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Pacific Gas and Electric Company

50-275/323

1979 ANNUAL ENVIRONMENTAL
RADIOLOGICAL REPORT
DIABLO CANYON POWER PLANT

DEPARTMENT OF ENGINEERING RESEARCH

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Report Issued: APR 28 1980

Report 411-80.25

PACIFIC GAS AND ELECTRIC COMPANY
DEPARTMENT OF ENGINEERING RESEARCH

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RADIOLOGICAL REPORT
DIABLO CANYON POWER PLANT

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SUMMARY

The environmental radiological monitoring program was continued with minor changes in 1979. The measurements taken during this year remained in the range of other preoperational measurements. Results of the Department of Engineering Research's participation in the EPA cross-check program and a limited land use survey of the vicinity of the plant site are also included in this report.

INTRODUCTION

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

SAMPLE COLLECTION AND ANALYSES

During this period, 47 marine samples were collected and analyzed as described in the marine sampling program, Table 1. This program prescribes a quarterly sampling schedule which is utilized to insure that required samples will be obtained at least semiannually, if available. However, black abalone, red abalone, Pismo clams, and commercial salmon were collected only when in season and population density permitted.

Direct radiation was measured at monthly intervals at 19 stations and at quarterly intervals at two additional locations. The direct radiation exposures were measured using thermoluminescent dosimeters (TLDs). The sampling locations are described by Table 3 and shown in Figures 1-6.

Air was continuously sampled at four locations, Stations 1, 9, 12, and 27, as shown in Figures 1-6. These samples, 198 air particulate filters and 198 iodine cartridges, were collected generally at weekly intervals. One sample was not collected from Station 27 due to a mechanical failure in the sampling equipment.

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

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

DISCUSSION OF RESULTS

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

The tables in Appendix B contain the analytical results of the individual samples which were used to compile the summaries in Appendix A.

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

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

Water Samples

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

Airborne Radioactivity

Air particulate filters and iodine cartridges were collected at weekly intervals from four stations. Gross beta activity was measured on all filters. These measurements were consistent except for Samples 79599 and 79455 which were counted following an insufficient decay time. Therefore, the measured gross beta activity on these filters was elevated due to radon daughter activity. No iodine-131 was detected on any of the

charcoal cartridges. The LLDs were met for all these analyses. The particulate filters were composited quarterly by location and analyzed for gamma emitters. All of these analyses met required sensitivities.

Fish and Seafood Samples

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

Milk Samples

Raw milk samples were collected each month from two dairies. The required analytical sensitivity was met on noted isotopes in all samples except for barium-140 in Sample 79013. Cesium-137 activity was measured in Samples 79056 and 79280, but the measured activity was well below the reporting level for this isotope. This activity results from previous atmospheric nuclear weapons tests.

Food Products

Green leafy parts of vegetables grown in the Diablo Canyon area were collected from two farms at quarterly intervals. In addition, snow peas are collected at quarterly intervals from a farm along the plant access road. The required analytical sensitivities were met for noted isotopes on all samples except for iodine-131 on samples collected early in the year. These exceptions were caused by long delays between sampling and analysis. We have adjusted our procedures to lower this time interval and meet the sensitivity requirements. Small concentrations of naturally

occurring or fallout radioisotopes were measured in these samples, but all were well below the reporting levels.

Sediments

Sediment samples were collected from Diablo Cove at quarterly intervals. Although cesium-134 and -137 activities were measured in some of these samples, the levels measured were substantially below reporting levels. This activity results from previous atmospheric nuclear weapons tests.

Dosimetry

Victoreen Model TL-15 glass encapsulated $\text{CaF}_2\text{:Mn}$ thermoluminescent dosimeters are used in direct radiation monitoring in the Diablo Canyon environs. There are 21 dosimeter locations. Nineteen are changed monthly; two are exchanged quarterly. Station 28 is changed quarterly since it is difficult to change in adverse weather, and Station 29 is changed quarterly to allow comparison with state TLD data at this location. The data for 1979 are in agreement with data for the previous eight years. The data are given in Table B-7.

In addition to the routine dosimetry program, we also participated in the Fourth International Intercomparison of Environmental Dosimeters. This intercomparison was sponsored by the University of Texas, School of Public Health, and the Department of Energy, Environmental Measurements Laboratory. In the intercomparison, there were three groups of exposed dosimeters and one control group. One of the exposed groups was placed in the environment for three months of exposure to natural background. The other two groups of exposed dosimeters were given a laboratory exposure; one approximately equal to a typical three-month field exposure and one in

the range of 25-300 milliroentgens (mR). We sent two sets of dosimeters for each exposure group. One set was sealed in polyethylene plastic for protection. The other set was put into Schedule 80 PVC pipe to simulate the dosimeter holders used in the field at Diablo Canyon. The results of our participation in the Intercomparison are as follows:

<u>Exposure Type</u>	<u>Exposure Condition</u>	<u>PGandE Result (mR)</u>	<u>Actual Value (mR)</u>
Field	Outside PVC	14.0+1.9	14.1+0.7
Field	Inside PVC	14.4+2.1	
Lab "Low"	Outside PVC	11.2+3.4	12.2+1.2
Lab "Low"	Inside PVC	11.9+3.6	
Lab "High"	Outside PVC	44.3+5.6	45.8+4.6
Lab "High"	Inside PVC	44.3+5.6	

EPA ENVIRONMENTAL RADIOACTIVITY LABORATORY INTERCOMPARISON STUDIES PROGRAM

The DER radioanalytical laboratory participated in the Environmental Protection Agency's (EPA) Environmental Radioactivity Laboratory Intercomparison Studies (Cross-check) Program⁽⁴⁾ during 1979. We participated in the following determinations (sample mediums-radionuclide combination): diet samples containing gamma emitters; milk samples containing gamma emitters; water samples containing tritium, iodine-131, gamma emitters, and alpha and beta emitters; and air particulate samples containing alpha and beta emitters. Our participation was such that we received at least three samples of each of these determinations. The results of our participation are shown on Table A-8. As noted on the table, we have not received the known values from the EPA for several of the determinations conducted during 1979. As these known values will be available from the EPA, we do not plan to submit a supplementary report to include these values.

LAND USE CENSUS

Since Diablo Canyon Unit 1 did not receive an operating license and, therefore, did not achieve its initial criticality, a detailed land use census was not completed during 1979. However, a limited land use survey was conducted. This survey was an aerial survey by helicopter of all land area within five miles of the plant site. This aerial survey was conducted on October 24, 1979.

The results of this survey are shown on Figure 7. No milk animals were found within the first five miles from the plant in any sector. Eight structures were located which could serve as permanent residences. Of these residences, two had garden plots which potentially could have been used to grow leafy vegetables. But at the time of the survey, no crops were being grown. Also, identified in this survey was a section of the coastal plain along the site access road on which barley and snow peas are grown. Since no milk animals were detected nor any garden area with greater potential thyroid dose than the presently sampled farm area, we did not follow the aerial survey with a detailed ground survey.

METHODS OF SAMPLE COLLECTION AND ANALYSIS

Most samples are collected by DER personnel. A quarterly collection schedule is followed for marine, surface water, grain, and vegetable samples to insure that a sample is taken semiannually. California Polytechnic College Foundation personnel under the direction of Dr. F. Clogston collect terrestrial and occasionally some marine samples. PGandE Coast Valley Division personnel service the air particulate station at Station 9. The San Luis Obispo (SLO) County Health Department personnel service Station 29 dosimetry.

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

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

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

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

Air samplers are located at Stations 1, 9, 12, and 27 (Figures 1 through 4). The constant flow samplers have a flow rate in the range of 40 lpm. An HV-70 filter and a Scott TEDA impregnated charcoal cartridge for the collection of radioiodines are used. The filters and cartridges are concurrently collected on a weekly basis and mailed to DER. The filters are counted to determine gross beta activity at least 72 hours after collection to allow for naturally occurring short-lived radionuclides to decay, and the filters are combined quarterly for an analysis of gamma emitters. The cartridges are gamma scanned within one half-life (eight days) to determine I-131 concentration. The limit of detection of this analysis is typically 0.02 pCi per cubic meter of air sampled.

Gamma dosimetry is performed at Stations 1 to 18, 27, 28, and 29, shown in Figures 1 through 4. At Stations 1 to 18 and 27, a packet containing three Victoreen (Model TL-15) TLDs is exposed on a monthly basis and changed by PGandE personnel. At Stations 28 and 29 a packet of three TLDs are exposed quarterly and changed by PGandE personnel and the SLO County Health Department personnel, respectively. All TLDs after their exposure are then mailed to DER for readout.

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

TABLE 1

Marine Sampling Program

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

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

TABLE 2

Direct Radiation, Airborne, and Terrestrial Sampling Program

<u>Sample Item</u>	<u>Sampling Location</u>	<u>Type of Analysis</u>	<u>Collection Frequency</u>
Direct Radiation ^{a/}	21 stations ^{b/}	Gamma dose	Monthly ^{c/}
Airborne			
Particulates ^{d/}	4 stations ^{b/}	Gross beta Gamma isotopic	Weekly Quarterly composite
Iodine	4 stations ^{b/}	Gamma for I-131	Weekly
Surface water	2 stations ^{e/}	Gross beta ^{f/} , gamma isotopic ^{g/} , tritium	Quarterly
Grains and vegetables	Farm in San Luis Obispo area; farm in Guadalupe area; farm along plant access road ^{b/}	Gamma isotopic ^{g/}	Quarterly
Milk	Farm in San Luis Obispo area; farm in Guadalupe area ^{b/}	Gamma isotopic ^{g/} Radioiodine ^{g/}	Monthly Monthly

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

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

^{c/}Except Stations 28 and 29 which are quarterly.

^{d/}Filters changed weekly or as required by dust loading; analyzed at least 72 hours after filter change.

^{e/}Diablo Creek above 500 kv switchyard; Diablo Creek at Diablo Cove.

^{f/}Analyses performed on evaporate.

^{g/}Analyses performed on complete sample.

TABLE 3

Distances and Directions to Environmental Monitoring Stations

<u>Station Number</u>	<u>Station Name</u>	<u>Radial Direction (True Heading) (Degrees)</u>	<u>Radial Distance from Plant (Miles)</u>
1	Site, Tower E	175	0.2
2	Site, North of Diablo Cove	290	0.3
3	Site, Construction Yard	330	0.1
4	Site, Switchyard	52	0.5
5	Site, Tower E	94	0.6
6	Site, N.E. Batch Plant	125	0.6
7	Site, Tower A	128	0.5
8	Site, Tower D	70	0.5
9	Morro Bay Power Plant	358	11.2
10	Sunnyside School	10	6.9
11	Los Osos School	36	7.6
12	SLO Zone 1 Substation	68	11.2
13	Crowbar Canyon	327	1.6
14	Avila Beach	110	7.6
15	Oceano Substation	118	17.3
16	Pecho Creek Ruins and Mallo Farm	118	4.1
17	Shell Beach	110	10.8
18	Point Buchon	325	3.6
19	Diablo Cove	270	0.2
20	Diablo Creek above 500 kv switchyard at filter plant	65	0.8
21	Diablo Creek below 500 kv switchyard	285	0.2
22	Pismo Beach	115	12.6
23	Arroyo Grande	115	16.8
25	Cal Poly Farm	60	12.6
26	Morro Bay	0	10.9
27	Avila Gate	120	6.6
28	Site, Diablo Peak	103	1.1
29	SLO County Health Department	70	12.7
30	Woodland Dairy	122	17.9

TABLE 4

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

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m ³)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
Gross beta	4 ^b	1x10 ⁻²				
³ H	2000 (1000) ^b					
⁵⁴ Mn	15		130			
⁵⁹ Fe	30		260			
^{58,60} Co	15		130			
⁶⁵ Zn	30		260			
⁹⁵ Zr-Nb	15					
¹³¹ I	1 ^b	7x10 ⁻²		1	60 ^c	
^{134,137} Cs	15(10) ^b , 18	1x10 ⁻²	130	15	80	150
¹⁴⁰ Ba-La	15			15		

Table Notation

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

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

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

where

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

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

TABLE 4 - contd.

