides were detected in the other fish samples analyzed.

Algae: A total of 79 algae samples (iridaea and bull kelp) were analyzed. Two sample of iridaea collected from station DCM contained Co-58 and Co-60. The second quarter sample contained 1.09E1 pCi/kg Co-58 and 9.13E0 pCi/kg Co-60. The third quarter sample contained 6.56E0 pCi/kg Co-58 and 1.23E1 pCi/kg Co-60. These radionuclides were not detected in the iridaea samples collected at control station 7C2.

Attempts were made to sample monthly the bull kelp bed in the environ of DCP. However, at station DCM, kelp was available only in August and November. At station 7C2, it was unavailable in July. At station PON, it was unavailable in March; and in February, only the pneumatocyst was available.

Gamma analyses of the bull kelp samples indicated that the January sample from station 7C2 contained 5.20E1 pCi/kg I-131. Samples collected in April from stations 7C2, PON, and POS also contained I-131. Their values were 2.58E1, 1.01E1 and 5.86E0 pCi/kg respectively. The November kelp sample (both pneumatocyst and blade) from station DCM contained both Co-58 and I-131. The blade contained 1.44E1 pCi/kg Co-58 and 3.52E1 pCi/kg I-131; the pneumatocyst, 4.73E0 pCi/kg Co-58 and 7.78E0 pCi/kg I-131. The kelp sample collected in November from station 7C2 also contained 9.80E0 pCi/kg I-131.

100



All radioactivity concentrations of the detected nuclides were well below the reporting levels.

Sediment: An annual sample of ocean bottom sediment was collected from stations DCM and 7C2. Gamma analysis showed that the sample collected at DCM contained 6.52E1 pCi/kg Co-60 and 2.80E1 pCi/kg Cs-137 (based on dry weight). The radionuclide Co-60 detected was plant-related. The sample collected at control station 7C2 contained 1.29E1 pCi/kg of Cs-137. The Cs-137 values were within the preoperational range.

FOOD CROPS

A total of 35 vegetative samples were collected from three sampling locations: Cal Poly Farm (station 5F2), Kawaoka Farm (station 7G1), and Mello Farm (station 7C1). The samples analyzed contained only naturally occurring radioactivity. The operation of DCPD had no impact on this environmental medium.

MILK

A total of 12 monthly milk samples were collected from Cal Poly Farm, station 5F2. No I-131 was detected in any of the samples. The operation of the plant did not impact this dose pathway to man.



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COMPARISON OF PREOPERATIONAL AND OPERATIONAL DATA

Diablo Canyon Power Plant began commercial operation in 1985. Data from the preoperational years, 1981 to 1984, will be used for comparison with the data from the operational years.

AIRBORNE RADIOACTIVITY

Air Particulates:

<u>Year</u>	<u>Gross Beta Analysis</u>	
	<u>All Indicator Stations</u> Mean (range) pCi/m ³	<u>All Control Stations</u> Mean (range) pCi/m ³
1981	0.189 (0.004-0.766)	0.162 (0.008-0.635)
1982	0.016 (0.004-0.045)	0.016 (0.004-0.044)
1983	0.011 (0.003-0.037)	0.012 (0.003-0.039)
1984	0.012 (0.004-0.033)	0.010 (0.005-0.033)
1985	0.016 (0.003-0.057)	0.017 (0.003-0.069)
1986	0.040 (0.002-0.671)	0.042 (0.001-0.654)
1987	0.014 (0.004-0.051)	0.016 (0.004-0.052)
1988	0.014 (0.002-0.073)	0.014 (0.003-0.050)
1989	0.016 (0.001-0.085)	0.018 (0.001-0.081)

Comparing the preoperational (1981-1984) and the operational (1985-1989) data for gross beta activity for air particulates⁽²⁾, it can be seen that the mean gross beta activities from all stations for 1985, and 1987 through 1989 were within the preoperational range. However, for 1986 the mean value for all stations was higher than that for 1985, and 1987 through 1989. This was attributed to fallout from the Chernobyl accident in the USSR, and not due to plant operations. The range seen in 1986 was observed to be similar to that seen in 1981. This high gross beta activity was attributed to fallout from Chinese atmospheric nuclear weapons testing.

Radioiodine: During the preoperational period, iodine-131 was not detected in 1981 through 1983. However, in 1984, I-131 was detected in three iodine cartridges from Lompoc (in Santa Barbara County). The mean activity concentration was 0.108 pCi/m³ and the range was 0.014 to 0.159 pCi/m³. Despite a thorough investigation, no explanation could be found for the source of the I-131 (see the 1984 Annual Environmental Radiological Report, Diablo Canyon Power Plant). No I-131 was detected at any other station that year.



In 1985 and 1987, no radioiodine was detected at any of the stations. In 1986, I-131 was detected in the second quarter at all stations which was attributed to the Chernobyl fallout. In 1988, one of the cartridges collected at station 8S1 in the first quarter contained 0.004 pCi/m³ I-131. This concentration was well below the reporting level for I-131. In 1989, no I-131 was detected in the iodine cartridges from all indicator and control stations.

DIRECT RADIATION:

Year	Environmental TLD data (mR/yr)	
	All indicator stations mean (range)	All control stations mean (range)
1981	74.2 (47.3-98.2)	57.8 (53.5-62.1)
1982	71.9 (48.6-95.7)	57.8 (52.3-61.7)
1983	61.2 (40.7-84.9)	50.0 (46.1-53.9)
1984	77.2 (49.6-106.9)	62.0 (57.8-66.1)
1985	75.3 (48.7-96.8)	59.8 (54.9-64.7)
1986	73.0 (47.7-97.5)	61.7 (1 station only)
1987	69.5 (42.9-94.4)	56.8 (")
1988	60.1 (40.2-84.3)	50.5 (")
1989	67.4 (44.5-92.2)	52.3 (")

Comparing the TLD data in the table above for the preoperational years (1981-1984) and the operational years, it can be seen that the data collected for 1985 through 1989 are within the preoperational range.

WATER SAMPLES

Seawater: Only naturally occurring radioactivity was detected in seawater samples during the preoperational period. In 1989, all the seawater samples analyzed contained only naturally occurring radioactivity also. The operation of the plant did not contribute significantly to the radioactivity in seawater in the Diablo Canyon environs.

Surface Water: During the preoperational period (1981-1984), no tritium was detected in any of the surface water samples. However, Zr-95 (11.3 pCi/L), Nb-95 (15.2 pCi/L), and Ru-103 (5.3 pCi/L) were detected in one sample during this preoperational period. The presence of these radionuclides was



attributed to global fallout from Chinese nuclear weapons testing. For the rest of the preoperational period only naturally occurring radioactivity was detected. For 1989, only naturally occurring radionuclides were detected in the samples analyzed. The operation of the plant had no impact on the surface water in the Diablo Canyon environs.

Drinking Water: In 1981, Nb-95 (1.84 pCi/L) was detected in one sample which was attributed to global fallout. Only naturally occurring nuclides were detected in all other samples collected during the preoperational period. The results for 1989 were found to be within preoperational range and did not contain any plant-related nuclides. The operation of the plant had no impact on the drinking water at Diablo Canyon.

Outfall Water: Only naturally occurring radionuclides were detected during the preoperational years. During 1987, tritium (6.21E2 pCi/L) was detected in one outfall water sample. This level did not impact the plant environs significantly. In 1989, tritium (8.65E3 pCi/L) was detected in a fourth quarter sample which coincided with Unit 1 outage in December. This tritium level was below the reporting level.

MARINE SAMPLES

Fish: The principal radionuclide detected in fish samples was Cs-137. The presence of this nuclide in the environment is attributed to global fallout from weapons testing and the Chernobyl incident. Due to a long half-life, it was detected as part of the environmental background in fish samples. The Cs-137 content in fish samples collected for DCCP environmental monitoring program from 1981 to 1989 are as follows:

<u>Year</u>	<u>All indicator stations Mean (range) pCi/kg</u>	<u>All control stations Mean (range) pCi/kg</u>
1981	11.8 (8.4-16.1)	24.6 (17.5-38.2)
1982	11.4 (10.5-12.3)	17.8 (10.7-30.4)
1983	11.0 (1 sample)	15.9 (8-26)
1984	None detected	16.4 (7-23)
1985	23.8 (20-28)	19.6 (11-19)
1986	None detected	19.0 (13-25)
1987	8.0 (1 sample)	9.0 (1 sample)
1988	None detected	None detected
1989	8.8 (1 sample)	None detected

100



In 1989, Cs-137 was detected in rockfish samples collected at stations DCM (an indicator station) and PON (a special interest station). Their values were 8.8 and 10.8 pCi/kg respectively. These values were within the preoperational range.

During the operational years from 1986 to 1988, some plant-related nuclides other than Cs-137 were detected in fish samples collected at stations DCM and PON. They are listed as follows.

<u>Year</u>	<u>Station</u>	<u>Nuclides</u>	<u>Activity concentration pCi/kg original</u>
1986	DCM	I-131	70
1987	PON	Co-58	53
1988	DCM	Co-60	37

These activity concentrations were well below reporting levels. In 1989, only naturally occurring nuclides were detected in the fish samples.

Abalone: Only naturally occurring radionuclides were detected in samples collected during the preoperational period. However, during the operational years 1985-1989 some plant-related nuclides were also detected in the samples. They were as follows:

<u>Year</u>		<u>All indicator stations Mean (range) pCi/kg</u>	<u>All control stations Mean (range) pCi/kg</u>
1985	Co-58	81 (1 sample)	24 (1 sample)
1986	Co-58	154 (37-230)	None detected
	Co-60	33 (18-47)	None detected
1987	Co-58	40 (26-53)	None detected
	Co-60	35 (18-52)	None detected
1988	Co-58	67 (1 sample)	None detected
	Co-60	36 (1 sample)	None detected
1989	Co-58	34 (1 sample)	None detected

All activity concentrations detected were below the reporting levels.



Mussels: All samples collected during the preoperational period contained only naturally occurring radionuclides. However, samples collected in 1985 through 1989 contained nuclides that were plant-related. They are listed as follows:

<u>Year</u>		<u>All indicator stations Mean (range) pCi/kg</u>	<u>All control stations Mean (range) pCi/kg</u>
1985	Co-58	483 (245-853)	66 (21-109)
	Co-60	138 (106-170)	None detected
1986	Co-58	852 (208-1710)	284 (159-508)
	Co-60	158 (52-218)	78 (50-11)
	Mn-54	34 (1 sample)*	None detected
	Nb-95	43 (1 sample)*	None detected
1987	Co-58	453 (111-1100)	None detected
	Co-60	142 (56-262)	None detected
1988	Co-58	265 (219-343)	None detected
	Co-60	116 (89-131)	18 (1 sample)
1989	Co-58	72 (28-126)	None detected
	Co-60	60 (51-69)	None detected

All activity concentrations detected were below the reporting levels.

Algae: Algae samples analyzed during the preoperational period contained only natural radioactivity. However, some samples collected from 1985 through 1989 did contain the following isotopes:

<u>Year</u>		<u>All indicator stations Mean (range) pCi/kg</u>	<u>All control stations Mean (range) pCi/kg</u>
1985	Co-58	179 (9-431)	53 (29-98)
	Co-60	190 (24-881)	None detected
	Mn-54	79 (11-349)	14 (1 sample)
	Cs-137	None detected	22 (1 sample)
1986	Co-58	298 (44-624)	48 (14-109)
	Co-60	70 (13-172)	6 (1 sample)
	Mn-54	24 (15-35)	None detected
	I-131	396 (31-1180)	18 (8-28)
	Fe-59	285 (1 sample)*	None detected
	Cr-51	322 (1 sample)*	None detected



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1

1987	Co-58	131 (5-591)	None detected
	Co-60	92 (27-129)	None detected
	Mn-54	26 (9-65)	None detected
	I-131	57 (33-91)	7 (1 sample)
	Cs-137	None detected	4 (1 sample)
	Nb-95	11 (1 sample)	None detected
1988	Co-58	130 (19-523)	None detected
	Co-60	135 (1 sample)	None detected
	Mn-54	12 (1 sample)	None detected
	I-131	None detected	22 (1 sample)
1989	Co-58	9 (5-14)	None detected
	Co-60	11 (9-12)	None detected
	I-131	23 (8-35)	29 (10-52)

* contained in the same sample collected for that year

The activity concentrations of the radionuclides detected were well below reporting levels.

Sediment: Sediment samples collected during preoperational and operational years from DCPD environs, did contain Cs-137 attributed to global fallout from previous nuclear weapons testing. Their activity concentrations are summarized below.