E is the counting efficiency (as counts per transformation)

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

2.22 is the number of transformation per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

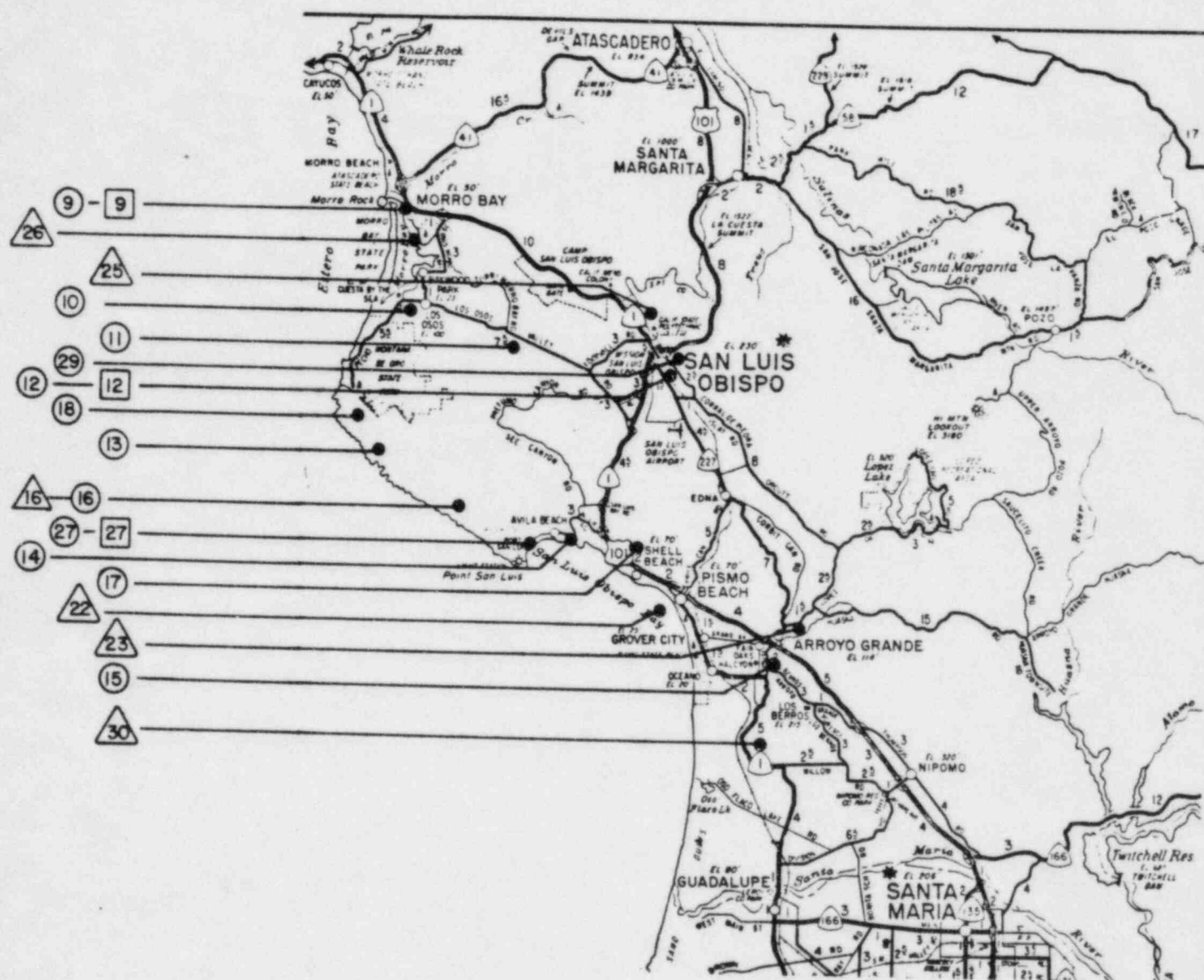
t is the elapsed time between sample collection (or end of the sample collection period) and time of counting

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

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

b - LLD for drinking water.

c - LLD for leafy vegetables.



0 5 10 15 Miles

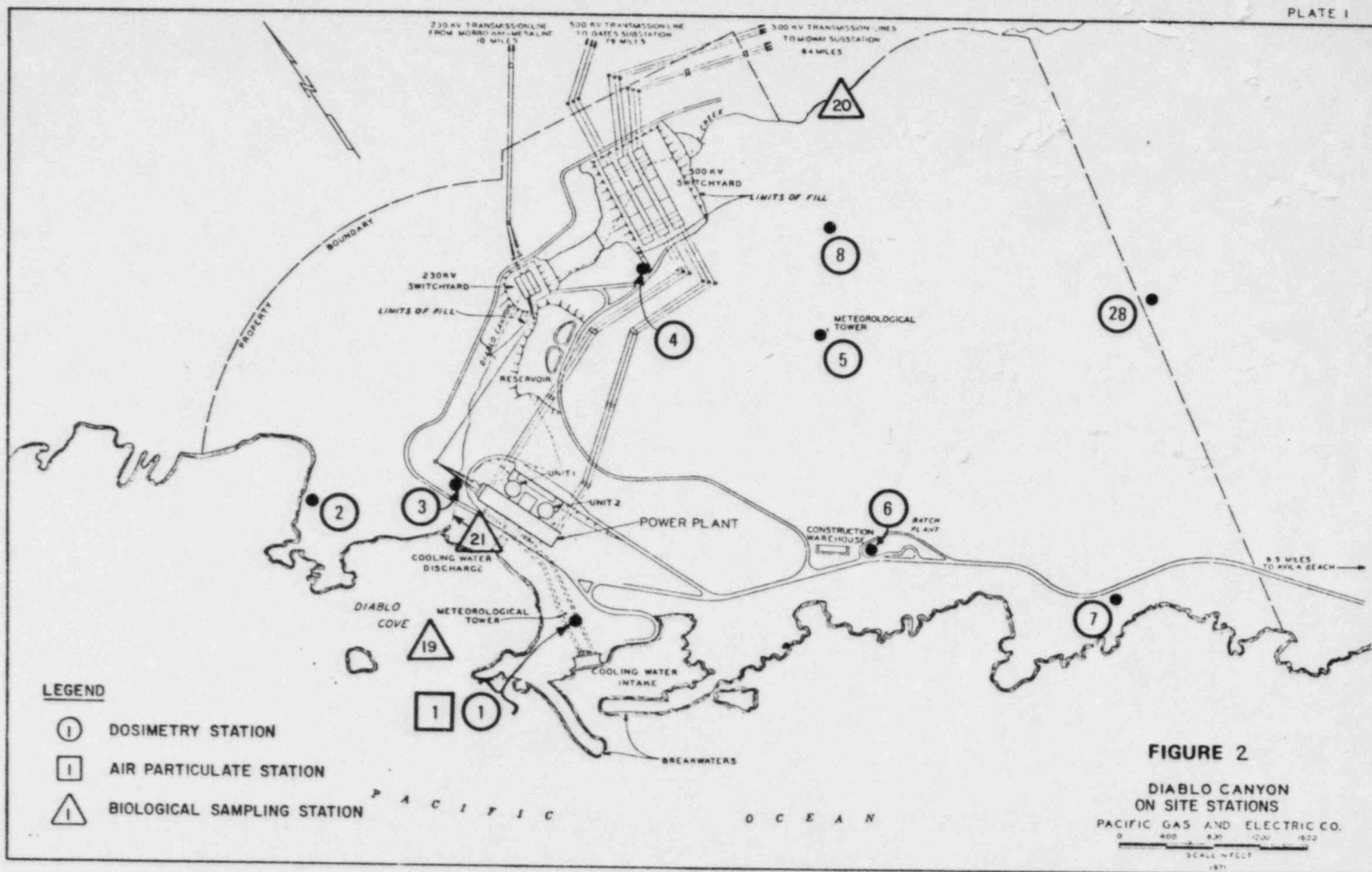
LEGEND

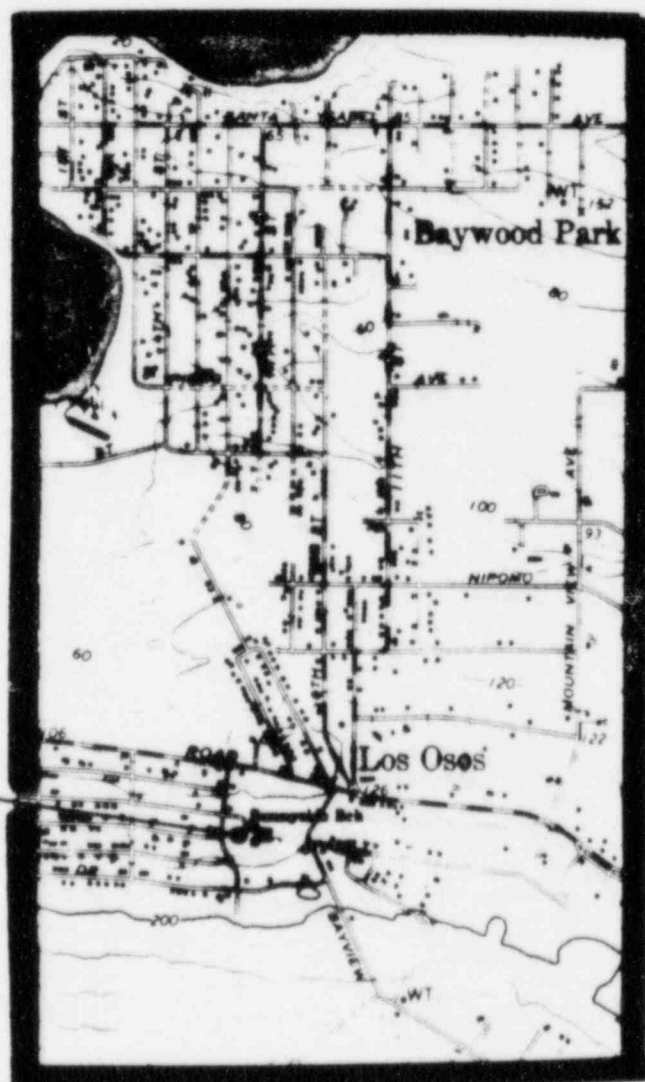
- (1) DOSIMETRY STATION
- [1] AIR PARTICULATE STATION
- △ BIOLOGICAL SAMPLING STATION

UNITS 1 AND 2 DIABLO CANYON SITE

Figure 1

Off Site Stations





UNITS 1 AND 2 DIABLO CANYON SITE

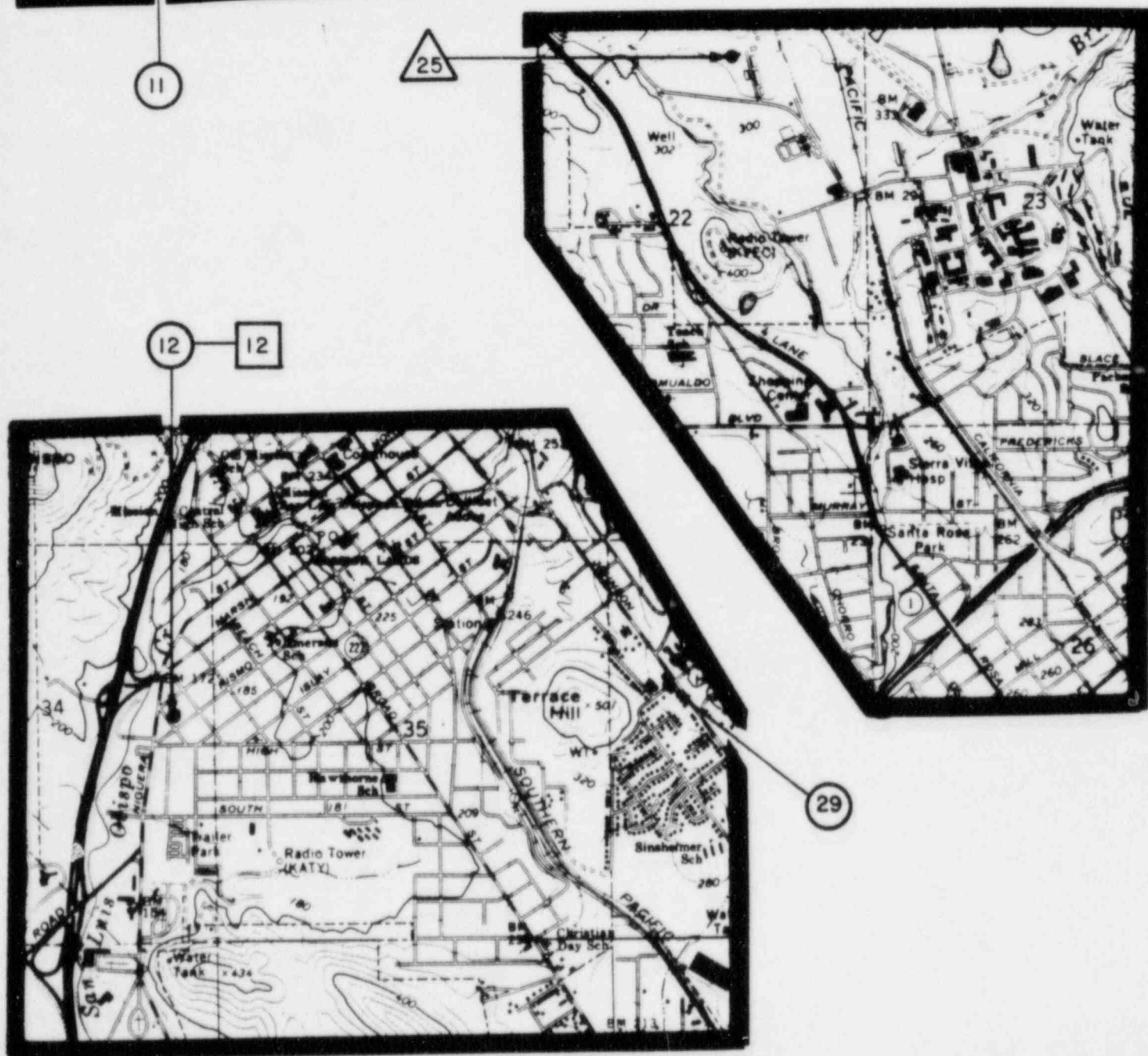
FIGURE 3

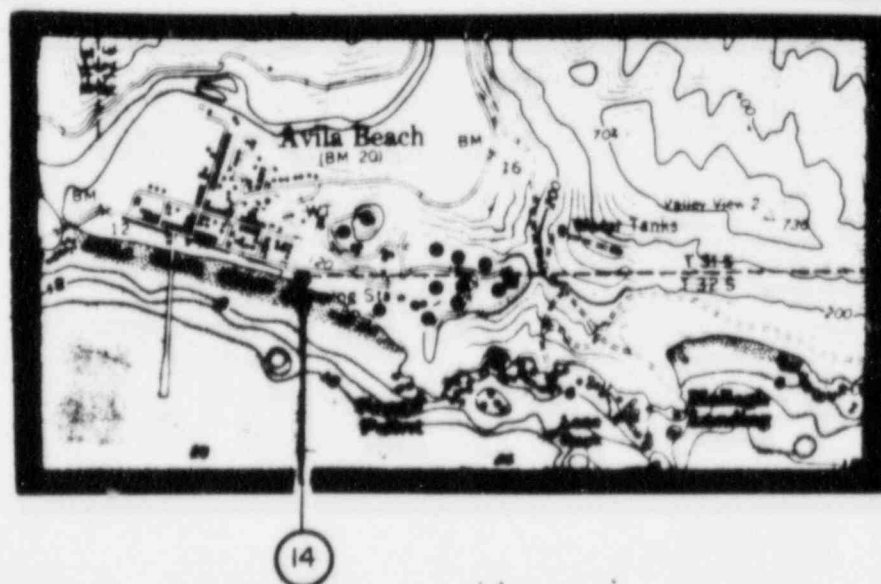
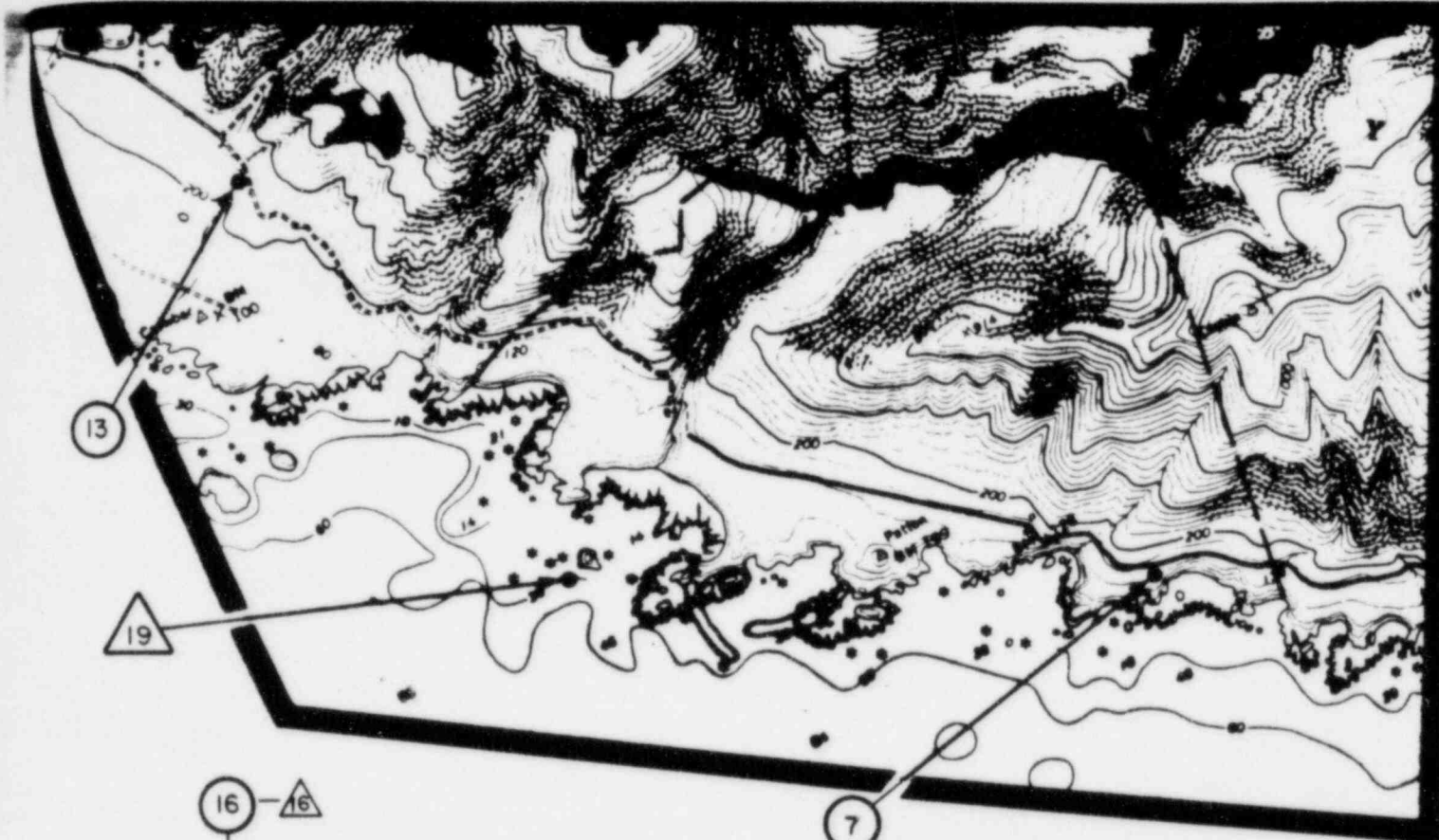
- ① DOSIMETRY STATION
- AIR PARTICULATE STATION
- △ BIOLOGICAL SAMPLING STATION