<u>Year</u>		<u>All indicator stations</u>	<u>All control stations</u>
		<u>Mean (range) pCi/kg (dry)</u>	<u>Mean (range) pCi/kg (dry)</u>
1981	Cs-137	28 (17.8-34.3)	None detected
1982	Cs-137	40 (30-50)	25.7 (24-27)
1983	Cs-137	21 (10.6-30.5)	65.6 (37.6-93.6)
1984	Cs-137	None detected	83 (1 sample)
1985	Cs-137	25 (17-39)	36 (1 sample)
1986	Cs-137	None detected	None detected
1987	Cs-137	23 (1 sample)	None detected
1988	Cs-137	None detected	39 (1 sample)
1989	Cs-137	28 (1 sample)	13 (1 sample)

The data in the table above shows that Cs-137 activity concentration found in the 1989 sediment sample was within the preoperational range.



Besides Cs-137, sediment samples collected at indicator station DCM from 1985 to 1989 contained radionuclides that were plant-related. They are listed as follows:

<u>Year</u>		<u>Station DCM</u> <u>Mean(range) pCi/kg (dry)</u>
1985	Mn-54	51 (37-64)
	Fe-59	119 (66-148)
1986*	Mn-54	55
	Co-58	277
	Co-60	109
1987*	Co-58	20
	Co-60	33
1988*	Co-58	27
	Co-60	102
1989*	Co-60	65

* only one annual sample is collected at station DCM

The radionuclides activity concentrations detected did not significantly impact the plant environs.

FOOD CROPS

In 1981, during the preoperational period, Cs-137 was detected in the vegetable samples. This was probably due to fallout from weapons testing. The mean activity concentration was 48 pCi/kg and the range was 2.6-136 pCi/kg. It was not detected in subsequent years until 1986. In 1986, the activity concentration was found in only one sample (9 pCi/kg). This sample was collected during the period that followed the Chernobyl accident.

Also in June 1986, I-131, Cs-134, and Ru-103 (see table below) were detected in vegetative samples from the indicator stations and I-131 was detected at a control station. Their presence was attributed to global fallout from the Chernobyl accident.



<u>Year</u>		All indicator stations	All control stations
		<u>Mean (range)pCi/kg wet</u>	<u>Mean (range)pCi/kg wet</u>
1986	I-131	27 (4-49)	90 (one sample)
	Cs-134	4 (one sample)	none detected
	Ru-103	9 (one sample)	none detected
	Cs-137	9 (one sample)	none detected

In 1989, the samples collected from indicator and control stations were found to contain only natural radioactivity.

MILK

During the preoperational period, Cs-137 was detected only in samples collected in 1981; the mean and range at indicator and control stations were 1.59 (1.11-2.06) and 1.73 (1.35-2.29) pCi/L respectively. Cs-137 was not detected in any of the milk samples from 1982 to 1986. However, in 1987, it was detected in one sample (2 pCi/L) from station 8H1. (This station, Caroni Dairy, closed in 1988.) In 1989, Cs-137 was not detected in any of the milk samples collected.

During the preoperational years, I-131 was not detected in any milk samples collected. However, in 1986, due to global fallout during the Chernobyl accident, I-131 was detected in two samples from station 8H1 and one sample from station 5F2. Their values were as follows:

<u>Station</u>	<u>Collection Date</u>	<u>I-131 pCi/L</u>
8H1	5/19/86	89
5F2	5/19/86	2
8H1	6/23/86	2

I-131 was not detected in samples collected and analyzed in subsequent years (1987-1989).



PROGRAM VARIANCE

AIRBORNE RADIOACTIVITY

Some collection time was lost during the collection periods because of mechanical failure of the equipment, electrical circuit problems or power failure. In some cases, the air sampler was down during the entire collection period and no sample was collected. Table 7 lists the stations, the description of the related problems that occurred, and also their corresponding collection periods.

At station 2F2, the collection period (7/12/89 - 7/20/89) exceeded the 7-day requirement for air sample exchange by 1 day due to personnel error.

Air particulate filter and iodine cartridge samples are collected weekly from each air sampling station. During the collection period (3/22/89 - 3/28/89), the air sampler was not changed out at station 8S2 because of a technician's oversight. The sample was collected at the end of the following period and analyzed.

On the occasions when the air samplers were out of service, the data from stations in the vicinity were reviewed. It was determined that these variances were insignificant. The down time of the samplers at each station were tracked throughout the year and it was found that the mean percent availability for all on-site and off-site samplers was 98.6 percent (i.e., on the average, all the samplers were up and running 98.6% of the time).

TERRESTRIAL SAMPLES

Vegetative samples are collected monthly at three stations: 5F2, 7G1 and 7C1. In November, vegetative greens were not collected at station 7G1 because of seasonal unavailability.

Milk samples are usually collected once per quarter at Cal Poly Farm (station 5F2). This frequency has now been changed to monthly instead of quarterly. In the month of May, the milk sample from station 5F2 was not



TABLE 7

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
SUMMARY OF AIR SAMPLER UNAVAILABILITY

<u>Station</u>	<u>Collection Period</u>	<u>Problem Description</u>
MT1	02/28 - 03/06/89	Time lost due to electrical problem - circuit breaker failed.
	03/06 - 03/10/89	Electrical problem - circuit breaker failed.
7D1	09/18 - 09/28/89	Electrical problem.
5F1	02/28 - 03/06/89	Power failure.
	07/07 - 07/12/89	Time lost due to equipment failure.
	07/28 - 08/03/89	Time lost due to equipment failure.
	08/25 - 08/31/89	Time lost due to equipment failure.
2F2	01/04 - 01/11/89	Equipment failure.
	07/12 - 07/20/89	Sample collection period exceeded seven days.
1S1	03/28 - 04/03/89	Time lost due to electrical problem.
	04/03 - 04/07/89	Time lost due to electrical problem.
8S1	06/15 - 06/20/89	Power failure - power at breaker box was turned off.
8S2	03/22 - 03/28/89	Sampler was not changed out - sample was collected at the end of the following period.



collected because it was omitted from the collection schedule. The responsible technician was advised to verify monthly schedules when they are prepared.

MARINE SAMPLES

Marine sample collection is subject to seasonal unavailability and unfavorable weather and sampling conditions. Every possible effort was made to collect these samples. However, at station DCM, a perch sample was not collected in the third quarter because of seasonal unavailability.



REFERENCES

1. Environmental Radiological Monitoring Procedures - DCPD (Normal Operations), Pacific Gas and Electric Co. Technical and Ecological Services, Quality Control Manual, Volume V-A.
2. 1981-1988 Annual Environmental Radiological Reports, Diablo Canyon Power Plant. Pacific Gas and Electric Co.
3. NRC Branch Technical Position on Environmental Monitoring for Direct Radiation, Revision 1, November 1979.
4. Environmental Monitoring Program for Diablo Canyon Units 1 and 2 Technical Specifications, Section 3/4.12.



Appendix A

ENVIRONMENTAL RADIATION 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 Report Period 1/1/89-12/31/89
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	Indicator Location with Highest Annual Mean Name, Distance and Direction	Mean(b) Range(b)	All Indicator Locations Mean(b) Range(b)	All Control Locations Mean(b) Range(b)	Number of Reportable Occurrences
Seawater (pCi/L)	Gamma Isotopic (48)						0
	54Mn				None detected	None detected	
	59Fe				None detected	None detected	
	58Co				None detected	None detected	
	60Co				None detected	None detected	
	65Zn				None detected	None detected	
	95Zr				None detected	None detected	
	95Nb				None detected	None detected	
	131I				None detected	None detected	
	134Cs				None detected	None detected	
	137Cs				None detected	None detected	
	140Ba				None detected	None detected	
	140La				None detected	None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.



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 Report Period 1/1/89-12/31/89
 (County, State)

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Location (c) Name, Distance and Direction</u>	<u>Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Surface water (pCi/L)	Tritium (12)		Sta. 5S2 0.6 mi, 65°	None detected	0
	Gamma Isotopic (12)			0	
	54Mn			None detected	
	59Fe			None detected	
	58Co			None detected	
	60Co			None detected	
	65Zn			None detected	
	95Zr			None detected	
	95Nb			None detected	
	131I			None detected	
	134Cs			None detected	
	137Cs			None detected	
	140Ba			None detected	
140La		None detected			

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

(c) Only one station location for this sample type; therefore, no control stations are listed.



TABLE A-1c

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 Report Period 1/1/89-12/31/89
 (County, State)

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Location (c) Name, Distance and Direction</u>	<u>Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Drinking water (pCi/L)	Tritium (12)		Sta. DW1 0.0 mi, in plant	None detected	0
	Gamma Isotopic (12)				0
	54Mn			None detected	
	59Fe			None detected	
	58Co			None detected	
	60Co			None detected	
	65Zn			None detected	
	95Zr			None detected	
	95Nb			None detected	
	131I			None detected	
	134Cs			None detected	
	137Cs			None detected	
	140Ba			None detected	
	140La			None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

(c) Only one station location for this sample type; therefore, no control stations are listed.



TABLE A-1d

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 Report Period 1/1/89-12/31/89
 (County, State)

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Location (c) Name, Distance and Direction</u>	<u>Mean (b) Range</u>	<u>Number of Reportable Occurrences</u>
Outfall water (pCi/L)	Tritium (12)		Sta. OUT 0.2 mi, 270°	8.65E3 (1/12) (0-8.65E3)	0
	Gamma Isotopic (12)				0
	54Mn			None detected	
	59Fe			None detected	
	58Co			1.31E1 (1/12) (0-1.31E1)	
	60Co			None detected	
	65Zn			None detected	
	95Zr			None detected	
	95Nb			None detected	
	131I			None detected	
	134Cs			None detected	
	137Cs			None detected	
	140Ba			None detected	
	140La			None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

(c) Only one station location for this sample type; therefore, no control stations are listed.



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 Report Period 1/1/89-12/31/89
 (County, State)

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location with Highest Annual Mean Name, Distance and Direction</u>	<u>Mean(b) Range(b)</u>	<u>All Indicator Locations Mean(b) Range(b)</u>	<u>All Control Locations Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Airborne (pCi/m ³)	131I (cartridge) (501)				None detected	None detected	0
	Gross Beta (air particulates) (501)		Sta. 5F1 11.2 mi, 68°	1.6E-2 1.0E-3-8.5E-2	1.6E-2(449/449) 1.0E-3-8.5E-2	1.8E-2(52/52) 1.0E-3-8.1E-2	0
	Gamma Isotopic (air particulates) (501)				ND	ND	0

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE A-3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility Diablo Canyon Power Plant
 Location of Facility San Luis Obispo, California
 (County, State)

Docket No. 50-275 and 50-323
 Report Period 1/1/89-12/31/89

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location (c) Name, Distance and Direction</u>	<u>Indicator Location Mean(b) Range(b)</u>	<u>All Control Locations Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Fish and seafood (pCi/kg wet)	Gamma Isotopic (43)		Sta. DCM 0.2 mi, 270°	Sta. DCM	Sta. 7C2	0
	54Mn			None detected	None detected	
	59Fe			None detected	None detected	
	58Co			6.28E1(4/26) 2.83E1-1.26E2	None detected	
	60Co			6.01E1(3/26) 5.10E1-6.88E1	None detected	
	65Zn			None detected	None detected	
	134Cs			None detected	None detected	
	137Cs			1.05E1(7/26) 5.95E0-1.66E1	None detected	
	131I			None detected	None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

(c) Only one indicator location for this sample type.



TABLE A-4

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility Diablo Canyon Power Plant
 Location of Facility San Luis Obispo, California
 (County, State)

Docket No. 50-275 and 50-323
 Report Period 1/1/89-12/31/89

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location (c) Name, Distance and Direction</u>	<u>Indicator Location Mean(b) Range(b)</u>	<u>All Control Locations Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Algae (pCi/kg wet)	Gamma Isotopic (33)		Sta. DCM 0.2 mi, 270°	Sta. DCM	Sta. 7C2	0
	54Mn			None detected	None detected	
	59Fe			None detected	None detected	
	57Co			None detected	None detected	
	58Co			9.15E0(4/7) 4.73E0-1.44E1	None detected	
	60Co			1.07E1(2/7) 9.13E0-1.23E1	None detected	
	131I			2.27E1(2/7) 7.78E0-3.52E1	2.92E1(3/26) 9.80E0-5.20E1	
	134Cs			None detected	None detected	
	137Cs			None detected	None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

(c) Only one indicator location for this sample type.



TABLE A-5

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility Diablo Canyon Power Plant
 Location of Facility San Luis Obispo, California
 (County, State)

Docket No. 50-275 and 50-323
 Report Period 1/1/89-12/31/89

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location (c) Name, Distance and Direction</u>	<u>Indicator Location Mean(b) Range(b)</u>	<u>All Control Locations Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Sediment (pCi/kg dry)	Gamma Isotopic (2)		Sta. DCM 0.2 mi, 270°	Sta. DCM	Sta. 7C2	0
	54Mn			None detected	None detected	
	59Fe			None detected	None detected	
	58Co			None detected	None detected	
	60Co			6.52E1(1/1)	None detected	
	65Zn			None detected	None detected	
	134Cs			None detected	None detected	
	137Cs			2.80E1(1/1)	1.29E1(1/1)	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

(c) Only one indicator location for this sample type.



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 Report Period 1/1/89-12/31/89
 (County, State)

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location with Highest Annual Mean Name, Distance and Direction</u>	<u>Mean(1)(b) Range(b)</u>	<u>All Indicator Locations Mean(1)(b) Range(b)</u>	<u>All Control Locations Mean(1)(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Milk (pCi/L)	131I (12)					Sta. 5F2 None detected	0
	Gamma Isotopic (12)					ND	0
	134Cs					None detected	
	137Cs					None detected	
	140Ba					None detected	
	140La					None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE A-7

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility Diablo Canyon Power Plant
 Location of Facility San Luis Obispo, California
 (County, State)

Docket No. 50-275 and 50-323
 Report Period 1/1/89-12/31/89

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location with Highest Annual Mean</u>	<u>All Indicator Locations Mean(b) Range(b)</u>	<u>All Control Locations Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
Food crops (pCi/kg wet)	Gamma Isotopic (35)			Sta. 7G1, 7G1	Sta. 5F2	0
	131I			None detected	None detected	
	134Cs			None detected	None detected	
	137Cs			None detected	None detected	

(a) Unless specified, all required LLDs were met in accordance with Table 5.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis e.g. (10/12) means 10 samples out of 12 collected showed activity.



TABLE A-8

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 Report Period 1/1/89-12/31/89
 (County, State)

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection(a) (LLD)</u>	<u>Indicator Location with Highest Annual Mean</u>		<u>All Indicator Locations Mean(b) Range(b)</u>	<u>All Control Locations Mean(b) Range(b)</u>	<u>Number of Reportable Occurrences</u>
			<u>Name, Distance and Direction</u>	<u>Mean(b) Range(b)</u>			
Direct radiation (mR)	TLD Packets (384)	3 mR/qtr	Sta. 5S1 0.4 mi, 48°	23.1 mR/qtr (12/12) 20.1-25.4 mR/qtr	16.8 mR/qtr (372/372) 11.1-23.1 mR/qtr	Sta. 2F2 13.1 mR/qtr (12/12) 12.1-15.1 mR/qtr	0
				92.2 mR/yr	67.4 mR/yr (372/372) 44.5-92.2 mR/yr	52.3 mR/yr	

(a) Sensitivity of TLD system.

(b) Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis; e.g., (10/12) means 10 samples out of 12 collected showed activity.



TABLE A-9

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT⁽¹⁾
 EPA ENVIRONMENTAL RADIOLOGICAL LABORATORY INTERCOMPARISON STUDIES PROGRAM

<u>Sample Type</u>	<u>Radionuclide</u>	<u>Month</u>	<u>DER</u>	<u>EPA</u>	<u>ALL⁽²⁾</u>	<u>DER/EPA</u>	<u>DER/ALL</u>	
Air Filter	Gross Alpha	Mar.	21.00	21.00	22.64	1.00	0.93	
		Aug.	6.00	6.00	6.51	1.00	0.92	
	Gross Beta	Mar.	65.67	62.00	63.14	1.06	1.04	
		Aug.	invalid results per EPA					
	Cs-137	Mar.	13.33	20.00	21.31	0.67	0.63	
		Aug.	12.00	10.00	10.79	1.20	1.11	
Sr-90	Mar.	18.33	20.00	19.21	0.92	0.95		
Milk	I-131	Apr.	4.67	4.00	*	1.17	*	
	Cs-137	Apr.	55.67	50.00	49.86	1.11	1.12	
	K-40	Apr.	15.18	16.00	16.46	0.95	0.92	
Water	H-3	Feb.	28.60	27.54	27.23	1.04	1.05	
		Jun.	47.30	45.03	44.91	1.05	1.05	
		Oct.	34.63	34.96	34.71	0.99	1.00	
	Sr-89	Jan.	40.67	40.00	38.04	1.02	1.07	
		Apr.	8.67	8.00	7.87	1.08	1.10	
		May	5.67	6.00	5.90	0.95	0.96	
	Sr-90	Oct.	14.00	15.00	14.14	0.93	0.99	
		Jan.	20.33	25.00	24.39	0.81	0.83	
		Apr.	6.67	8.00	7.78	0.83	0.86	
		May	5.33	6.00	5.56	0.89	0.96	
		Oct.	6.33	7.00	6.54	0.90	0.97	
		Feb.	11.03	10.60	10.62	1.04	1.04	
	I-131	Aug.	91.67	83.00	84.41	1.10	1.09	
		Feb.	23.60	23.50	23.27	1.00	1.01	
	Cr-51	Feb.	9.33	10.00	10.65	0.93	0.88	
	Co-60	Jun.	30.67	31.00	31.04	0.99	0.99	
		Oct.	30.33	30.00	30.49	1.01	0.99	
		Feb.	16.37	15.90	16.02	1.03	1.02	
	Zn-65	Jun.	17.37	16.50	16.69	1.05	1.04	
		Oct.	13.30	12.90	12.87	1.03	1.03	
		Feb.	16.20	17.80	17.12	0.91	0.95	
	Ru-106	Jun.	12.50	12.80	12.33	0.98	1.01	
		Oct.	14.77	16.10	15.27	0.92	0.97	
Jun.		47.00	49.00	47.58	0.96	0.99		
Ba-133	Oct.	57.00	59.00	57.72	0.97	0.99		
	Feb.	9.67	10.00	9.73	0.97	0.99		
Water	Cs-134	Apr.	18.67	20.00	19.12	0.93	0.98	
		Jun.	37.67	39.00	37.26	0.97	1.01	
		Oct.	26.67	29.00	27.34	0.92	0.98	
		Oct.	4.00	5.00	5.15	0.80	0.78	



TABLE A-9 - Continued

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT⁽¹⁾
 EPA ENVIRONMENTAL RADIOLOGICAL LABORATORY INTERCOMPARISON STUDIES PROGRAM

<u>Sample Type</u>	<u>Radionuclide</u>	<u>Month</u>	<u>DER</u>	<u>EPA</u>	<u>ALL⁽²⁾</u>	<u>DER/EPA</u>	<u>DER/ALL</u>
Water	Cs-137	Feb.	10.00	10.00	10.74	1.00	0.93
		Apr.	21.00	20.00	20.24	1.05	1.04
		Jun.	20.33	20.00	20.92	1.02	0.97
		Oct.	61.33	59.00	61.37	1.04	1.00
		Oct.	5.00	5.00	5.93	1.00	0.84
	Gross Alpha	Jan.	7.33	8.00	7.88	0.92	0.93
		Apr.	23.00	29.00	25.75	0.92	1.00
		May	27.67	30.00	27.64	0.83	0.76
		Sep.	3.33	4.00	4.38	0.83	0.76
		Oct.	24.33	49.00	45.13	0.50	0.54
	Gross Beta	Jan.	3.00	4.00	5.41	0.75	0.55
		Apr.	5.20	5.70	5.04	0.91	1.03
		May	50.33	50.00	50.31	1.01	1.00
		Sep.	5.33	6.00	6.70	0.89	0.80
		Oct.	30.33	32.00	30.61	0.95	0.99

(1) All of the values shown are relative therefore, the total activity or concentration levels are not indicated.

(2) The "ALL" designation refers to all participating laboratories which performed similar analyses. Those values considered by EPA to be statistical outliers are excluded.

* No data was available from EPA



Appendix B
SAMPLE ANALYTICAL RESULTS



TABLE B-1

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
1989 STATE CROSS-CHECK RESULTS

<u>SAMPLE</u>	<u>STATION</u>	<u>SAMPLE NO.</u>	<u>COLLECTION DATE</u>	<u>GAMMA ACTIVITY pCi/L ORIGINAL</u>	<u>K-40 ACTIVITY pCi/L or pCi/kg ORIGINAL</u>	<u>H-3 ACTIVITY pCi/L</u>	<u>I-131 ACTIVITY pCi/L or pCi/kg</u>
Drinking Water	DW1	89A36	01/12/89	ND	93	ND	ND
		89B56	02/15/89	ND	21	ND	ND
		89C46	03/17/89	ND	23	ND	ND
		89D40	04/13/89	ND	31	ND	ND
		89E75	05/16/89	ND	<29	ND	ND
		89F97	06/19/89	ND	94	ND	ND
		89G81	07/12/89	ND	<44	ND	ND
		89H83	08/10/89	ND	18	ND	ND
		89J50	09/18/89	ND	19	ND	ND
		89K19	10/11/89	ND	<27	ND	ND
		89L36	11/15/89	ND	78	ND	ND
		89M50	12/13/89	ND	< 3	ND	ND
		Milk	5F2	89A67	01/25/89	ND	1390
89B73	02/21/89			ND	1260	-	ND
*	--			-	--	-	ND
89F96	06/19/89			ND	1320	-	ND
89H14	07/25/89			ND	1380	-	ND
89I31	08/21/89			ND	1390	-	ND
89J82	09/27/89			ND	1450	-	ND
89K64	10/24/89			ND	1330	-	ND
89L42	11/20/89			ND	1400	-	ND
89M73	12/18/89	ND	1480	-	ND		

* No sample collected for May, 1989.



TABLE B-1, continued

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
1989 STATE CROSS-CHECK RESULTS

<u>SAMPLE</u>	<u>STATION</u>	<u>SAMPLE NO.</u>	<u>COLLECTION DATE</u>	<u>GAMMA ACTIVITY pCi/L ORIGINAL</u>	<u>K-40 ACTIVITY pCi/L or pCi/kg ORIGINAL</u>	<u>H-3 ACTIVITY pCi/L</u>	<u>I-131 ACTIVITY pCi/L or pCi/kg</u>
Outfall Water	OUT	89C93	01/04-03/09/89	ND	362	ND	-
		89F66	04/05-06/08/89	ND	405	ND	-
		89J54	07/05-09/05/89	ND	398	ND	-
		89N31	10/05-12/06/89	Co-60: 6±1	406	3020±390	-
Surface Water	5S2	89B08	02/08/89	ND	100	ND	-
		89E37	05/09/89	ND	92	ND	-
		89H80	08/02/89	ND	21	ND	-
		89L12	11/09/89	ND	106	ND	-
Abalone Meat	DCM	89B32	02/16/89	ND	3420	-	-
		89E68	05/08/89	ND	3650	-	-
		89H33	08/02/89	ND	3250	-	-
		89L80	11/20/89	ND	6650	-	-
Bull Kelp Blade	DCM	**	--	--	-	-	-
		**	--	--	-	-	-
		89I03	08/10/89	ND	11700	-	-
		89L84	11/20/89	Co-58: 5±2 I-131: 8±4	19100	-	-

** No sample available in the first and second quarter, 1989.



TABLE B-1, continued

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
1989 STATE CROSS-CHECK RESULTS

<u>SAMPLE</u>	<u>STATION</u>	<u>SAMPLE NO.</u>	<u>COLLECTION DATE</u>	<u>GAMMA ACTIVITY pCi/kg ORIGINAL</u>	<u>K-40 ACTIVITY pCi/L or pCi/kg ORIGINAL</u>	<u>H-3 ACTIVITY pCi/L</u>	<u>I-131 ACTIVITY pCi/L or pCi/kg</u>
Vegetable Greens	7G1	89B11	02/08/89	ND	3780	-	-
		89E39	05/09/89	ND	3830	-	-
		89H30	08/02/89	ND	4930	-	-
		89M30	12/06/89	ND	6330	-	-
Sediment	DCM	89H95	08/10/89	*Co-60: 65±15	15400		
				*Cs-137: 28±8			

* pCi/kg was determined using dry weight.

ND: Radionuclides of interest (related to power plant operations) other than naturally occurring were not detected.



DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
MARINE AND TERRESTRIAL SAMPLE DATA
DETECTED NUCLIDES (NONNATURALLY OCCURRING) - pCi/kg ORIGINAL

DESCRIPTION	STA. NO.	COLLECTION DATE	SAM. NO.	58Co	60Co	131I	137Cs	OTHER
Red Abalone Meat	DCM	12/20/89	89N01	3.43E1+1.69E1				
Iridaea	DCM	05/08/89	89E55	1.09E1+2.85E0	9.13E0+2.86E0			
Iridaea	DCM	08/02/89	89H32	6.56E0+2.54E0	1.23E1+2.83E0			
Bull Kelp Blade	7C2	02/15/89	89B35			5.20E1+1.61E1		
Bull Kelp Blade	7C2	04/13/89	89D49			2.58E1+4.73E0		
Bull Kelp Blade	7C2	11/15/89	89L28			9.80E0+5.65E0		
Bull Kelp Blade	DCM	11/20/89	89L83	1.44E1+3.20E0		3.52E1+7.10E0		
Bull Kelp Blade	PON	04/13/89	89D43			1.01E1+3.00E0		
Bull Kelp Blade	POS	04/13/89	89D46			5.86E0+3.08E0		
Bull Kelp Pneumatocyst	DCM	11/20/89	89L84	4.73E0+1.61E0		7.78E0+3.71E0		
Commercial Cod	7D3	05/27/89	89F52				7.76E0+3.22E0	
Commercial Cod	7D3	09/26/89	89J98				1.14E1+3.37E0	
Commercial Rockfish	7D3	11/08/89	89L05				5.95E0+2.26E0	
Commercial Salmon	7D3	05/27/89	89F54				8.46E0+5.72E0	
Commercial Snapper	7D3	05/27/89	89F53				1.66E1+3.76E0	
Commercial Snapper	7D3	09/26/89	89J99				1.47E1+2.79E0	
Rockfish	DCM	11/20/89	89L81				8.82E0+1.62E0	
Rockfish	PON	08/10/89	89H91				1.08E1+4.73E0	
California Mussels	DCM	02/15/89	89B42	6.25E1+2.03E1	6.88E1+2.51E1			
California Mussels	DCM	05/08/89	89E57	2.83E1+1.21E1	6.06E1+1.75E1			
California Mussels	DCM	11/16/89	89L79	1.26E2+3.73E1	5.10E1+1.75E1			
California Mussels	PON	02/15/89	89B44	6.34E1+1.69E1	8.09E1+1.65E1			
California Mussels	PON	05/08/89	89E59		4.40E1+1.42E1			
California Mussels	PON	08/02/89	89J71		5.18E1+1.61E1			
California Mussels	PON	11/16/89	89L74	6.53E1+2.30E1	7.97E1+1.59E1			
California Mussels	POS	05/08/89	89E61		3.86E1+2.10E1			
California Mussels	POS	08/02/89	89H40		3.32E1+1.92E1			
*Outfall Water	OUT	12/06/89	89M27	1.31E1+1.61E0				3H-8.65E3+5.19E2
*Outfall Water Composite	OUT	10/05/89	89N31	5.55E0+1.37E0				3H-3.02E3+3.90E2
**Sediment	7C2	08/10/89	89H97				1.29E1+5.64E0	
**Sediment	DCM	08/10/89	89H95		6.52E1+1.45E1		2.80E1+8.10E0	

* pCi/L.

** pCi/kg was determined using dry weight.



TABLE B-3

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 2F2 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
12/28/88-01/04/89	427.4	01/17/89	.001	.001	
01/04 - 01/11/89	3/				
01/11 - 01/18/89	429.2	01/28/89	.017	.002	
01/18 - 01/25/89	427.1	02/01/89	.032	.003	
01/25 - 02/01/89	427.4	02/08/89	.035	.003	
02/01 - 02/08/89	427.9	02/14/89	.014	.002	
02/08 - 02/15/89	429.7	02/24/89	.018	.002	
02/15 - 02/22/89	425.6	03/06/89	.018	.002	
02/22 - 03/01/89	430.2	03/07/89	.014	.002	
03/01 - 03/08/89	425.6	03/15/89	.009	.001	
03/08 - 03/15/89	427.9	03/24/89	.007	.001	
03/15 - 03/22/89	428.2	03/25/89	.009	.001	
03/22 - 03/29/89	429.2	04/08/89	.005	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
12/28/88-03/29/89	04/17/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 2F2 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
03/29/89-04/05/89	423.3	04/15/89	.008	.001	
04/05 - 04/12/89	428.7	04/16/89	.018	.002	
04/12 - 04/19/89	427.1	04/26/89	.021	.002	
04/19 - 04/26/89	428.2	05/01/89	.004	.001	
04/26 - 05/03/89	428.2	05/09/89	.009	.001	
05/03 - 05/10/89	427.9	05/17/89	.004	.001	
05/10 - 05/17/89	429.4	05/20/89	.008	.001	
05/17 - 05/24/89	426.9	06/01/89	.008	.001	
05/24 - 05/31/89	426.9	06/08/89	.006	.001	
05/31 - 06/07/89	428.2	06/17/89	.006	.001	
06/07 - 06/14/89	427.1	06/18/89	.008	.001	
06/14 - 06/21/89	428.2	07/02/89	.004	.001	
06/21 - 06/28/89	427.4	07/10/89	.007	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
03/29/89-06/28/89	07/19/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 2F2 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/28/89-07/05/89	428.2	07/14/89	.005	.001	
07/05 - 07/12/89	429.4	07/17/89	.008	.001	
07/12 - 07/20/89	501.5*	07/29/89	.004	.001	
07/20 - 07/26/89	357.3	08/04/89	.006	.001	
07/26 - 08/02/89	427.4	08/18/89	.006	.001	
08/02 - 08/09/89	427.6	08/19/89	.006	.001	
08/09 - 08/16/89	428.7	08/22/89	.006	.001	
08/16 - 08/23/89	434.3	09/03/89	.012	.001	
08/23 - 08/30/89	421.0	09/14/89	.010	.001	
08/30 - 09/06/89	428.4	09/15/89	.010	.001	
09/06 - 09/13/89	432.0	09/26/89	.016	.002	
09/13 - 09/20/89	423.1	09/29/89	.017	.002	
09/20 - 09/27/89	428.9	09/30/89	.013	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/28/89-09/27/89	10/26/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.

* Sample collection period exceeded seven-day requirement.



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12
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TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 2F2 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/27/89-10/04/89	427.1	10/11/89	.007	.001	
10/04 - 10/11/89	427.6	10/20/89	.033	.003	
10/11 - 10/18/89	427.6	10/23/89	.025	.003	
10/18 - 10/25/89	427.9	11/01/89	.020	.002	
10/25 - 11/01/89	430.4	11/10/89	.020	.002	
11/01 - 11/08/89	427.6	11/15/89	.049	.005	
11/08 - 11/15/89	428.2	11/22/89	.043	.004	
11/15 - 11/22/89	428.7	12/04/89	.058	.006	
11/22 - 11/29/89	427.9	12/15/89	.020	.002	
11/29 - 12/06/89	433.0	12/15/89	.042	.004	
12/06 - 12/13/89	423.3	12/22/89	.036	.004	
12/13 - 12/20/89	431.5	01/09/90	.054	.005	
12/20 - 12/27/89	423.1	01/13/90	.081	.007	
12/27 - 01/03/90	429.9	01/12/90	.024	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/27/89-01/03/90	01/23/90	ND	

- 1/ Unless specified, Iodine-131 was not detected.
 2/ No sample collected due to equipment failure.
 3/ Time lost due to equipment failure.
 4/ Power outage/failure occurred during collection period.
 5/ Electrical problem.
 ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION MT1 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	363.5	01/18/89	.014	.002	
01/09 - 01/13/89	241.5	01/27/89	.023	.003	
01/13 - 01/19/89	367.3	02/01/89	.018	.002	
01/19 - 01/25/89	379.0	02/01/89	.022	.002	
01/25 - 01/31/89	354.3	02/08/89	.031	.003	
01/31 - 02/06/89	368.8	02/13/89	.010	.001	
02/06 - 02/10/89	236.9	02/23/89	.018	.002	
02/10 - 02/16/89	375.9	02/24/89	.018	.002	
02/16 - 02/22/89	369.3	03/06/89	.015	.002	
02/22 - 02/28/89	363.2	03/07/89	.012	.002	
02/28 - 03/06/89	153.3 ^{5/}	03/14/89	.019	.003	
03/06 - 03/10/89	^{5/}				
03/10 - 03/16/89	364.5	03/24/89	.002	.001	
03/16 - 03/22/89	361.9	03/29/89	.005	.001	
03/22 - 03/28/89	363.7	04/07/89	.005	.001	
03/28 - 04/03/89	372.6	04/14/89	.005	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/18/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION MT1 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/03/89-04/07/89	230.8	04/15/89	.017	.002	
04/07 - 04/13/89	377.7	04/21/89	.012	.002	
04/13 - 04/19/89	367.5	04/26/89	.012	.002	
04/19 - 04/25/89	361.4	05/01/89	.002	.001	
05/01 - 05/05/89	245.0	05/15/89	.007	.001	
05/05 - 05/11/89	364.7	05/20/89	.003	.001	
05/11 - 05/17/89	368.8	05/28/89	.006	.001	
05/17 - 05/23/89	363.0	06/01/89	.008	.001	
05/23 - 05/29/89	356.1	06/08/89	.004	.001	
05/29 - 06/02/89	247.1	06/09/89	.005	.001	
06/02 - 06/08/89	376.2	06/17/89	.005	.001	
06/08 - 06/15/89	431.0	07/01/89	.006	.001	
06/15 - 06/20/89	283.5	07/02/89	.004	.001	
06/20 - 06/26/89	377.2	07/10/89	.006	.001	
06/26 - 06/30/89	245.8	07/14/89	.009	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/19/89	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION MT1 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	432.5	07/17/89	.004	.001	
07/07 - 07/12/89	307.7	07/20/89	.004	.001	
07/12 - 07/18/89	351.7	07/21/89	.006	.001	
07/18 - 07/24/89	377.9	08/04/89	.003	.001	
07/24 - 07/28/89	246.0	08/11/89	.008	.001	
07/28 - 08/03/89	354.7	08/18/89	.007	.001	
08/03 - 08/09/89	366.3	08/19/89	.004	.001	
08/09 - 08/15/89	376.7	08/22/89	.004	.001	
08/15 - 08/21/89	361.7	09/07/89	.006	.001	
08/21 - 08/25/89	256.5	09/03/89	.009	.001	
08/25 - 08/31/89	358.1	09/14/89	.006	.001	
08/31 - 09/06/89	368.8	09/15/89	.008	.001	
09/06 - 09/12/89	352.0	09/26/89	.011	.002	
09/12 - 09/18/89	374.9	09/26/89	.017	.002	
09/18 - 09/22/89	242.5	09/29/89	.009	.002	
09/22 - 09/28/89	360.4	10/06/89	.010	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/26/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION MT1 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	372.9	10/11/89	.008	.001	
10/04 - 10/10/89	361.2	10/17/89	.018	.002	
10/10 - 10/16/89	372.6	10/23/89	.019	.002	
10/16 - 10/20/89	243.8	11/01/89	.034	.004	
10/20 - 10/26/89	367.0	11/01/89	.012	.002	
10/26 - 11/01/89	369.3	11/10/89	.016	.002	
11/01 - 11/07/89	361.7	11/15/89	.030	.003	
11/07 - 11/13/89	372.1	11/17/89	.028	.003	
11/13 - 11/17/89	244.5	11/22/89	.024	.003	
11/17 - 11/22/89	303.4	12/04/89	.034	.004	
11/22 - 11/28/89	378.2	12/04/89	.018	.002	
11/28 - 12/04/89	370.8	12/15/89	.026	.003	
12/04 - 12/08/89	225.6	12/22/89	.031	.003	
12/08 - 12/14/89	332.3	12/22/89	.045	.004	
12/14 - 12/20/89	349.2	01/09/90	.062	.006	
12/20 - 12/26/89	334.0	01/09/90	.082	.008	
12/26 - 01/02/90	398.9	01/12/90	.033	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	01/23/90	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION OS2 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	374.4	01/19/89	.017	.002	
01/09 - 01/13/89	240.4	01/28/89	.026	.003	
01/13 - 01/19/89	367.3	02/01/89	.020	.002	
01/19 - 01/25/89	379.8	02/01/89	.024	.002	
01/25 - 01/31/89	353.8	02/08/89	.040	.004	
01/31 - 02/06/89	368.6	02/14/89	.012	.002	
02/06 - 02/10/89	237.1	02/23/89	.018	.002	
02/10 - 02/16/89	376.2	02/24/89	.020	.002	
02/16 - 02/22/89	369.3	03/06/89	.016	.002	
02/22 - 02/28/89	363.2	03/07/89	.012	.002	
02/28 - 03/06/89	369.3	03/15/89	.010	.001	
03/06 - 03/10/89	249.6	03/17/89	.013	.002	
03/10 - 03/16/89	364.5	03/24/89	.004	.001	
03/16 - 03/22/89	362.7	03/30/89	.005	.001	
03/22 - 03/28/89	363.2	04/08/89	.005	.001	
03/28 - 04/03/89	373.6	04/15/89	.005	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/20/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION OS2 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/03/89-04/07/89	232.0	04/15/89	.022	.003	
04/07 - 04/13/89	377.5	04/22/89	.016	.002	
04/13 - 04/19/89	367.5	04/26/89	.014	.002	
04/19 - 04/25/89	359.6	05/02/89	.002	.001	
04/25 - 05/01/89	373.4	05/09/89	.010	.001	
05/01 - 05/05/89	245.3	05/15/89	.008	.002	
05/05 - 05/11/89	364.2	05/20/89	.003	.001	
05/11 - 05/17/89	369.3	05/28/89	.006	.001	
05/17 - 05/23/89	360.4	05/31/89	.007	.001	
05/23 - 05/29/89	358.6	06/09/89	.006	.001	
05/29 - 06/02/89	238.4	06/10/89	.006	.002	
06/02 - 06/08/89	374.9	06/16/89	.005	.001	
06/08 - 06/15/89	434.0	07/02/89	.007	.001	
06/15 - 06/20/89	304.1	07/02/89	.004	.001	
06/20 - 06/26/89	356.6	07/10/89	.006	.001	
06/26 - 06/30/89	246.0	07/14/89	.012	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/25/89	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 0S2 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	432.5	07/17/89	.006	.001	
07/07 - 07/12/89	308.2	07/21/89	.004	.001	
07/12 - 07/18/89	351.7	07/24/89	.006	.001	
07/18 - 07/24/89	377.7	08/04/89	.004	.001	
07/24 - 07/28/89	246.0	08/11/89	.009	.002	
07/28 - 08/03/89	354.8	08/19/89	.005	.001	
08/03 - 08/09/89	366.3	08/20/89	.006	.001	
08/09 - 08/15/89	377.0	08/22/89	.005	.001	
08/15 - 08/21/89	361.9	09/02/89	.008	.001	
08/21 - 08/25/89	256.5	09/03/89	.008	.002	
08/25 - 08/31/89	358.4	09/15/89	.010	.001	
08/31 - 09/06/89	364.5	09/15/89	.012	.002	
09/06 - 09/12/89	357.6	09/26/89	.013	.002	
09/12 - 09/18/89	375.2	09/26/89	.022	.002	
09/18 - 09/22/89	242.5	09/29/89	.012	.002	
09/22 - 09/28/89	361.7	10/06/89	.013	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/30/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION OS2 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	373.1	10/11/89	.009	.001	
10/04 - 10/10/89	357.9	10/17/89	.027	.003	
10/10 - 10/16/89	372.9	10/23/89	.026	.003	
10/16 - 10/20/89	243.8	11/01/89	.045	.005	
10/20 - 10/26/89	380.9	11/02/89	.014	.002	
10/26 - 11/01/89	384.9	11/10/89	.022	.002	
11/01 - 11/07/89	361.7	11/15/89	.044	.004	
11/07 - 11/13/89	372.9	11/15/89	.042	.004	
11/13 - 11/17/89	244.5	11/22/89	.036	.004	
11/17 - 11/22/89	302.8	12/04/89	.046	.005	
11/22 - 11/28/89	378.7	12/04/89	.021	.002	
11/28 - 12/04/89	368.6	12/15/89	.031	.003	
12/04 - 12/08/89	218.0	12/22/89	.029	.003	
12/08 - 12/14/89	284.9	12/23/89	.035	.004	
12/14 - 12/20/89	299.3	01/09/90	.057	.006	
12/20 - 12/26/89	286.3	01/09/90	.071	.007	
12/26 - 01/02/90	356.2	01/12/90	.029	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	02/05/90	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 1S1 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	374.2	01/19/89	.016	.002	
01/09 - 01/13/89	240.7	01/28/89	.030	.003	
01/13 - 01/19/89	367.8	02/01/89	.021	.002	
01/19 - 01/25/89	379.0	02/01/89	.023	.002	
01/25 - 01/31/89	342.2	02/08/89	.041	.004	
01/31 - 02/06/89	344.0	02/14/89	.013	.002	
02/06 - 02/10/89	221.1	02/24/89	.024	.003	
02/10 - 02/16/89	375.9	02/24/89	.021	.002	
02/16 - 02/22/89	369.1	03/06/89	.017	.002	
02/22 - 02/28/89	360.7	03/07/89	.016	.002	
02/28 - 03/06/89	369.3	03/15/89	.009	.001	
03/06 - 03/10/89	249.6	03/18/89	.016	.002	
03/10 - 03/16/89	364.5	03/25/89	.004	.001	
03/16 - 03/22/89	362.7	03/30/89	.006	.001	
03/22 - 03/28/89	363.0	04/08/89	.005	.001	
03/28 - 04/03/89	204.0 ^{5/}	04/15/89	.007	.002	