UNITS 1 AND 2
DIABLO CANYON SITE

FIGURE 4

- ① DOSIMETRY STATION
 □ AIR PARTICULATE STATION
 △ BIOLOGICAL SAMPLING STATION

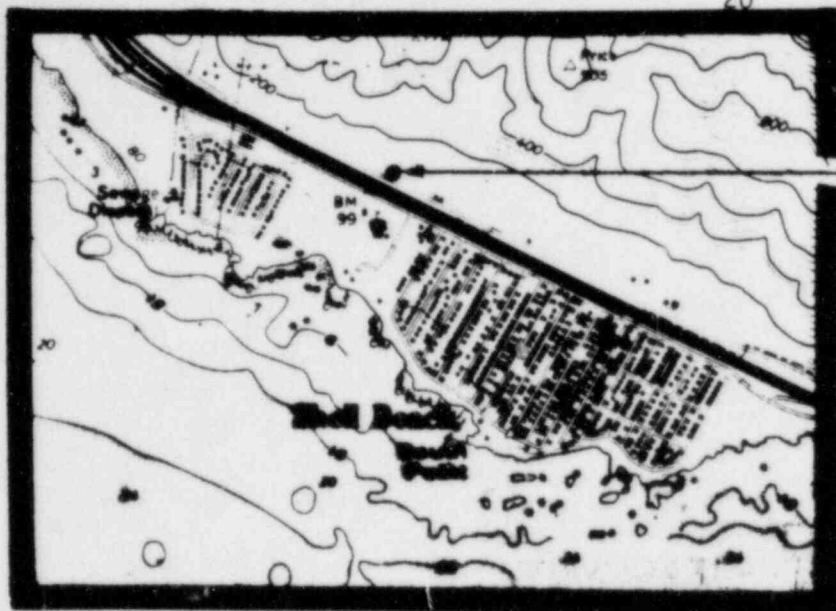




UNITS 1 AND 2 DIABLO CANYON SITE

FIGURE 5

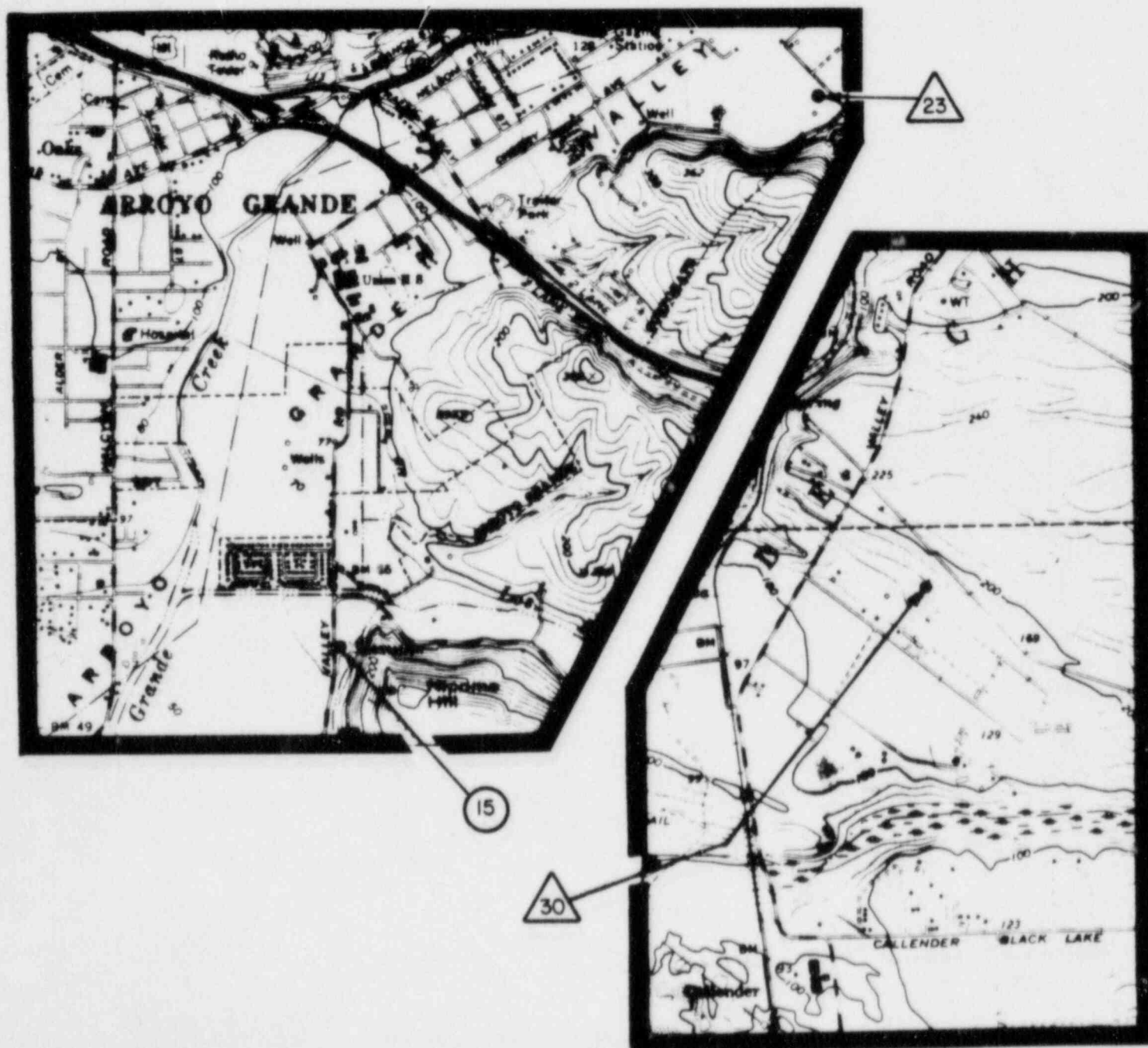
- ① DOSIMETRY STATION
- AIR PARTICULATE STATION
- △ BIOLOGICAL SAMPLING STATION

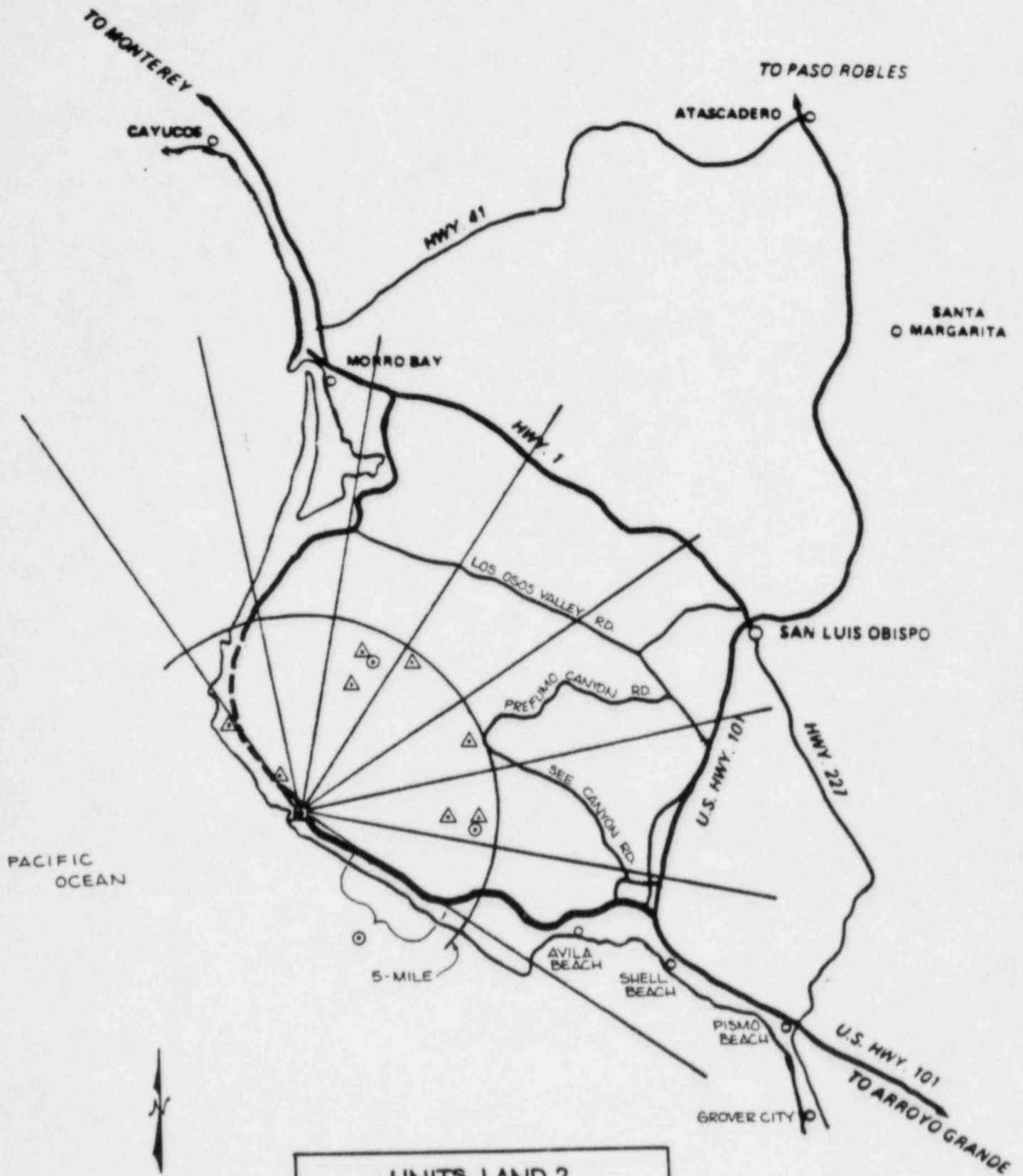


UNITS 1 AND 2 DIABLO CANYON SITE

FIGURE 6

- ① DOSIMETRY STATION
- AIR PARTICULATE STATION
- △ BIOLOGICAL SAMPLING STATION





UNITS 1 AND 2 DIABLO CANYON SITE

FIGURE 7. LAND USE CENSUS

⊙ GARDENS OR FARM

△ RESIDENCES

REFERENCES

1. Letter to Joseph Ward, Department of Health Services from R. F. Cayot, concerning modifications of environmental radiological program for the Diablo Canyon site, dated June 14, 1979.
2. Environmental Radiation Study in the Vicinity of Diablo Canyon, California, Reports 1-35.
3. NRC Branch Technical Position on Environmental Radiation Monitoring, Revision 1 (November 1979).
4. EPA-600/4-78-032 (June 1978), Environmental Radioactivity Laboratory Intercomparison Studies Program 1978-1979.

APPENDIX A

Environmental Radiological Monitoring Program Summaries

TABLE A-1

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 Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Seawater (pCi/liter)	Tritium(3)	360	None detected	Sta.19, 0.2 mi, 270°	None detected	-	0
	Gamma Isotopic (4)			Sta.19, 0.2 mi, 270°		-	0
	54Mn	4.2	None detected		None detected		
	59Fe	14	None detected		None detected		
	58Co	5.1	None detected		None detected		
	60Co	3.1	None detected		None detected		
	65Zn	7.7	None detected		None detected		
	95Zr	9.8	None detected		None detected		
	95Nb	5.6	None detected		None detected		
	131I	130(c)	None detected		None detected		
	134Cs	3.7	None detected		None detected		
	137Cs	3.9	None detected		None detected		
	140Ba	87(c)	None detected		None detected		
	140La	42(c)	None detected		None detected		

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

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

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

TABLE A-1b

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323
 Location of Facility San Luis Obispo, California Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Surface Water (pCi/liter)	Gross beta (8)	4	3.16(8/8) 2.25-3.91	Sta.21, 0.2 mi, 285°	3.30(4/4) 2.89-3.91	-	0
	Tritium(6)	200	None detected	-	None detected	-	0
	Gamma Isotopic(8)			-		-	0
	54Mn	4.4	None detected		None detected		
	59Fe	13	None detected		None detected		
	58Co	6.2	None detected		None detected		
	60Co	4.3	None detected		None detected		
	65Zn	9.4	None detected		None detected		
	95Zr	11	None detected		None detected		
	95Nb	6.3	None detected		None detected		
	131I	142(c)	None detected		None detected		
	134Cs	4.6	None detected		None detected		
	137Cs	4.5	None detected		None detected		
	140Ba	86(c)	None detected		None detected		
	140La	39(c)	None detected		None detected		

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

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

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

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 Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Airborne (pCi/m ³)	131I(196)	0.07	None detected	-	-	Sta.9 None detected	0
	Gross Beta (198)	0.01	0.031(148/148) 0.010-0.125	Sta.12, 11.2 mi, 68°	0.034(49/49) 0.011-0.125	0.034(50/50) 0.010-0.119	0
	Cs-134	0.01	None detected	-	-	None detected	0
	Cs-137	0.01	None detected	-	-	None detected	0

A-3

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

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

TABLE A-3

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323
 Location of Facility San Luis Obispo, California Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Fish and Seafood (pCi/kg wet)	Gamma Isotopic(28)			Sta.19, 0.2 mi, 270°		Sta.26	0
	54Mn	47.5	None detected		-	None detected	
	59Fe	351(c)	None detected		-	None detected	
	58Co	80.5	None detected		-	None detected	
	60Co	36.2	None detected		-	None detected	
	65Zn	98.4	None detected		-	None detected	
	134Cs	44.1	None detected		-	None detected	
	137Cs	46.7	10.7(1/14)		-	None detected	
					10.7(1/14)	38.3(5/9) 18.0-72.3	