GAMMA ACTIVITY ON FILTER COMP

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/20/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 1S1 (pCi.m⁻³) 2ND QUARTER .

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/04/89-04/07/89	178.5 ^{5/}	04/15/89	.021	.003	
04/07 - 04/13/89	378.2	04/22/89	.013	.002	
04/13 - 04/19/89	367.8	04/26/89	.015	.002	
04/19 - 04/25/89	361.4	05/02/89	.003	.001	
04/25 - 05/01/89	372.4	05/09/89	.010	.001	
05/01 - 05/05/89	245.0	05/16/89	.009	.002	
05/05 - 05/11/89	364.7	05/20/89	.003	.001	
05/11 - 05/17/89	368.8	05/28/89	.008	.001	
05/17 - 05/23/89	363.5	05/31/89	.009	.001	
05/23 - 05/29/89	355.3	06/09/89	.007	.001	
05/29 - 06/02/89	240.4	06/10/89	.008	.002	
06/02 - 06/08/89	361.4	06/17/89	.007	.001	
06/08 - 06/15/89	431.5	07/02/89	.008	.001	
06/15 - 06/20/89	283.5	07/03/89	.004	.001	
06/20 - 06/26/89	377.0	07/10/89	.007	.001	
06/26 - 06/30/89	245.5	07/14/89	.013	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/26/89	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 1S1 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	432.2	07/17/89	.007	.001	
07/07 - 07/12/89	307.2	07/21/89	.007	.001	
07/12 - 07/18/89	351.7	07/22/89	.005	.001	
07/18 - 07/24/89	377.7	08/04/89	.004	.001	
07/24 - 07/28/89	246.0	08/10/89	.008	.001	
07/28 - 08/03/89	354.5	08/19/89	.005	.001	
08/03 - 08/09/89	366.3	08/20/89	.006	.001	
08/09 - 08/15/89	376.7	08/22/89	.007	.001	
08/15 - 08/21/89	361.9	09/02/89	.007	.001	
08/21 - 08/25/89	256.5	09/03/89	.009	.002	
08/25 - 08/31/89	358.1	09/15/89	.010	.001	
08/31 - 09/06/89	364.5	09/15/89	.012	.001	
09/06 - 09/12/89	356.8	09/26/89	.014	.002	
09/12 - 09/18/89	375.2	09/26/89	.022	.002	
09/18 - 09/22/89	250.3	09/29/89	.012	.002	
09/22 - 09/28/89	385.8	10/06/89	.012	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/31/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 1S1 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	385.3	10/11/89	.010	.001	
10/04 - 10/10/89	358.1	10/20/89	.031	.003	
10/10 - 10/16/89	385.1	10/23/89	.025	.003	
10/16 - 10/20/89	251.9	11/01/89	.039	.004	
10/20 - 10/26/89	366.3	11/02/89	.013	.002	
10/26 - 11/01/89	382.4	11/10/89	.019	.002	
11/01 - 11/07/89	373.7	11/15/89	.041	.004	
11/07 - 11/13/89	384.8	11/15/89	.042	.004	
11/13 - 11/17/89	260.5	11/22/89	.030	.003	
11/17 - 11/22/89	302.8	12/04/89	.045	.005	
11/22 - 11/28/89	391.4	12/04/89	.020	.002	
11/28 - 12/04/89	391.0	12/15/89	.028	.003	
12/04 - 12/08/89	263.0	12/22/89	.033	.004	
12/08 - 12/14/89	379.8	12/23/89	.037	.004	
12/14 - 12/20/89	399.1	01/09/90	.061	.006	
12/20 - 12/26/89	381.7	01/09/90	.064	.006	
12/26 - 01/02/90	441.6	01/12/90	.031	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	02/05/90	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 5F1 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	346.5	01/18/89	.005	.001	
01/09 - 01/13/89	236.1	01/27/89	.026	.003	
01/13 - 01/19/89	374.7	02/01/89	.037	.004	
01/19 - 01/25/89	367.7	02/01/89	.008	.001	
01/25 - 01/31/89	354.0	02/08/89	.027	.003	
01/31 - 02/06/89	362.9	02/13/89	.013	.002	
02/06 - 02/10/89	232.4	02/23/89	.015	.002	
02/10 - 02/16/89	374.9	02/24/89	.020	.002	
02/16 - 02/22/89	350.7	03/06/89	.017	.002	
02/22 - 02/28/89	367.7	03/07/89	.012	.002	
02/28 - 03/06/89	^{4/}				
03/06 - 03/10/89	250.7	03/17/89	.016	.002	
03/10 - 03/16/89	361.4	03/24/89	.003	.001	
03/16 - 03/22/89	379.0	03/29/89	.005	.001	
03/22 - 03/28/89	378.5	04/07/89	.006	.001	
03/28 - 04/03/89	373.3	04/14/89	.005	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/19/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 5F1 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/03/89-04/07/89	248.6	04/15/89	.020	.003	
04/07 - 04/13/89	363.2	04/21/89	.014	.002	
04/13 - 04/19/89	372.8	04/26/89	.017	.002	
04/19 - 04/25/89	385.3	05/02/89	.003	.001	
04/25 - 05/01/89	375.4	05/10/89	.009	.001	
05/01 - 05/05/89	250.2	05/15/89	.009	.002	
05/05 - 05/11/89	369.7	05/20/89	.006	.001	
05/11 - 05/17/89	377.0	05/28/89	.006	.001	
05/17 - 05/23/89	373.1	06/01/89	.008	.001	
05/23 - 05/29/89	376.7	06/08/89	.007	.001	
05/29 - 06/02/89	246.0	06/09/89	.003	.001	
06/02 - 06/08/89	373.6	06/16/89	.004	.001	
06/08 - 06/15/89	423.7	07/01/89	.008	.001	
06/15 - 06/20/89	309.7	07/02/89	.010	.002	
06/20 - 06/26/89	402.4	07/11/89	.005	.001	
06/26 - 06/30/89	236.7	07/14/89	.013	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/20/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 5F1 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	431.3	07/17/89	.009	.001	
07/07 - 07/12/89	285.5 ^{3/}	07/20/89	.001	.001	
07/13 - 07/18/89	326.0	07/21/89	.007	.001	
07/18 - 07/24/89	388.8	08/04/89	.004	.001	
07/24 - 07/28/89	243.9	08/04/89	.005	.001	
07/28 - 08/03/89	322.1 ^{3/}	08/18/89	.006	.001	
08/03 - 08/09/89	367.1	08/19/89	.004	.001	
08/09 - 08/15/89	375.7	08/22/89	.007	.001	
08/15 - 08/21/89	356.5	09/02/89	.008	.001	
08/21 - 08/25/89	265.1	09/03/89	.010	.001	
08/25 - 08/31/89	142.9 ^{3/}	09/14/89	.009	.003	
08/31 - 09/06/89	370.3	09/15/89	.009	.001	
09/06 - 09/12/89	325.0	09/26/89	.014	.002	
09/12 - 09/18/89	373.9	09/26/89	.021	.002	
09/18 - 09/22/89	240.1	09/29/89	.009	.002	
09/22 - 09/28/89	354.4	10/06/89	.015	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/23/89	ND	

- ^{1/} Unless specified, Iodine-131 was not detected.
^{2/} No sample collected due to equipment failure.
^{3/} Time lost due to equipment failure.
^{4/} Power outage/failure occurred during collection period.
^{5/} Electrical problem.
 ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 5F1 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	357.2	10/11/89	.009	.001	
10/04 - 10/10/89	360.9	10/17/89	.033	.003	
10/10 - 10/16/89	371.6	10/23/89	.028	.003	
10/16 - 10/20/89	244.0	11/01/89	.048	.005	
10/20 - 10/26/89	366.3	11/01/89	.014	.002	
10/26 - 11/01/89	385.8	11/10/89	.022	.002	
11/01 - 11/07/89	394.1	11/15/89	.044	.004	
11/07 - 11/13/89	402.2	11/17/89	.043	.004	
11/13 - 11/17/89	264.6	11/22/89	.035	.004	
11/17 - 11/22/89	331.6	12/04/89	.048	.005	
11/22 - 11/28/89	411.3	12/04/89	.020	.002	
11/28 - 12/05/89	485.7	12/15/89	.038	.004	
12/05 - 12/08/89	178.2	12/22/89	.033	.004	
12/08 - 12/14/89	388.6	12/22/89	.051	.005	
12/14 - 12/20/89	407.4	01/09/90	.069	.006	
12/20 - 12/26/89	388.6	01/09/89	.085	.008	
12/26 - 01/02/90	464.4	01/12/90	.039	.004	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	01/24/90	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 7D1 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	362.3	01/18/89	.003	.001	
01/09 - 01/13/89	233.8	01/27/89	.024	.003	
01/13 - 01/19/89	378.5	02/01/89	.031	.003	
01/19 - 01/25/89	371.4	02/01/89	.004	.001	
01/25 - 01/31/89	351.8	02/08/89	.033	.003	
01/31 - 02/06/89	366.9	02/13/89	.012	.002	
02/06 - 02/10/89	236.1	02/23/89	.017	.002	
02/10 - 02/16/89	377.0	02/24/89	.012	.002	
02/16 - 02/22/89	360.3	03/06/89	.016	.002	
02/22 - 02/28/89	369.9	03/07/89	.013	.002	
02/28 - 03/06/89	376.9	03/15/89	.007	.001	
03/06 - 03/10/89	246.1	03/17/89	.013	.002	
03/10 - 03/16/89	366.1	03/24/89	.003	.001	
03/16 - 03/22/89	365.6	03/29/89	.006	.001	
03/22 - 03/28/89	373.3	04/07/89	.005	.001	
03/28 - 04/03/89	366.9	04/14/89	.005	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/19/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 7D1 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/03/89-04/07/89	233.3	04/15/89	.018	.003	
04/07 - 04/13/89	383.6	04/21/89	.014	.002	
04/13 - 04/19/89	366.9	04/26/89	.014	.002	
04/19 - 04/25/89	368.7	05/02/89	.002	.001	
04/25 - 05/01/89	372.0	05/09/89	.007	.001	
05/01 - 05/05/89	246.7	05/15/89	.007	.002	
05/05 - 05/11/89	365.6	05/20/89	.005	.001	
05/11 - 05/17/89	346.4	05/28/89	.005	.001	
05/17 - 05/23/89	391.8	06/01/89	.006	.001	
05/23 - 05/29/89	370.5	06/08/89	.005	.001	
05/29 - 06/02/89	245.1	06/09/89	.004	.001	
06/02 - 06/08/89	369.7	06/17/89	.004	.001	
06/08 - 06/15/89	423.6	07/01/89	.006	.001	
06/15 - 06/20/89	317.7	07/02/89	.006	.002	
06/20 - 06/26/89	356.6	07/11/89	.010	.001	
06/26 - 06/30/89	256.9	07/14/89	.011	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/20/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 7D1 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	425.9	07/17/89	.005	.001	
07/07 - 07/12/89	312.0	07/21/89	.003	.001	
07/12 - 07/18/89	355.9	07/21/89	.005	.001	
07/18 - 07/24/89	357.4	08/04/89	.005	.001	
07/24 - 07/28/89	247.7	08/04/89	.005	.001	
07/28 - 08/03/89	356.1	08/18/89	.005	.001	
08/03 - 08/09/89	368.6	08/19/89	.004	.001	
08/09 - 08/15/89	376.7	08/22/89	.006	.001	
08/15 - 08/21/89	358.3	09/02/89	.008	.001	
08/21 - 08/25/89	264.4	09/03/89	.007	.001	
08/25 - 08/31/89	360.2	09/14/89	.009	.001	
08/31 - 09/06/89	363.8	09/15/89	.009	.001	
09/06 - 09/12/89	359.2	09/26/89	.013	.002	
09/12 - 09/18/89	377.4	09/26/89	.022	.002	
09/18 - 09/22/89	<u>5/</u>				
09/22 - 09/28/89	<u>5/</u>				

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/23/89	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 7D1 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	369.5	10/11/89	.008	.001	
10/04 - 10/10/89	362.6	10/17/89	.025	.003	
10/10 - 10/16/89	374.3	10/23/89	.026	.003	
10/16 - 10/20/89	245.9	11/01/89	.036	.004	
10/20 - 10/26/89	365.9	11/01/89	.010	.002	
10/26 - 11/01/89	372.3	11/10/89	.018	.002	
11/01 - 11/07/89	364.1	11/15/89	.036	.004	
11/07 - 11/13/89	375.4	11/17/89	.035	.004	
11/13 - 11/17/89	245.9	11/27/89	.030	.003	
11/17 - 11/22/89	305.6	12/04/89	.037	.004	
11/22 - 11/28/89	381.0	12/04/89	.016	.002	
11/28 - 12/04/89	369.5	12/15/89	.025	.003	
12/04 - 12/08/89	246.1	12/22/89	.031	.003	
12/08 - 12/14/89	359.5	12/22/89	.031	.003	
12/14 - 12/20/89	381.5	01/09/90	.051	.005	
12/20 - 12/26/89	355.6	01/09/90	.053	.005	
12/26 - 01/02/90	407.4	01/12/90	.028	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	01/24/90	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S1 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	382.0	01/18/89	.004	.001	
01/09 - 01/13/89	243.1	01/27/89	.021	.003	
01/13 - 01/19/89	371.4	02/01/89	.016	.002	
01/19 - 01/25/89	383.8	02/01/89	.021	.002	
01/25 - 01/31/89	345.7	02/08/89	.034	.003	
01/31 - 02/06/89	373.5	02/13/89	.011	.001	
02/06 - 02/10/89	240.6	02/23/89	.016	.002	
02/10 - 02/16/89	380.9	02/24/89	.018	.002	
02/16 - 02/22/89	373.7	03/06/89	.014	.002	
02/22 - 02/28/89	369.9	03/07/89	.012	.002	
02/28 - 03/06/89	363.4	03/15/89	.006	.001	
03/06 - 03/10/89	247.5	03/17/89	.013	.002	
03/10 - 03/16/89	359.4	03/24/89	.003	.001	
03/16 - 03/22/89	358.1	03/30/89	.005	.001	
03/22 - 03/28/89	358.9	04/07/89	.005	.001	
03/28 - 04/03/89	366.7	04/14/89	.006	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/21/89	ND	

1/ Unless specified, Iodine-131 was not detected.

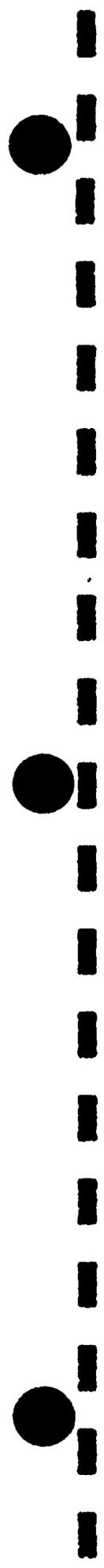
2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



. TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S1 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/03/89-04/07/89	228.4	04/15/89	.021	.003	
04/07 - 04/13/89	372.9	04/22/89	.014	.002	
04/13 - 04/19/89	362.6	04/26/89	.016	.002	
04/19 - 04/25/89	355.3	05/02/89	.003	.001	
04/25 - 05/01/89	368.2	05/09/89	.010	.001	
05/01 - 05/05/89	242.0	05/15/89	.008	.002	
05/05 - 05/11/89	359.9	05/20/89	.004	.001	
05/11 - 05/17/89	363.9	05/28/89	.008	.001	
05/17 - 05/23/89	356.4	05/31/89	.007	.001	
05/23 - 05/29/89	353.1	06/09/89	.008	.001	
05/29 - 06/02/89	235.5	06/10/89	.006	.002	
06/02 - 06/08/89	370.2	06/17/89	.006	.001	
06/08 - 06/15/89	418.2	07/01/89	.004	.001	
06/15 - 06/20/89	275.7 ^{4/}	07/02/89	.005	.001	
06/20 - 06/26/89	350.8	07/11/89	.007	.001	
06/26 - 06/30/89	242.8	07/14/89	.013	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/24/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.

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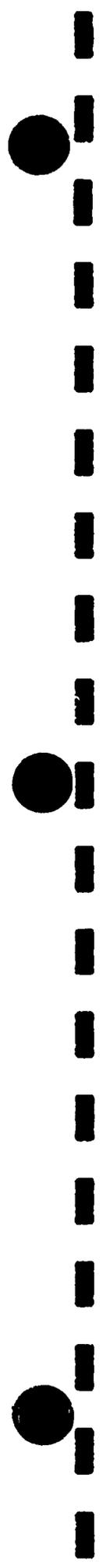


TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S1 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	426.7	07/17/89	.007	.001	
07/07 - 07/12/89	302.1	07/21/89	.005	.001	
07/12 - 07/18/89	347.1	07/24/89	.006	.001	
07/18 - 07/24/89	372.8	08/04/89	.005	.001	
07/24 - 07/28/89	242.7	08/10/89	.008	.001	
07/28 - 08/03/89	350.0	08/19/89	.005	.001	
08/03 - 08/09/89	361.1	08/20/89	.006	.001	
08/09 - 08/15/89	371.6	08/22/89	.007	.001	
08/15 - 08/21/89	356.9	09/02/89	.009	.001	
08/21 - 08/25/89	252.1	09/03/89	.010	.002	
08/25 - 08/31/89	353.1	09/15/89	.010	.001	
08/31 - 09/06/89	365.1	09/15/89	.011	.002	
09/06 - 09/12/89	346.6	09/26/89	.014	.002	
09/12 - 09/18/89	363.4	09/26/89	.018	.002	
09/18 - 09/22/89	227.4	09/29/89	.011	.002	
09/22 - 09/28/89	367.9	10/06/89	.014	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/27/89	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
AIRBORNE RADIOACTIVITY
STATION 8S1 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	380.1	10/11/89	.009	.001	
10/04 - 10/10/89	354.8	10/17/89	.027	.003	
10/10 - 10/16/89	367.4	10/23/89	.027	.003	
10/16 - 10/20/89	240.5	11/01/89	.045	.005	
10/20 - 10/26/89	361.4	11/02/89	.013	.002	
10/26 - 11/01/89	366.7	11/10/89	.020	.002	
11/01 - 11/07/89	364.1	11/15/89	.036	.004	
11/07 - 11/13/89	362.7	11/17/89	.034	.004	
11/13 - 11/17/89	229.8	11/22/89	.026	.003	
11/17 - 11/22/89	305.1	12/04/89	.038	.004	
11/22 - 11/28/89	382.3	12/04/89	.016	.002	
11/28 - 12/04/89	368.2	12/15/89	.029	.003	
12/04 - 12/08/89	238.2	12/22/89	.028	.003	
12/08 - 12/14/89	335.7	12/22/89	.038	.004	
12/14 - 12/20/89	353.4	01/09/90	.055	.005	
12/20 - 12/26/89	320.7	01/09/90	.062	.005	
12/26 - 01/02/90	370.4	01/12/90	.024	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	02/02/90	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S2 (pCi.m⁻³) 1ST QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
01/03/89-01/09/89	364.7	01/19/89	.004	.001	
01/09 - 01/13/89	246.6	01/28/89	.027	.003	
01/13 - 01/19/89	360.7	02/01/89	.017	.002	
01/19 - 01/25/89	378.0	02/01/89	.023	.002	
01/25 - 01/31/89	351.2	02/08/89	.037	.004	
01/31 - 02/06/89	369.3	02/13/89	.011	.001	
02/06 - 02/10/89	237.4	02/23/89	.022	.003	
02/10 - 02/16/89	375.9	02/24/89	.018	.002	
02/16 - 02/22/89	369.6	03/06/89	.016	.002	
02/22 - 02/28/89	363.0	03/07/89	.013	.002	
02/28 - 03/06/89	369.1	03/15/89	.009	.001	
03/06 - 03/10/89	250.4	03/17/89	.012	.002	
03/10 - 03/16/89	364.0	03/23/89	.003	.001	
03/16 - 03/22/89	363.0	03/30/89	.005	.001	
03/22 - 04/03/89	734.8*	04/14/89	.005	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
01/03/89-04/03/89	04/21/89	ND	

- 1/ Unless specified, Iodine-131 was not detected.
 2/ No sample collected due to equipment failure.
 3/ Time lost due to equipment failure.
 4/ Power outage/failure occurred during collection period.
 5/ Electrical problem.
 ND: Radionuclides of interest other than naturally occurring were not detected.
 * Sample was left in for 2 collection periods.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S2 (pCi.m⁻³) 2ND QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
04/03/89-04/07/89	229.2	04/15/89	.024	.003	
04/07 - 04/13/89	378.5	04/22/89	.017	.002	
04/13 - 04/19/89	368.0	04/26/89	.018	.002	
04/19 - 04/25/89	361.7	05/02/89	.004	.001	
04/25 - 05/01/89	371.9	05/09/89	.012	.002	
05/01 - 05/05/89	245.0	05/15/89	.008	.002	
05/05 - 05/11/89	364.7	05/20/89	.003	.001	
05/11 - 05/17/89	368.8	05/28/89	.008	.001	
05/17 - 05/23/89	364.2	05/31/89	.007	.001	
05/23 - 05/29/89	354.8	06/09/89	.006	.001	
05/29 - 06/02/89	240.7	06/10/89	.007	.001	
06/02 - 06/08/89	361.4	06/17/89	.005	.001	
06/08 - 06/15/89	431.5	07/02/89	.007	.001	
06/15 - 06/20/89	283.5	07/02/89	.005	.001	
06/20 - 06/26/89	387.0	07/10/89	.007	.001	
06/26 - 06/30/89	245.0	07/14/89	.013	.002	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
04/03/89-06/30/89	07/25/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S2 (pCi.m⁻³) 3RD QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
06/30/89-07/07/89	432.5	07/17/89	.006	.001	
07/07 - 07/12/89	305.9	07/21/89	.005	.001	
07/12 - 07/18/89	353.3	07/24/89	.005	.001	
07/18 - 07/24/89	378.0	08/04/89	.004	.001	
07/24 - 07/28/89	245.8	08/10/89	.008	.001	
07/28 - 08/03/89	354.8	08/19/89	.005	.001	
08/03 - 08/09/89	366.8	08/20/89	.006	.001	
08/09 - 08/15/89	377.5	08/22/89	.005	.001	
08/15 - 08/21/89	362.4	09/02/89	.008	.001	
08/21 - 08/25/89	255.5	09/03/89	.009	.002	
08/25 - 08/31/89	358.4	09/15/89	.009	.001	
08/31 - 09/06/89	365.5	09/17/89	.011	.002	
09/06 - 09/12/89	356.8	09/26/89	.012	.002	
09/12 - 09/18/89	375.2	09/26/89	.021	.002	
09/18 - 09/22/89	234.4	09/29/89	.010	.002	
09/22 - 09/28/89	349.1	10/06/89	.015	.001	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
06/30/89-09/28/89	10/30/89	ND	

^{1/} Unless specified, Iodine-131 was not detected.