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

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

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

TABLE A-4

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323
 Location of Facility San Luis Obispo, California Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Milk (pCi/liter)	131I(24)	0.20	None detected	Sta. 30, 17.9 mi, 122°	-	Sta.25 None detected	0
	Gamma Isotopic(24)			-	-		0
	134Cs	6.4	None detected			None detected	
	137Cs	7.5	None detected			2.05(2/12) 1.8-2.3	
	140Ba	74(c)	None detected			None detected	
	140La	29	None detected			None detected	

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

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

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

TABLE A-5

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323
 Location of Facility San Luis Obispo, California Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Food Products (pCi/kg wet)	Gamma Isotopic(12)					Sta.25, 12.6 mi, 60°	
	131I	7811(c)	None detected	-	-	None detected	0
	134Cs	9.2	None detected	-	-	None detected	0
	137Cs	7.5	None detected	-	-	7.1(1/4)	0

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

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

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

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 Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Sediment (pCi/kg dry)	Gamma Isotopic(4)			Sta.19, 0.2 mi, 270°		-	0
	134Cs	25	24(3/4) 21-29		24(3/4) 21-29		
	137Cs	25	27.5(2/4) 22-33		27.5(3/4) 22-33		

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

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

TABLE -7

Environmental Radiological Monitoring Program Summary

Name of Facility Diablo Canyon Power Plant Docket No. 50-275 and 50-323
 Location of Facility San Luis Obispo, California Reporting Period 1/1/79-12/31/79
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection(a) (LLD)	All Indicator Locations Mean(1)(b) Range(b)	Location with Highest Annual Mean		Control Locations Mean(1)(b) Range(b)	Number of Reportable Occurrences
				Name, Distance and Direction	Mean(1)(b) Range(b)		
Direct Radiation(mR)	TLD Packets (236)	1 mR/mo	76.9(212/212) 56.2-107.0 mR/yr	Sta.4, 0.4 mi, 58°	8.8(12/12) 7.4-11.2 mR/mo	Sta.9 and 11 64.0(24/24) 60.4-67.6 mR/yr	0

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

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

TABLE A-8

Diablo Canyon Power Plant 1979 Annual Report
EPA Environmental Radiological Laboratory Intercomparison Studies Program

Sample Type	Radionuclide	Date	Results ^{1/}	
			EPA Known Value + Expected Precision()	DER Average Value + Experimental Precision()
Diet	I-131	3/9/79	90+5	84+15
		7/13/79	18+5	8+0
		11/15/79	127+6	114+33
	Cs-137	3/9/79	74+5	83+1
		7/13/79	33+5	25+4
		11/15/79	22+5	23+6
	K	3/9/79	2700+135	2530+239
		7/13/79	2650+130	2390+200
		11/15/79	2550+127	1340+76
Milk	I-131	1/26/79	105+5	112+6
		4/27/79	96+1.7	92+9
		7/27/79	17+5	15+3
		11/2/79	637+32	580+71
	Cs-137	1/26/79	49+5	56+4
		4/27/79	154+2.7	132+23
		7/27/79	12+5	17+1
		11/2/79	49+5	45+2
	K	1/26/79	1560+78	1383+84
		4/27/79	1560+26	1110+35
		7/27/79	1630+83	1227+21
		11/2/79	1470+73	1630+15

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

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

*Known values not yet received from the EPA.

TABLE A-8 - contd.

Sample Type	Radionuclide	Date	Results	
			EPA	DER
			Known Value + Expected Precision()	Average Value + Experimental Precision()
Water	H-3	2/9/79	1280+331	1193+106
		4/13/79	2270+349	2263+86
		6/15/79	1540+337	1553+142
		8/10/79	1480+335	1537+42
		10/5/79	1560+370	1560+30
		12/14/79	2040+347	2187+58
	I-131	4/6/79	40+4	17+1
		8/3/79	26+5	20+1
		12/7/79	53+5	44+0
	Cr-51	10/5/79	113+6	114+4
	Co-60	2/2/79	9+5	8.7+1
		6/8/79	47+5	40.6+1
		10/5/79	6+5	5.3+0.5
	Cs-134	2/2/79	6+5	5.7+1
		6/8/79	71+5	60+4
		10/5/79	7+5	6.3+0.5
	Cs-137	2/2/79	12+5	13+1
		10/5/79	11+5	11+0
	Alpha	1/19/79	6+5	9+0
		3/23/79	10+5	9+0
		5/25/79	18+0.4	15.7+2.3
	Beta	1/19/79	16+5	16+0
		3/23/79	16+5	15+1.0
		5/25/79	22+0.4	21+1.0
Air Particulates	Alpha	1/5/79	5+5	4.3+1
		3/30/79	14+5	13.7+1
		6/29/79	9+5	10+1
		10/5/79	10+5	10.3+0.6
		12/28/79	*	12+1
	Beta	1/5/79	18+5	19.3+1
		3/30/79	63+5	58.7+2
		6/29/79	30+5	29.7+1
		10/5/79	31+5	29+0.6
		12/28/79	*	30.3+1.5

APPENDIX B

Analytical Results of Individual Samples

TABLE B-1
Diablo Canyon Power Plant 1979 Annual Report
Water Samples, Collected 1979 (pCi/l)

Sample (Station No.)	Date Collected	Gross Beta	³ H	⁵⁴ Mn	⁵⁹ Fe	⁵⁸ Co	⁶⁰ Co	⁶⁵ Zn	⁹⁵ Zr	⁹⁵ Nb	¹³¹ I	¹³⁴ Cs	¹³⁷ Cs	¹⁴⁰ Ba	¹⁴⁰ La	Others
79075 (19)* Seawater	2/27/79	NA	NA	<2.3	<6.6	<3.2	<2.5	<5.9	<5.7	<3.2	<2.3	<2.6	<2.8	<5.3	<2.7	-
79076 (21) Surface Water	2/27/79	3.85+ 0.47 ⁻	NA	<0.9	<1.6	<0.9	<0.9	<1.8	<1.6	<0.9	<1.2	<0.9	<0.9	<2.7	<1.3	-
79077 (20) Surface Water	2/27/79	3.28+ 0.43 ⁻	NA	<2.8	<8.8	<3.3	<3.6	<7.2	<5.7	<3.8	<5.8	<3.2	<3.1	<11	<6.3	-
79200 (19)* Seawater	5/15/79	NA	<161	<4.2	<14	<5.1	<3.1	<7.7	<9.8	<5.6	<130	<3.7	<3.9	<87	<42	-
79201 (20) Surface Water	5/15/79	3.17+ 0.30 ⁻	<161	<1.9	<6.6	<2.5	<1.7	<3.9	<5.9	<2.8	<62	<1.8	<1.8	<39	<19	-
79202 (21) Surface Water	5/15/79	3.91+ 0.35 ⁻	<161	<3.4	<13	<5.0	<3.8	<9.2	<11	<6.3	<142	<3.8	<3.9	<86	<39	-
79402 (19)* Seawater	8/9/79	NA	<351	<1.9	<6.2	<2.5	<2.0	<4.6	<4.5	<2.7	<33	<2.0	<2.0	<25	<12	-
79410 (20) Surface Water	8/9/79	2.82+ 0.26 ⁻	<350	<4.4	<13	<6.2	<4.3	<9.4	<11	<6.0	<80	<4.6	<4.5	<62	<26	-
79411 (21) Surface Water	8/9/79	3.10+ 0.29 ⁻	<350	<2.0	<5.4	<2.4	<1.7	<4.1	<4.4	<2.6	<55	<1.8	<1.7	<37	<16	-
79524 (19)* Seawater	11/13/79	NA	<206	<3.5	<6.7	<3.9	<3.0	<7.2	<8.1	<4.3	<6.8	<3.6	<3.3	<13	<10	-
79526 (20) Surface Water	11/13/79	2.25+ 0.21 ⁻	<109	<2.0	<3.8	<2.0	<2.0	<4.0	<4.4	<1.9	<3.5	<2.0	<1.9	<7.3	<5.0	-
79527 (21) Surface Water	11/13/79	2.89+ 0.25 ⁻	<108	<3.5	<6.7	<3.9	<3.0	<7.2	<8.1	<4.3	<6.8	<3.6	<3.3	<13	<10	-

*Sample analyzed at DER, then sent to State Sanitation and Radiation Laboratory.

TABLE B-2

Diablo Canyon 1979 Annual Report
Airborne Radioactivity
Station 1 (pCi/m^3), First Quarter

Sample Number	Volume (m^3)	Collection Date	Counting Date	Gross Beta Activity	¹³¹ I
79005	367	1/8/79	1/29/79	0.038 \pm 0.003	<u>1/</u>
79016	448	1/15/79	1/25/79	0.022 \pm 0.001	
79028	550	1/24/79	2/12/79	0.046 \pm 0.003	
79034	306	1/29/79	2/13/79	0.031 \pm 0.002	
79044	427	2/5/79	2/14/79	0.031 \pm 0.002	
79058	550	2/14/79	2/23/79	0.048 \pm 0.003	
79066	367	2/20/79	2/26/79	0.025 \pm 0.001	
79081	536	3/1/79	3/9/79	0.028 \pm 0.002	
79108	258	3/5/79	3/10/79	0.025 \pm 0.002	
79119	428	3/12/79	3/16/79	0.041 \pm 0.003	
79132	428	3/19/79	3/29/79	0.024 \pm 0.002	
79137	470	3/27/79	4/2/79	0.046 \pm 0.004	
79149	381	4/2/79	4/13/79	0.035 \pm 0.002	
Quarterly Composite		1/2/79-4/2/79	5/3/79	¹⁴⁴ Ce = 0.002 \pm 0.001 ¹³⁴ , ¹³⁷ Cs = <0.01	

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

TABLE B-2 - contd.

Airborne Radioactivity
Station 1 (pCi/m³), Second Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>¹³¹I</u>
79159	493	4/10/79	4/20/79	0.028±0.002	<u>1/</u>
79165	365	4/16/79	4/24/79	0.031±0.002	
79175	473	4/24/79	5/1/79	0.036±0.002	
79184	384	4/30/79	5/2/79	0.034±0.002	
79194	427	5/7/79	5/10/79	0.023±0.002	
79231	958	5/23/79	5/25/79	0.029±0.001	
79237	383	5/29/79	6/4/79	0.021±0.002	
79282	1037	6/15/79	6/20/79	0.032±0.001	
79288	424	6/22/79	6/28/79	0.013±0.001	
79295	667	7/3/79	7/10/79	0.017±0.001	
Quarterly Composite 4/2/79-7/3/79 8/7/79				⁷ Be = 0.059±0.007 ¹³⁴ , ¹³⁷ Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be <0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 1 (pCi/m³), Third Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>131I</u>
79302	377	7/9/79	7/12/79	0.010+0.001	<u>1/</u>
79318	428	7/16/79	7/19/79	0.018+0.002	
79324	429	7/23/79	7/26/79	0.017+0.001	
79332	427	7/30/79	8/1/79	0.029+0.002	
79351	483	8/7/79	8/13/79	0.017+0.002	
79358	477	8/15/79	8/17/79	0.027+0.002	
79366	384	8/21/79	8/24/79	0.013+0.001	
79378	411	8/28/79	8/30/79	0.023+0.002	
79418	500	9/5/79	9/13/79	0.012+0.001	
79423	418	9/12/79	9/17/79	0.020+0.002	
79432	324	9/17/79	9/21/79	0.039+0.003	
79448	550	9/26/79	10/2/79	0.034+0.002	
79454	353	10/2/79	10/4/79	0.076+0.005	
Quarterly Composite 7/3/79-10/2/79 10/5/79				7Be = 0.050+0.004 134, 137Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be
<0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 1 (pCi/m³), Fourth Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>¹³¹I</u>
79463	442	10/9/79	10/15/79	0.044 \pm 0.003	<u>1/</u>
79475	487	10/17/79	10/24/79	0.022 \pm 0.002	
79478	307	10/22/79	10/26/79	0.019 \pm 0.002	
79490	430	10/29/79	11/1/79	0.024 \pm 0.002	
79498	426	11/5/79	11/8/79	0.025 \pm 0.002	
79516	550	11/14/79	11/19/79	0.044 \pm 0.003	
79536	371	11/20/79	11/29/79	0.049 \pm 0.004	
79540	365	11/26/79	11/29/79	0.029 \pm 0.002	
79559	428	12/3/79	12/7/79	0.051 \pm 0.004	
79580	429	12/10/79	12/17/79	0.052 \pm 0.004	
79596	428	12/17/79	12/21/79	0.070 \pm 0.004	
79602	418	12/24/79	12/31/79	0.030 \pm 0.002	
79611	426	12/31/79	1/7/80	0.024 \pm 0.002	