^{2/} No sample collected due to equipment failure.

^{3/} Time lost due to equipment failure.

^{4/} Power outage/failure occurred during collection period.

^{5/} Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-3 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
 AIRBORNE RADIOACTIVITY
 STATION 8S2 (pCi.m⁻³) 4TH QUARTER

<u>COLLECTION PERIOD</u>	<u>VOLUME (m³)</u>	<u>COUNTING DATE</u>	<u>GROSS BETA ACTIVITY</u>	<u>2SIGMA</u>	<u>GAMMA SCAN^{1/} I-131</u>
09/28/89-10/04/89	360.7	10/11/89	.009	.001	
10/04 - 10/10/89	360.9	10/17/89	.022	.003	
10/10 - 10/16/89	372.9	10/23/89	.026	.003	
10/16 - 10/20/89	244.5	11/01/89	.044	.005	
10/20 - 10/26/89	379.5	11/02/89	.013	.002	
10/26 - 11/01/89	382.9	11/10/89	.020	.002	
11/01 - 11/07/89	361.7	11/15/89	.049	.005	
11/07 - 11/13/89	373.9	11/15/89	.044	.004	
11/13 - 11/17/89	244.8	11/22/89	.036	.004	
11/17 - 11/22/89	303.9	12/04/89	.045	.005	
11/22 - 11/28/89	379.8	12/04/89	.024	.003	
11/28 - 12/04/89	373.6	12/15/89	.031	.003	
12/04 - 12/08/89	253.5	12/22/89	.030	.003	
12/08 - 12/14/89	366.6	12/22/89	.020	.002	
12/14 - 12/20/89	387.8	01/09/90	.059	.006	
12/20 - 12/26/89	364.3	01/09/90	.074	.007	
12/26 - 01/02/90	438.8	01/12/90	.030	.003	

GAMMA ACTIVITY ON FILTER COMPOSITES

<u>COLLECTION PERIOD</u>	<u>COUNTING DATE</u>	<u>NUCLIDE</u>	<u>CONCENTRATION (pCi.m⁻³)</u>
09/28/89-01/02/90	02/02/90	ND	

1/ Unless specified, Iodine-131 was not detected.

2/ No sample collected due to equipment failure.

3/ Time lost due to equipment failure.

4/ Power outage/failure occurred during collection period.

5/ Electrical problem.

ND: Radionuclides of interest other than naturally occurring were not detected.



TABLE B-4

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
ENVIRONMENTAL DOSIMETRY

Station	Quarterly Totals (mR)				Total	Average	$\pm 2\sigma$
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr			
MT1	23.7	20.6	18.3	22.7	85.3	21.3	4.8
WN1	13.4	12.4	12.0	14.4	52.2	13.1	2.2
OS1	22.0	20.3	17.3	22.0	81.6	20.4	4.4
5S1	24.2	22.5	20.1	25.4	92.2	23.1	4.6
6S1	13.9	13.0	13.4	15.7	56.0	14.0	2.4
8S1	17.3	15.7	15.5	18.5	67.0	16.8	2.8
8S2	21.5	19.8	19.1	23.5	83.9	21.0	3.9
5S3	18.9	18.1	18.2	20.2	75.4	18.9	1.9
2F2	12.7	12.1	12.4	15.1	52.3	13.1	2.7
2D1	12.1	11.4	12.0	15.6	51.1	12.8	3.8
4D1	12.3	11.8	11.8	15.3	51.2	12.8	3.4
5F1	16.9	16.0	18.1	18.4	69.4	17.4	2.2
1A1	11.9	11.6	11.8	14.5	49.8	12.5	2.7
7D2	17.8	17.1	16.6	20.4	71.9	18.0	3.4
7G2	18.1	16.7	16.0	20.6	71.4	17.9	4.1
7C1	18.7	17.9	16.9	20.5	74.0	18.5	3.0
7F1	16.2	17.3	15.9	18.9	68.3	17.1	2.7
OB1	10.2	9.8	11.7	12.8	44.5	11.1	2.8
7D1	12.1	12.1	11.5	14.6	50.3	12.6	2.8
4C1	10.6	11.1	10.2	13.3	45.2	11.3	2.8
OS2	17.5	16.9	15.1	19.7	69.2	17.3	3.8
1S1	16.6	16.6	16.4	19.5	69.1	17.3	3.0
2S1	18.5	16.5	18.9	19.3	73.2	18.3	2.5
3S1	21.0	20.5	18.9	21.4	81.8	20.5	2.2
4S1	19.2	17.7	17.3	21.0	75.2	18.8	3.4
7S1	18.6	18.5	17.3	20.6	75.0	18.8	2.7
9S1	21.9	21.6	20.9	24.6	89.0	22.3	3.2
1C1	13.1	13.2	12.5	14.8	53.6	13.4	2.0
5C1	16.9	16.7	17.2	15.6	66.4	16.6	1.4
3D1	13.3	12.5	12.7	14.4	52.9	13.2	1.7
6D1	16.4	15.0	15.7	18.9	66.0	16.5	3.4
5F3	18.4	18.0	17.7	21.8	75.9	19.0	3.8

* The exposure (mR) has been normalized for a standard quarter (i.e. for a 90-day period).



TABLE B-5

LAND USE CENSUS

DISTANCE IN MILES FROM THE UNIT 1 CENTER LINE TO THE
NEAREST MILK ANIMAL, RESIDENCE, VEGETABLE GARDEN

<u>22½ Degree^{1/} Radial Sector</u>	<u>Nearest Milk Animal</u>	<u>Nearest Residence km (mi)</u>	<u>Residence Azimuth Degree</u>	<u>Nearest Vegetable Garden km (mi)</u>
NW	None	5.95 (3.7)	326	None
NNW	None	2.50 (1.55)	333	None
N	None	None	---	None
NNE	None	5.30 (3.3)	018.5	None
NE	None	8.15 (5.06)	037	None
ENE	None	7.15 (4.44)	062.5	None
E	None	7.25 (4.5)	096.5	None
ESE	None	None	---	3.3 (2) ^{2/}
SE	None	None	---	None

^{1/} Sectors not shown contain no land beyond the site boundary, other than islets not used for the purposes indicated in this table.

^{2/} The vegetable garden indicated is the farm along the site access road.



TABLE B-6

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
LIST OF MARINE AND TERRESTRIAL SAMPLES
COLLECTED AND ANALYZED

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89A01	SNOW PEAS	7C1	01/04/89
89A02	BROCCOLI GREENS	5F2	01/04/89
89A03	LETTUCE	7G1	01/04/89
89B68	SURFACE WATER	5S2	01/04/89
89B69	OUTFALL WATER	OUT	01/04/89
89A22	SEAWATER	PON	01/12/89
89A23	BULL KELP BLADE	PON	01/12/89
89A24	BULL KELP PNEUMATOCYST	PON	01/12/89
89A25	SEAWATER	DCM	01/12/89
89A26	SEAWATER	POS	01/12/89
89A27	BULL KELP BLADE	POS	01/12/89
89A28	BULL KELP PNEUMATOCYST	POS	01/12/89
89A29	SEAWATER	7C2	01/12/89
89A30	BULL KELP BLADE	7C2	01/12/89
89A31	BULL KELP PNEUMATOCYST	7C2	01/12/89
89A36	DRINKING WATER	DW1	01/12/89
89A67	MILK	5F2	01/25/89
89B07	OUTFALL WATER	OUT	02/08/89
89B08	SURFACE WATER	5S2	02/08/89
89B09	BROCCOLI GREENS	5F2	02/08/89
89B10	SNOW PEAS	7C1	02/08/89
89B11	CABBAGE	7G1	02/08/89
89B29	CALIFORNIA MUSSELS	POS	02/15/89
89B30	SEAWATER	7C2	02/15/89
89B31	BLACK ABALONE MEAT	PON	02/15/89
89B33	CALIFORNIA MUSSELS	7C2	02/15/89
89B34	BLACK ABALONE MEAT	7C2	02/15/89
89B35	BULL KELP BLADE	7C2	02/15/89
89B36	BULL KELP PNEUMATOCYST	7C2	02/15/89
89B37	ROCKFISH	7C2	02/15/89
89B38	PERCH	7C2	02/15/89
89B39	BLACK ABALONE MEAT	DCM	02/15/89
89B40	SEAWATER	DCM	02/15/89
89B42	CALIFORNIA MUSSELS	DCM	02/15/89
89B44	CALIFORNIA MUSSELS	PON	02/15/89
89B45	SEAWATER	PON	02/15/89
89B46	PERCH	PON	02/15/89
89B47	BULL KELP BLADE	PON	02/15/89
89B48	BULL KELP PNEUMATOCYST	PON	02/15/89
89B49	ROCKFISH	PON	02/15/89
89B50	BLACK ABALONE MEAT	POS	02/15/89
89B51	BULL KELP BLADE	POS	02/15/89
89B52	BULL KELP PNEUMATOCYST	POS	02/15/89
89B53	SEAWATER	POS	02/15/89
89B54	PERCH	POS	02/15/89



TABLE B-6 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
LIST OF MARINE AND TERRESTRIAL SAMPLES
COLLECTED AND ANALYZED

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89B55	ROCKFISH	POS	02/15/89
89B56	DRINKING WATER	DW1	02/15/89
89B32	RED ABALONE MEAT	DCM	02/16/89
89B41	PERCH	DCM	02/16/89
89B43	ROCKFISH	DCM	02/16/89
89B73	MILK	5F2	02/21/89
89C26	SURFACE WATER	5S2	03/09/89
89C27	OUTFALL WATER	OUT	03/09/89
89C28	SNOW PEAS	7C1	03/09/89
89C29	LETTUCE	7G1	03/09/89
89C30	BROCCOLI GREENS	5F2	03/09/89
89C93	OUTFALL WATER COMPOSITE	OUT	03/09/89
89C46	DRINKING WATER	DW1	03/17/89
89C48	SEAWATER	PON	03/17/89
89C49	SEAWATER	DCM	03/17/89
89C50	SEAWATER	POS	03/17/89
89C51	BULL KELP BLADE	POS	03/17/89
89C52	BULL KELP PNEUMATOCYST	POS	03/17/89
89C53	SEAWATER	7C2	03/17/89
89C54	BULL KELP BLADE	7C2	03/17/89
89C55	BULL KELP PNEUMATOCYST	7C2	03/17/89
89C47	MILK	5F2	03/20/89
89D37	COMMERCIAL COD	7D3	03/31/89
89D38	COMMERCIAL SNAPPER	7D3	03/31/89
89D23	OUTFALL WATER	OUT	04/05/89
89D24	SURFACE WATER	5S2	04/05/89
89D25	LETTUCE	7G1	04/05/89
89D26	SNOW PEAS	7C1	04/05/89
89D27	CABBAGE	5F2	04/05/89
89F66	OUTFALL WATER COMPOSITE	OUT	04/05/89
89D40	DRINKING WATER	DW1	04/13/89
89D41	SEAWATER	DCM	04/13/89
89D42	SEAWATER	PON	04/13/89
89D43	BULL KELP BLADE	PON	04/13/89
89D44	BULL KELP PNEUMATOCYST	PON	04/13/89
89D45	SEAWATER	POS	04/13/89
89D46	BULL KELP BLADE	POS	04/13/89
89D47	BULL KELP PNEUMATOCYST	POS	04/13/89
89D48	SEAWATER	7C2	04/13/89
89D49	BULL KELP BLADE	7C2	04/13/89
89D50	BULL KELP PNEUMATOCYST	7C2	04/13/89
89D79	MILK	5F2	04/24/89
89E55	IRIDAEA	DCM	05/08/89
89E56	IRIDAEA	7C2	05/08/89
89E57	CALIFORNIA MUSSELS	DCM	05/08/89



TABLE B-6 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
LIST OF MARINE AND TERRESTRIAL SAMPLES
COLLECTED AND ANALYZED