Quarterly Composite 10/2/79-12/31/79 1/8/80 ⁷Be = 0.084 \pm 0.007
^{134,137}Cs = $\bar{<}$ 0.01

1/Unless specified, iodine-131 concentrations were determined to be
 $\bar{<}$ 0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 9 (pCi/m³), First Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>131I</u>
79007	428	1/10/79	1/29/79	0.040 <u>±</u> 0.002	<u>1/</u>
79019	427	1/17/79	1/25/79	0.020 <u>±</u> 0.002	
79027	428	1/24/79	2/12/79	0.058 <u>±</u> 0.004	
79039	428	1/31/79	2/13/79	0.033 <u>±</u> 0.002	
79047	427	2/7/79	2/14/79	0.034 <u>±</u> 0.002	
79063	428	2/14/79	2/23/79	0.054 <u>±</u> 0.002	
79067	428	2/21/79	2/26/79	0.023 <u>±</u> 0.001	
79074	428	2/28/79	3/9/79	0.026 <u>±</u> 0.002	
79114	428	3/7/79	3/10/79	0.025 <u>±</u> 0.002	
79122	428	3/14/79	3/16/79	0.053 <u>±</u> 0.003	
79136	428	3/21/79	4/2/79	0.040 <u>±</u> 0.003	
79140	428	3/28/79	4/6/79	0.045 <u>±</u> 0.002	

Quarterly Composite 1/3/79-3/28/79 5/3/79 134,137Cs = <0.01

1/Unless specified, iodine-131 concentrations were determined to be
<0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 9 (pCi/m³), Second Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>¹³¹I</u>
79152	428	4/4/79	4/16/79	0.031±0.002	<u>1/</u>
79164	428	4/11/79	4/23/79	0.029±0.002	
79174	487	4/19/79	4/25/79	0.026±0.001	
79178	367	4/25/79	5/2/79	0.040±0.002	
79187	425	5/2/79	5/4/79	0.033±0.003	
79197	428	5/9/79	5/10/79	0.080±0.004	
79209	489	5/17/79	5/24/79	0.029±0.001	
79234	367	5/23/79	5/25/79	0.042±0.003	
79240	427	5/30/79	6/4/79	0.022±0.001	
79247	428	6/6/79	6/11/79	0.040±0.003	
79276	428	6/13/79	6/18/79	0.028±0.002	
79287	489	6/21/79	6/25/79	0.016±0.001	
79291	367	6/27/79	6/29/79	0.020±0.001	
79294	366	7/3/79	7/6/79	0.026±0.001	
Quarterly Composite 3/28/79-7/3/79 8/8/79				⁷ Be = 0.040±0.006 ¹³⁴ , ¹³⁷ Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be <0.07 pCi/m³.

Airborne Radioactivity
Station 9 (pCi/m³), Third Quarter

Sample Number	Volume (m ³)	Collection Date	Counting Date	Gross Beta Activity	131I
79307	489	7/11/79	7/17/79	0.010±0.001	1/
79321	428	7/18/79	7/19/79	0.041±0.002	
79329	428	7/25/79	7/26/79	0.027±0.002	
79337	428	8/1/79	8/3/79	0.024±0.001	
79343	428	8/8/79	8/13/79	0.015±0.002	
79359	428	8/15/79	8/17/79	0.026±0.002	
79369	427	8/22/79	8/27/79	0.011±0.001	
79399	855	9/5/79	9/10/79	0.010±0.001	
79424	428	9/12/79	9/17/79	0.020±0.002	
79435	428	9/19/79	9/24/79	0.035±0.002	
79447	428	9/26/79	10/3/79	0.033±0.003	
79457	428	10/3/79	11/16/79	0.044±0.002	

Quarterly Composite 7/3/79-10/3/79 10/6/79 7Be = 0.047+0.003
134, 137Cs = $\bar{<0.01}$

1/Unless specified, iodine-131 concentrations were determined to be
<0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 9 (pCi/m³), Fourth Quarter

Sample Number	Volume (m ³)	Collection Date	Counting Date	Gross Beta Activity	¹³¹ I
79466	427	10/10/79	10/15/79	0.043±0.003	<u>1</u> /
79474	428	10/17/79	10/23/79	0.019±0.002	
79485	428	10/24/79	10/30/79	0.018±0.002	
79493	428	10/31/79	11/5/79	0.018±0.001	
79505	428	11/7/79	11/13/79	0.021±0.002	
79513	428	11/14/79	11/19/79	0.049±0.003	
79533	427	11/21/79	11/29/79	0.048±0.004	
79576	856	12/5/79	12/7/79	0.061±0.002	
79586	428	12/12/79	12/17/79	0.056±0.003	
79599	428	12/19/79	12/21/79	0.119±0.005	
79605	429	12/26/79	1/2/80	0.023±0.001	
79616	426	1/2/80	1/7/80	0.027±0.002	
Quarterly Composite		10/3/79-1/2/80	1/9/80	⁷ Be = 0.084±0.010 ¹³⁴ , ¹³⁷ Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be <0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 12 (pCi/m³), First Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>131I</u>
79006	364	1/8/79	1/29/79	0.056±0.003	<u>1/</u>
79017	444	1/15/79	1/25/79	0.022±0.001	
79029	550	1/24/79	2/13/79	0.050±0.002	
79035	306	1/29/79	2/13/79	0.035±0.003	
79045	427	2/5/79	2/14/79	0.020±0.002	
79059	589	2/15/79	2/23/79	0.047±0.003	
79068	330	2/20/79	2/27/79	0.021±0.002	
79082	537	3/1/79	3/9/79	0.027±0.002	
79109	258	3/5/79	3/10/79	0.024±0.002	
79120	429	3/12/79	3/18/79	0.042±0.002	
79133	426	3/19/79	3/29/79	0.030±0.002	
79138	467	3/27/79	4/6/79	0.045±0.003	
79150	380	4/2/79	4/16/79	0.035±0.002	
Quarterly Composite 1/2/79-4/2/79 5/3/79				7Be = 0.066±0.004 134,137Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be
<0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 12 (pCi/m³), Second Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>¹³¹I</u>
79160	501	4/10/79	4/20/79	0.029+0.002	<u>1/</u>
79166	403	4/17/79	4/24/79	0.028+0.002	
79176	428	4/24/79	5/1/79	0.043+0.002	
79185	388	4/30/79	5/3/79	0.033+0.002	
79195	427	5/7/79	5/10/79	0.027+0.002	
79232	955	5/23/79	5/25/79	0.036+0.001	
79238	390	5/29/79	6/4/79	0.023+0.002	
79283	1037	6/15/79	6/20/79	0.033+0.001	
79289	431	6/22/79	6/28/79	0.016+0.001	
79296	652	7/3/79	7/10/79	0.017+0.001	
Quarterly Composite		4/2/79-7/3/79	8/3/79	⁷ Be = 0.062+0.007 ^{134,137} Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be <0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 12 (pCi/m^3), Third Quarter

<u>Sample Number</u>	<u>Volume (m^3)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>^{131}I</u>
79303	386	7/9/79	7/13/79	0.011 ± 0.001	<u>1/</u>
79319	428	7/16/79	7/19/79	0.028 ± 0.002	
79325	429	7/23/79	7/26/79	0.021 ± 0.002	
79333	427	7/30/79	8/1/79	0.049 ± 0.003	
79352	483	8/7/79	8/14/79	0.017 ± 0.001	
79360	474	8/15/79	8/20/79	0.021 ± 0.002	
79367	382	8/21/79	8/24/79	0.018 ± 0.001	
79379	407	8/28/79	8/30/79	0.050 ± 0.002	
79419	510	9/5/79	9/13/79	0.013 ± 0.002	
79425	407	9/12/79	9/17/79	0.028 ± 0.002	
79433	328	9/17/79	9/24/79	0.042 ± 0.003	
79449	551	9/26/79	10/2/79	0.031 ± 0.002	
79455	365	10/2/79	10/4/79	0.125 ± 0.007	
Quarterly Composite 7/3/79-10/2/79 10/6/79				$^7\text{Be} = 0.048 \pm 0.002$ $^{134}, ^{137}\text{Cs} = < 0.01$	

1/Unless specified, iodine-131 concentrations were determined to be $< 0.07 \text{ pCi/m}^3$.

TABLE B-2 - contd.

Airborne Radioactivity
Station 12 (pCi/m³), Fourth Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>131I</u>
79464	429	10/9/79	10/15/79	0.045 \pm 0.003	<u>1/</u>
79476	487	10/17/79	10/24/79	0.031 \pm 0.003	
79479	308	10/22/79	10/26/79	0.020 \pm 0.002	
79491	430	10/29/79	11/1/79	0.025 \pm 0.002	
79499	425	11/5/79	11/8/79	0.029 \pm 0.002	
79517	550	11/14/79	11/20/79	0.042 \pm 0.003	
79537	370	11/20/79	11/29/79	0.041 \pm 0.003	
79541	366	11/26/79	11/29/79	0.034 \pm 0.002	
79560	427	12/3/79	12/7/79	0.041 \pm 0.003	
79581	429	12/10/79	12/17/79	0.049 \pm 0.004	
79597	429	12/17/79	12/21/79	0.057 \pm 0.003	
79603	418	12/24/79	12/31/79	0.039 \pm 0.002	
79612	428	12/31/79	1/7/80	0.026 \pm 0.002	

Quarterly Composite 10/2/79-12/31/79 1/9/80

7Be = 0.068 \pm 0.004
134,137Cs = \leq 0.01

1/Unless specified, iodine-131 concentrations were determined to be
<0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 27 (pCi/m³), First Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>131I</u>
<u>2/</u>		1/8/79			<u>1/</u>
79018	447	1/15/79	1/25/79	0.022+0.002	
79030	550	1/24/79	2/13/79	0.051+0.003	
79036	306	1/29/79	2/14/79	0.034+0.002	
79046	427	2/5/79	2/14/79	0.025+0.001	
79060	551	2/14/79	2/23/79	0.058+0.003	
79069	367	2/20/79	2/28/79	0.024+0.001	
79083	536	3/1/79	3/9/79	0.024+0.002	
79110	258	3/5/79	3/10/79	0.021+0.002	
79121	428	3/12/79	3/18/79	0.037+0.002	
79134	428	3/19/79	4/2/79	0.030+0.002	
79139	469	3/27/79	4/6/79	0.042+0.003	
79151	387	4/2/79	4/16/79	0.039+0.002	

Quarterly Composite 1/15/79-4/2/79 5/4/79 134,137Cs = <0.01

1/Unless specified, iodine-131 concentrations were determined to be <0.07 pCi/m³.

2/Sampler malfunction - no sample collected.

TABLE B-2 - contd.

Airborne Radioactivity
Station 27 (pCi/m³), Second Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>131I</u>
79161	489	4/10/79	4/23/79	0.033+0.002	<u>1/</u>
79167	362	4/16/79	4/24/79	0.028+0.002	
79177	473	4/24/79	5/1/79	0.033+0.002	
79186	386	4/30/79	5/3/79	0.033+0.002	
79196	427	5/7/79	5/10/79	0.029+0.003	
79233	957	5/23/79	5/25/79	0.037+0.002	
79239	388	5/29/79	6/4/79	0.025+0.001	
79284	1037	6/15/79	6/20/79	0.034+0.002	
79290	430	6/22/79	6/28/79	0.017+0.001	
79297	656	7/3/79	7/23/79	0.018+0.001	
Quarterly Composite		4/2/79-7/3/79	8/6/79	7Be = 0.044+0.005 134,137Cs = <0.01	

1/Unless specified, iodine-131 concentrations were determined to be <0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 27 (pCi/m³), Third Quarter

<u>Sample Number</u>	<u>Volume (m³)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>¹³¹I</u>
79304	381	7/9/79	7/13/79	0.014±0.001	<u>1/</u>
79320	428	7/16/79	7/19/79	0.022±0.002	
79326	428	7/23/79	7/26/79	0.016±0.001	
79334	425	7/30/79	8/2/79	0.019±0.001	
79353	483	8/7/79	8/14/79	0.014±0.002	
79361	475	8/15/79	8/20/79	0.018±0.002	
79368	385	8/21/79	8/27/79	0.011±0.001	
79380	409	8/28/79	9/4/79	0.015±0.001	
79420	502	9/5/79	9/13/79	0.015±0.001	
79426	412	9/12/79	9/18/79	0.020±0.002	
79434	326	9/17/79	9/24/79	0.035±0.003	
79450	550	9/26/79	10/3/79	0.032±0.002	
79456	359	10/2/79	10/4/79	0.071±0.005	

Quarterly Composite 7/3/79-10/2/79 10/8/79 ⁷Be = 0.043±0.005
^{134,137}Cs = <0.01

1/Unless specified, iodine-131 concentrations were determined to be
<0.07 pCi/m³.

TABLE B-2 - contd.

Airborne Radioactivity
Station 27 (pCi/m^3), Fourth Quarter

<u>Sample Number</u>	<u>Volume (m^3)</u>	<u>Collection Date</u>	<u>Counting Date</u>	<u>Gross Beta Activity</u>	<u>^{131}I</u>
79465	435	10/9/79	10/15/79	0.044 \pm 0.003	<u>1/</u>
79477	487	10/17/79	10/24/79	0.033 \pm 0.003	
79480	305	10/22/79	10/26/79	0.011 \pm 0.001	
79492	430	10/29/79	11/5/79	0.017 \pm 0.001	
79500	425	11/5/79	11/8/79	0.021 \pm 0.002	
79518	550	11/14/79	11/20/79	0.041 \pm 0.003	
79538	370	11/20/79	11/29/79	0.034 \pm 0.003	
79542	365	11/26/79	11/30/79	0.027 \pm 0.002	
79561	427	12/3/79	12/7/79	0.045 \pm 0.003	
79582	429	12/10/79	12/17/79	0.034 \pm 0.002	
79598	427	12/17/79	12/21/79	0.056 \pm 0.003	
79604	418	12/24/79	1/2/80	0.033 \pm 0.002	
79613	423	12/31/79	1/7/80	0.022 \pm 0.001	

Quarterly Composite 10/2/79-12/31/79 1/10/80 $^7\text{Be} = 0.070 \pm 0.007$
 $^{134}, ^{137}\text{Cs} = < 0.01$

1/Unless specified, iodine-131 concentrations were determined to be
 $< 0.07 \text{ pCi}/\text{m}^3$.

TABLE B-3

Diablo Canyon Power Plant 1979 Annual Report
Fish and Seafood Samples, Collected 1979 (pCi/kg wet)

Sample (Station No.)	Date Collected	Ratio Dry/Wet	⁵⁴ Mn	⁵⁹ Fe	⁵⁸ Co	⁶⁰ Co	⁶⁵ Zn	¹³⁴ Cs	¹³⁷ Cs	Others
79088-M (19)* Black Abalone Meat	2/27/79	0.301	<15.3	<78.3	<29.3	<14.6	<38.5	<15.3	<14.7	-
79088-V (19) Black Abalone Viscera	2/27/79	0.254	<12.3	<58.7	<20.8	<11.5	<29.2	<12.2	<11.5	-
79091 (19) Blue Rockfish	2/12/79	0.204	<28.2	<176	<49.6	<22.8	<72.4	<25.7	<25.1	-
79092 (19) Striped Perch	2/12/79	0.209	<8.15	<72.5	<17.7	<7.13	<22.2	<7.00	10.7+3.55	-
79094 (26 Commercial) Red Snapper	2/21/79	0.534	<26.8	<213	<51.7	<25.5	<67.8	<21.3	62.5+20.3	-
79095 (26 Commercial) Rockfish	2/21/79	0.524	<31.4	<235	<76.5	<30.0	<93.8	<28.2	72.3+11.0	-
79143 (22) Pismo Clams	1/27/79	0.200	<9.38	<90.8	<22.6	<7.84	<22.4	<8.50	<7.92	-
79412 (22) Pismo Clams	6/11-12/79	0.258	<28.1	<351	<80.5	<23.8	<70.7	<24.3	<24.3	-
79261 (19)* Black Abalone Meat	5/14/79	0.292	<26.3	<106	<34.7	<24.4	<61.6	<26.5	<25.6	-
79262 (19) Black Abalone Viscera	5/14/79	0.234	<31.1	<99.0	<46.8	<27.1	<65.1	<30.9	<33.5	-

*Sample analyzed at DER, then sent to State Sanitation and Radiation Laboratory.

TABLE B-3 - contd.

Sample (Station No.)	Date Collected	Ratio Dry/Wet	⁵⁴ Mn	⁵⁹ Fe	⁵⁸ Co	⁶⁰ Co	⁶⁵ Zn	¹³⁴ Cs	¹³⁷ Cs	Others
79263 (19) Striped Perch	5/18/79	0.201	<17.3	<73.6	<24.9	<17.9	<39.2	<15.9	<18.9	-
79264 (19) Red Abalone Meat	5/18/79	0.299	<39.5	<116	<40.7	<36.2	<77.4	<35.0	<33.8	-
79265 (19) Red Abalone Viscera	5/18/79	0.351	<36.9	<112	<53.4	<36.2	<79.7	<38.3	<36.2	-
79271 (26 Commercial) Red Snapper	5/17/79	0.221	<9.39	<54.8	<14.3	<8.38	<27.8	<7.69	<12.2	-
79272 (26 Commercial) Ling Cod	5/17/79	0.215	<9.76	<58.9	<18.6	<11.8	<25.8	<9.05	18.7+4.52	-
79273 (26 Commercial) Salmon	5/17/79	0.367	<8.40	<52.1	<14.3	<8.22	<23.0	<6.64	<8.88	-
79406 (19) Striped Perch	8/8/79	0.209	<21.5	<118	<40.8	<19.0	<52.3	<20.4	<21.1	-
79407 (19) Blue Rockfish	8/8/79	0.228	<17.3	<108	<31.5	<18.0	<47.2	<15.6	<17.5	-
79408-M (19)* Black Abalone Meat	8/9/79	0.285	<27.8	<63.0	<30.5	<29.1	<69.0	<28.1	<32.2	-
79408-V (19) Black Abalone Viscera	8/9/79	0.270	<24.3	<109	<42.7	<23.2	<57.8	<26.5	<26.7	-
79413 (22) Pismo Clams	8/9/79	0.288	<26.7	<147	<50.7	<23.5	<64.2	<29.1	<24.9	-

*Sample analyzed at DER, then sent to State Sanitation and Radiation Laboratory.

TABLE B-3 - contd.

<u>Sample (Station No.)</u>	<u>Date Collected</u>	<u>Ratio Dry/Wet</u>	<u>54Mn</u>	<u>59Fe</u>	<u>53Co</u>	<u>60Co</u>	<u>65Zn</u>	<u>134Cs</u>	<u>137Cs</u>	<u>Others</u>
79443 (26 Commercial) Red Snapper	9/15/79	0.226	<13.2	<48.1	<16.7	<16.2	<39.8	<13.9	<17.0	-
79444 (26 Commercial) Salmon	9/15/79	0.352	<9.72	<31.6	<13.8	<11.1	<27.5	<10.0	<11.3	-
79543 (19)* Black Abalone Meat	12/27/79	0.288	<7.17	<17.5	<8.15	<6.91	<18.4	<7.17	<7.43	-
79544 (19) Black Abalone Viscera	12/27/79	0.190	<43.7	<99.4	<45.2	<41.0	<98.4	<44.1	<46.7	-
79545 (19) Blue Rockfish	11/21/79	0.212	<47.5	<141	<61.9	<34.3	<95.0	<45.4	<43.7	-
79594 (26 Commercial) Ling Cod	11/27/79	0.225	<6.30	<28.1	<9.52	<6.71	<18.7	<6.19	18.0+3.60	-
79595 (26 Commercial) Red Snapper	11/27/79	0.229	<9.21	<40.5	<13.8	<10.1	<26.3	<8.91	20.2+5.50	-

*Sample analyzed at DER, then sent to State Sanitation and Radiation Laboratory.

TABLE B-4

Diablo Canyon Power Plant 1979 Annual Report
Milk Samples, Collected 1979 (pCi/l)

Sample (Station No.)	Date Collected	¹³¹ I	¹³⁴ Cs	¹³⁷ Cs	¹⁴⁰ Ba	¹⁴⁰ La	Others
79012 (25)	1/14/79	<0.20	<1.6	<1.7	<22	<9.0	-
79013 (30)	1/14/79	<0.20	<3.6	<4.1	<74	<29	-
79056 (25)*	2/12/79	<0.20	<1.9	1.8 \pm 1.23	<26	<12	-
79057 (30)*	2/12/79	<0.20	<1.8	<2.0	<27	<11	-
79125 (25)	3/18/79	<0.20	<6.4	<7.5	<18	<7.7	-
79126 (30)	3/18/79	<0.20	<3.7	<4.2	<31	<13	-
79170 (25)	4/22/79	<0.20	<6.2	<6.8	<18	<7.3	-
79171 (30)	4/22/79	<0.20	<6.4	<7.4	<18	<8.8	-
79212 (25)*	5/21/79	<0.20	<1.9	<2.3	<5.4	<2.4	-
79213 (30)*	5/21/79	<0.20	<4.2	<5.0	<13	<5.0	-
79280 (25)	6/17/79	<0.20	<1.9	2.3 \pm 1.60	<5.7	<2.1	-
79281 (30)	6/17/79	<0.20	<3.9	<4.3	<12	<4.4	-
79314 (25)	7/15/79	<0.20	<4.6	<5.6	<13	<5.9	-
79315 (30)	7/15/79	<0.20	<2.1	<2.3	<6.4	<2.4	-
79362 (25)*	8/19/79	<0.20	<2.8	<3.4	<9.9	<3.6	-
79363 (30)*	8/19/79	<0.20	<1.7	<1.8	<5.0	<2.0	-
79427 (25)	9/16/79	<0.20	<1.9	<2.1	<5.0	<2.4	-
79428 (30)	9/16/79	<0.20	<2.9	<3.0	<7.7	<3.4	-
79481 (25)	10/21/79	<0.20	<1.7	<2.0	<5.6	<3.9	-
79482 (30)	10/21/79	<0.20	<2.8	<3.2	<9.8	<6.6	-
79522 (25)*	11/15/79	<0.20	<2.1	<2.4	<6.1	<4.4	-
79523 (30)*	11/15/79	<0.20	<4.6	<4.6	<12	<8.7	-
79588 (25)	12/16/79	<0.20	<4.6	<4.6	<12	<8.7	-
79589 (30)	12/16/79	<0.20	<2.1	<2.4	<6.1	<4.4	-

*Duplicate sample sent to State Sanitation and Radiation Laboratory.