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89E58	BLACK ABALONE MEAT	DCM	05/08/89
89E59	CALIFORNIA MUSSELS	PON	05/08/89
89E60	BLACK ABALONE MEAT	PON	05/08/89
89E61	CALIFORNIA MUSSELS	POS	05/08/89
89E62	BLACK ABALONE MEAT	POS	05/08/89
89E63	CALIFORNIA MUSSELS	7C2	05/08/89
89E64	BLACK ABALONE MEAT	7C2	05/08/89
89E36	OUTFALL WATER	OUT	05/09/89
89E37	SURFACE WATER	5S2	05/09/89
89E38	SNOW PEAS	7C1	05/09/89
89E39	LETTUCE	7G1	05/09/89
89E40	BROCCOLI GREENS	5F2	05/09/89
89E75	DRINKING WATER	DW1	05/16/89
89E76	SEAWATER	DCM	05/16/89
89E77	SEAWATER	PON	05/16/89
89E78	BULL KELP BLADE	PON	05/16/89
89E79	BULL KELP PNEUMATOCYST	PON	05/16/89
89E80	SEAWATER	POS	05/16/89
89E81	BULL KELP BLADE	POS	05/16/89
89E82	BULL KELP PNEUMATOCYST	POS	05/16/89
89E83	SEAWATER	7C2	05/16/89
89E84	BULL KELP BLADE	7C2	05/16/89
89E85	BULL KELP PNEUMATOCYST	7C2	05/16/89
89F55	PERCH	PON	05/19/89
89F56	ROCKFISH	PON	05/19/89
89F57	RED ABALONE MEAT	PON	05/19/89
89F58	PERCH	DCM	05/19/89
89F59	ROCKFISH	DCM	05/19/89
89F52	COMMERCIAL COD	7D3	05/27/89
89F53	COMMERCIAL SNAPPER	7D3	05/27/89
89F54	COMMERCIAL SALMON	7D3	05/27/89
89F60	PERCH	POS	05/31/89
89F61	ROCKFISH	POS	05/31/89
89F62	RED ABALONE MEAT	POS	05/31/89
89F63	PERCH	7C2	05/31/89
89F64	ROCKFISH	7C2	05/31/89
89F65	RED ABALONE MEAT	7C2	05/31/89
89F47	CAULIFLOWER	5F2	06/08/89
89F48	SNOW PEAS	7C1	06/08/89
89F49	CELERY GREENS	7G1	06/08/89
89F50	SURFACE WATER	5S2	06/08/89
89F51	OUTFALL WATER	OUT	06/08/89
89F96	MILK	5F2	06/19/89
89F97	DRINKING WATER	DW1	06/19/89
89G21	BULL KELP BLADE	POS	06/29/89



TABLE B-6 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
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<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89G22	BULL KELP PNEUMATOCYST	POS	06/29/89
89G23	SEAWATER	POS	06/29/89
89G24	SEAWATER	DCM	06/29/89
89G25	BULL KELP BLADE	7C2	06/29/89
89G26	BULL KELP PNEUMATOCYST	7C2	06/29/89
89G27	SEAWATER	PON	06/29/89
89G28	BULL KELP BLADE	PON	06/29/89
89G29	BULL KELP PNEUMATOCYST	PON	06/29/89
89G30	SEAWATER	7C2	06/29/89
89G39	SNOW PEAS	7C1	07/05/89
89G40	ARTICHOKE	5F2	07/05/89
89G41	LETTUCE	7G1	07/05/89
89G44	SURFACE WATER	5S2	07/05/89
89G45	OUTFALL WATER	OUT	07/05/89
89J54	OUTFALL WATER COMPOSITE	OUT	07/05/89
89G56	BULL KELP PNEUMATOCYST	7C2	07/11/89
89G57	BULL KELP BLADE	POS	07/11/89
89G58	BULL KELP PNEUMATOCYST	POS	07/11/89
89G59	BULL KELP BLADE	PON	07/11/89
89G60	BULL KELP PNEUMATOCYST	PON	07/11/89
89G61	SEAWATER	7C2	07/11/89
89G62	SEAWATER	POS	07/11/89
89G63	SEAWATER	PON	07/11/89
89G64	SEAWATER	DCM	07/11/89
89G81	DRINKING WATER	DW1	07/12/89
89H14	MILK	5F2	07/25/89
89H29	SNOW PEAS	7C1	08/02/89
89H30	LETTUCE	7G1	08/02/89
89H31	SQUASH LEAVES	5F2	08/02/89
89H32	IRIDAEA	DCM	08/02/89
89H33	BLACK ABALONE MEAT	DCM	08/02/89
89H34	CALIFORNIA MUSSELS	DCM	08/02/89
89H36	IRIDAEA	7C2	08/02/89
89H37	BLACK ABALONE MEAT	7C2	08/02/89
89H38	CALIFORNIA MUSSELS	7C2	08/02/89
89H39	BLACK ABALONE MEAT	POS	08/02/89
89H40	CALIFORNIA MUSSELS	POS	08/02/89
89H79	OUTFALL WATER	OUT	08/02/89
89H80	SURFACE WATER	5S2	08/02/89
89J70	BLACK ABALONE MEAT	PON	08/02/89
89J71	CALIFORNIA MUSSELS	PON	08/02/89
89H83	DRINKING WATER	DW1	08/10/89
89H84	SEAWATER	PON	08/10/89
89H85	SEAWATER	DCM	08/10/89
89H86	SEAWATER	POS	08/10/89



TABLE B-6 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
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<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89H87	SEAWATER	7C2	08/10/89
89H90	PERCH	PON	08/10/89
89H91	ROCKFISH	PON	08/10/89
89H92	RED ABALONE MEAT	POS	08/10/89
89H93	PERCH	POS	08/10/89
89H94	ROCKFISH	POS	08/10/89
89H95	SEDIMENT	DCM	08/10/89
89H96	ROCKFISH	DCM	08/10/89
89H97	SEDIMENT	7C2	08/10/89
89H98	PERCH	7C2	08/10/89
89H99	ROCKFISH	7C2	08/10/89
89I00	BULL KELP BLADE	PON	08/10/89
89I01	BULL KELP PNEUMATOCYST	PON	08/10/89
89I02	BULL KELP BLADE	DCM	08/10/89
89I03	BULL KELP PNEUMATOCYST	DCM	08/10/89
89I04	BULL KELP BLADE	POS	08/10/89
89I05	BULL KELP PNEUMATOCYST	POS	08/10/89
89I06	BULL KELP BLADE	7C2	08/10/89
89I07	BULL KELP PNEUMATOCYST	7C2	08/10/89
89I31	MILK	5F2	08/21/89
89I82	SURFACE WATER	5S2	09/05/89
89I83	OUTFALL WATER	OUT	09/05/89
89I84	SNOW PEAS	7C1	09/05/89
89I85	CELERY GREENS	7G1	09/05/89
89I86	SQUASH GREENS	5F2	09/05/89
89J18	BULL KELP BLADE	POS	09/13/89
89J19	BULL KELP PNEUMATOCYST	POS	09/13/89
89J20	SEAWATER	POS	09/13/89
89J21	BULL KELP BLADE	PON	09/13/89
89J22	BULL KELP PNEUMATOCYST	PON	09/13/89
89J23	SEAWATER	PON	09/13/89
89J24	BULL KELP BLADE	7C2	09/13/89
89J25	BULL KELP PNEUMATOCYST	7C2	09/13/89
89J26	SEAWATER	7C2	09/13/89
89J40	SEAWATER	DCM	09/13/89
89J50	DRINKING WATER	DW1	09/18/89
89J51	MILK	5F2	09/18/89
89J98	COMMERCIAL COD	7D3	09/26/89
89J99	COMMERCIAL SNAPPER	7D3	09/26/89
89J82	MILK	5F2	09/27/89
89K00	OUTFALL WATER	OUT	10/05/89
89K01	SURFACE WATER	5S2	10/05/89
89K02	SNOW PEAS	7C1	10/05/89
89K03	CELERY GREENS	7G1	10/05/89
89K04	SQUASH GREENS	5F2	10/05/89

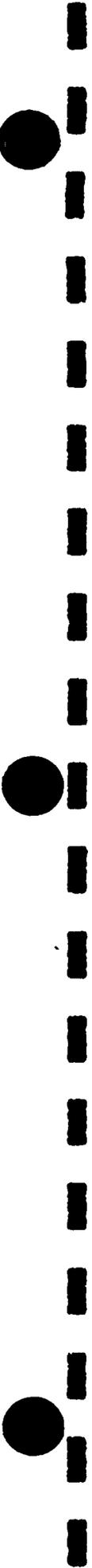


TABLE B-6 (continued)

DIABLO CANYON POWER PLANT 1989 ANNUAL REPORT
LIST OF MARINE AND TERRESTRIAL SAMPLES
COLLECTED AND ANALYZED

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89N31	OUTFALL WATER COMPOSITE	OUT	10/05/89
89K19	DRINKING WATER	DW1	10/11/89
89K20	SEAWATER	PON	10/11/89
89K21	SEAWATER	DCM	10/11/89
89K22	SEAWATER	POS	10/11/89
89K23	SEAWATER	7C2	10/11/89
89K27	BULL KELP BLADE	PON	10/11/89
89K28	BULL KELP PNEUMATOCYST	PON	10/11/89
89K29	BULL KELP BLADE	POS	10/11/89
89K30	BULL KELP PNEUMATOCYST	POS	10/11/89
89K31	BULL KELP BLADE	7C2	10/11/89
89K32	BULL KELP PNEUMATOCYST	7C2	10/11/89
89K64	MILK	5F2	10/24/89
89L05	COMMERCIAL ROCKFISH	7D3	11/08/89
89L06	SNOW PEAS	7C1	11/08/89
89L07	BROCCOLI GREENS	5F2	11/08/89
89L08	OUTFALL WATER	OUT	11/08/89
89L12	SURFACE WATER	5S2	11/09/89
89L28	BULL KELP BLADE	7C2	11/15/89
89L29	BULL KELP PNEUMATOCYST	7C2	11/15/89
89L30	BULL KELP BLADE	POS	11/15/89
89L31	BULL KELP PNEUMATOCYST	POS	11/15/89
89L32	SEAWATER	DCM	11/15/89
89L33	SEAWATER	PON	11/15/89
89L34	SEAWATER	7C2	11/15/89
89L35	SEAWATER	POS	11/15/89
89L36	DRINKING WATER	DW1	11/15/89
89L73	BLACK ABALONE MEAT	PON	11/16/89
89L74	CALIFORNIA MUSSELS	PON	11/16/89
89L78	BLACK ABALONE MEAT	DCM	11/16/89
89L79	CALIFORNIA MUSSELS	DCM	11/16/89
89L85	BLACK ABALONE MEAT	POS	11/16/89
89L86	CALIFORNIA MUSSELS	POS	11/16/89
89L87	BLACK ABALONE MEAT	7C2	11/16/89
89L88	CALIFORNIA MUSSELS	7C2	11/16/89
89L42	MILK	5F2	11/20/89
89L75	PERCH	PON	11/20/89
89L76	BULL KELP BLADE	PON	11/20/89
89L77	BULL KELP PNEUMATOCYST	PON	11/20/89
89L80	RED ABALONE MEAT	DCM	11/20/89
89L81	ROCKFISH	DCM	11/20/89
89L82	PERCH	DCM	11/20/89
89L83	BULL KELP BLADE	DCM	11/20/89
89L84	BULL KELP PNEUMATOCYST	DCM	11/20/89
89M27	OUTFALL WATER	OUT	12/06/89



TABLE B-6 (continued)

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<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>STATION NO.</u>	<u>COLLECTION DATE</u>
89M28	SURFACE WATER	5S2	12/06/89
89M29	SNOW PEAS	7C1	12/06/89
89M30	LETTUCE	7G1	12/06/89
89M31	CAULIFLOWER	5F2	12/06/89
89M50	DRINKING WATER	DW1	12/13/89
89M74	IRIDAEA	DCM	12/14/89
89M75	IRIDAEA	7C2	12/14/89
89M76	BULL KELP BLADE	PON	12/14/89
89M77	BULL KELP PNEUMATOCYST	PON	12/14/89
89M78	BULL KELP BLADE	POS	12/14/89
89M79	BULL KELP PNEUMATOCYST	POS	12/14/89
89M80	BULL KELP BLADE	7C2	12/14/89
89M81	BULL KELP PNEUMATOCYST	7C2	12/14/89
89M82	SEAWATER	PON	12/14/89
89M83	SEAWATER	DCM	12/14/89
89M84	SEAWATER	POS	12/14/89
89M85	SEAWATER	7C2	12/14/89
89M73	MILK	5F2	12/18/89
89M99	RED ABALONE MEAT	PON	12/20/89
89N00	ROCKFISH	PON	12/20/89
89N01	RED ABALONE MEAT	DCM	12/20/89
89N02	RED ABALONE MEAT	POS	12/20/89
89N03	ROCKFISH	POS	12/20/89
89N04	PERCH	POS	12/20/89
89N05	ROCKFISH	7C2	12/20/89
89N06	PERCH	7C2	12/20/89