TABLE B-5

Diablo Canyon Power Plant 1979 Annual Report
Food Products, Collected 1979 (pCi/kg wet)

Sample (Station No.)	Date Collected	Ratio Dry/Wet	¹³¹ I	¹³⁴ Cs	¹³⁷ Cs	Others
79054 (23) ^{2/} Brussels Sprouts	2/12/79	0.187	<22	<5.1	<5.8	7Be=148 ⁺²²
79055 (25) Artichoke Greens	2/12/79	0.092	<24	<3.4	7.1 ^{+2.5}	¹⁴⁴ Ce=19 ⁺¹² 7Be=363 ⁺³⁰
79078 (16) Snow Peas	2/28/79	0.141	<7811 ^{1/}	<5.9	<6.5	-
79214 (23) ^{2/} Romaine Lettuce	5/21/79	0.080	<140 ^{1/}	<13	<13	-
79215 (25) Broccoli Greens	5/21/79	0.127	<147 ^{1/}	<9.2	<10	-
79274 (16) Sugar Peas	5/30/79	0.165	<481 ^{1/}	<7.8	<7.3	-
79364 (23) ^{2/} Celery Greens	8/19/79	0.136	<12	<5.0	<5.7	7Be=56 ⁺¹⁸
79365 (25) Corn Greens	8/19/79	0.206	<59	<20	<23	-
79441 (16) Snow Peas	9/17/79	0.148	<19	<2.4	<2.5	-
79528 (23) ^{2/} Cabbage Greens	11/16/79	0.102	<34	<7.8	<7.5	-
79529 (25) Brussels Sprouts	11/16/79	0.124	<18	<4.2	<4.5	7Be=84.4 ⁺²²
79530 (16) Snow Peas	11/15/79	0.161	<0.97	<6.4	<6.6	-

^{1/} These samples had an abnormally long delay time between collection and counting.

^{2/} These samples analyzed at DER then sent to State Sanitation and Radiation Laboratory.

TABLE B-6

Diablo Canyon Power Plant 1979 Annual Report
Sediment Samples, Collected 1979 (pCi/kg dry)

<u>Sample (Station No.)</u>	<u>Date Collected</u>	<u>¹³⁴Cs</u>	<u>¹³⁷Cs</u>	<u>Others</u>	<u>Comments</u>
79093 (19)	2/27/79	29 _± 4	<17	-	-
79199 (19)	5/15/79	<25	<25	-	-
79403 (19)	8/9/79	22 _± 15	22 _± 15	-	-
79525 (19)	11/13/79	21 _± 8	33 _± 3	-	-

TABLE B-7
Diablo Canyon Power Plant 1979 Annual Report
Dosimeter Measurements (microroentgens per hour)

Sta- tion	Month												Annual(1) Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	10.35	10.28	11.28	9.85	9.83	11.81	8.58	11.33	10.58	9.64	9.06	10.48	89.8
2	7.72	6.37	7.46	7.36	7.33	7.47	9.03	7.33	7.38	6.47	5.89	6.55	63.1
3	10.71	11.41	12.66	9.79	10.15	10.49	8.67	11.91	10.58	10.23	8.81	9.88	91.4
4	11.99	12.05	13.28	12.10	15.01	12.61	9.83	13.82	12.90	11.24	10.21	11.51	107.0
5	8.27	7.71	9.62	6.68	9.34	8.26	9.57	8.67	7.64	6.92	6.19	7.61	70.5
6	8.29	8.36	10.09	8.84	10.32	9.18	7.27	9.42	8.56	8.23	7.71	7.85	75.8
7	9.40	7.99	8.75	8.26	10.07	8.46	6.90	9.09	8.28	7.89	7.44	8.36	73.7
8	14.06	11.67	14.83	11.79	15.52	11.47	10.83	11.99	11.07	10.04	9.21	10.23	104.3
9	8.19	7.20	8.87	7.72	9.61	7.99	5.91	8.52	8.15	7.03	6.07	7.31	67.6
10	6.16	6.13	7.11	6.88	7.59	6.56	5.89	6.73	7.07	5.94	5.17	5.79	56.2
11	6.92	7.47	7.14	6.68	8.16	8.17	5.81	7.51	6.97	5.98	5.76	6.22	60.4
12	10.24	8.68	10.75	9.11	10.27	9.04	7.22	10.38	9.53	8.41	7.96	8.80	80.7
13	6.88	5.71	7.93	5.22	7.90	7.22	5.20	7.38	7.13	5.42	5.47	5.97	56.6
14	10.40	8.21	11.53	9.36	11.10	10.33	8.70	11.81	10.83	9.46	8.68	10.66	88.6
15	9.61	9.70	11.59	9.54	10.89	10.50	8.20	11.52	10.68	8.84	7.71	10.52	87.1
16	9.65	8.94	10.77	9.24	10.01	10.01	7.80	9.91	9.56	9.09	8.08	8.70	81.6
17	8.19	8.29	9.13	7.65	10.22	9.46	7.58	10.19	9.86	8.28	7.17	8.41	76.3
18	6.22	5.37	6.64	6.92	7.39	6.29	5.24	6.57	7.31	5.32	4.68	5.78	53.9
27	6.22	5.82	7.49	5.94	7.45	6.51	5.05	6.18	6.40	5.75	4.68	5.91	53.6
28			10.59(2)			7.27(3)			6.83(4)			7.17(5)	69.6
29			8.70(2)			9.03(3)			10.10(4)			9.21(5)	81.2

(1) Milliroentgens per year. (2) Quarterly data - January, February, March. (3) Quarterly data - April, May, June. (4) Quarterly data - July, August, September. (5) Quarterly data - October, November, December.

TABLE B-8
Diablo Canyon Power Plant 1979 Annual Report
Indicator Marine Samples, Collected 1979 (pCi/kg wet)

<u>Sample (Station No.)</u>	<u>Date Collected</u>	<u>Ratio Dry/Wet</u>	<u>⁵⁴Mn</u>	<u>⁵⁹Fe</u>	<u>⁵⁸Co</u>	<u>⁶⁰Co</u>	<u>⁶⁵Zn</u>	<u>¹³⁴Cs</u>	<u>¹³⁷Cs</u>	<u>Others</u>
79086 (19)* Bull Kelp Blade	2/27/79	0.166	<17.6	<130	<33.4	<20.0	<60.4	<14.2	<15.2	-
79086 (19) Bull Kelp Pneumatocyst	2/27/79	0.118	<14.4	<97.1	<23.2	<14.4	<47.8	<11.2	<11.9	-
79087 (19) Iridaea	2/27/79	0.190	<11.2	<79.0	<18.6	<9.54	<28.3	<8.28	<9.61	-
79089 (19) Gooseneck Barnacle Meat	2/27/79	0.251	<9.14	<24.2	<11.3	<8.13	<23.3	<9.16	<9.74	-
79089 (19) Gooseneck Barnacle Shell	2/27/79	0.534	<38.0	<48.0	<13.8	<7.16	<21.8	<8.92	<8.81	-
79090 (19) California Mussel Meat	2/27/79	0.170	<15.5	<99.6	<33.8	<13.5	<33.3	<15.0	<14.6	-
79260 (19) California Mussel Meat	5/14/79	0.138	<6.84	<25.9	<9.44	<6.82	<16.6	<6.32	<6.84	-
79266 (19) Iridaea	5/14/79	0.144	<2.58	<13.0	<3.86	<2.61	<7.03	<2.04	<2.32	-
79267 (19) Gooseneck Barnacle Meat	5/14/79	0.247	<7.01	<25.7	<10.0	<6.22	<15.8	<6.64	<6.92	-
79268 (19) Gooseneck Barnacle Shell	5/14/79	0.488	<11.9	<36.5	<16.3	<10.5	<25.0	<11.3	<10.7	-
79269 (19)* Bull Kelp Blade	5/10/79	0.036	<1.80	<9.30	<2.69	<1.75	<5.15	<1.57	<1.67	-

*Sample analyzed at DER, then sent to State Sanitation and Radiation Laboratory.

TABLE B-8 - contd.

Sample (Station No.)	Date Collected	Ratio Dry/Wet	<u>54Mn</u>	<u>59Fe</u>	<u>58Co</u>	<u>60Co</u>	<u>65Zn</u>	<u>134Cs</u>	<u>137Cs</u>	Others
79270 (19) Bull Kelp Pneumatocyst	5/10/79	0.077	<17.9	<9.70	<28.0	<16.2	<50.5	<16.5	<16.6	-
79404 (19)* Bull Kelp Blade	8/9/79	0.051	<1.93	<7.96	<2.74	<1.96	<4.93	<1.84	<1.82	-
79404 (19) Bull Kelp Pneumatocyst	8/9/79	0.093	<12.2	<53.2	<16.6	<12.0	<32.7	<10.7	<11.1	-
79405 (19) Iridaea	8/9/79	0.178	<9.47	<34.9	<13.0	<7.48	<21.7	<8.51	<8.46	-
79409 (19) Gooseneck Barnacle Meat	8/9/79	0.259	<8.88	<46.4	<15.3	<8.86	<23.8	<8.99	<8.44	-
79409 (19) Gooseneck Barnacle Shell	8/9/79	0.505	<17.3	<90.4	<29.9	<17.3	<46.5	<18.7	<16.5	-
79442 (19) California Mussel Meat	8/9/79	0.161	<35.3	<142	<53.6	<27.5	<73.9	<31.9	<32.8	-
79546 (19)* Bull Kelp Pneumatocyst	11/21/79	0.095	<13.3	<56.7	<17.3	<15.3	<38.5	<10.6	<12.7	-
79547 (19) Bull Kelp Blade	11/21/79	0.058	<10.3	<36.4	<13.8	<12.2	<23.4	<9.28	<9.92	-
79553 (19) Gooseneck Barnacle Meat	11/29/79	0.224	<3.47	<8.87	<4.05	<3.65	<8.56	<3.45	<3.83	-
79554 (19) Gooseneck Barnacle Shell	11/29/79	0.503	<7.09	<15.4	<6.99	<6.34	<18.2	<6.69	<7.19	-
79555 (19) Iridaea	11/29/79	0.173	<4.05	<22.1	<6.40	<4.38	<11.8	<3.72	<3.84	-
79556 (19) California Mussel Meat	11/29/79	0.169	<35.0	<149	<53.1	<31.9	<79.1	<39.4	<34.5	-

*Sample analyzed at DER, then sent to State Sanitation and Radiation Laboratory.