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NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

April 29, 1980

Mr. Boyce H. Grier
Director
United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA. 19406

RE: Nine Mile Point Nuclear Station Unit #1
Facility Operating License DPR-63
Docket No. 50-220

Dear Mr. Grier:

In accordance with the Environmental Technical Specifications for Nine Mile Point Nuclear Station Unit #1, we are enclosing the Annual Environmental Operating Report for the period January 1, 1979 through December 31, 1979.

The non-radiological Aquatic Ecology Studies Data Report for 1979 was submitted under separate cover.

Very truly yours,

Original Signed by T.E. Lempges

Thomas E. Lempges
Vice President -
Nuclear Generation

mtm

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NIAGARA MOHAWK POWER CORPORATION

ANNUAL ENVIRONMENTAL OPERATING REPORT

PART B - RADIOLOGICAL REPORT

January 1, 1979 - December 31, 1979

NINE MILE POINT NUCLEAR STATION UNIT #1

Facility Operating License DPR-63

Docket Number 50-220

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NINE MILE POINT UNIT I

ANNUAL ENVIRONMENTAL OPERATING REPORT

I. INTRODUCTION

This report is submitted in accordance with Section B to DPR-63, Docket 50-220.

II. DESCRIPTION

The required sample collection and analysis schedule for NMP-1 is listed in Tables 1 and 2.

The sample collections for the radiological program are performed by two groups. Texas Instruments Incorporated, Ecological Services Branch (TIES) performs much of the environmental sampling. TIES is presently performing the Nine Mile Point Aquatic Ecology Study at the site. The staff required by TIES to perform this study is used to perform the terrestrial sampling required for the site radiological monitoring program. In-plant and remaining terrestrial sampling is performed jointly by the JAFNPP and NMPNS staffs.

1. SAMPLE COLLECTION METHODOLOGY

A. Lake Water

The two indicator stations are the respective inlet canals at JAFNPP and NMPNS. These samples are composited using continuously running pumps which discharge into large collection tanks. These tanks are emptied weekly and an aliquot is saved for the monthly composite.

The control station sample is collected from the City of Oswego water intake. Grab samples are drawn from the intake prior to treatment and are composited in a large sample bottle.

Quarterly composite samples are made up from aliquots of monthly samples.

B. Air Particulate/Iodine

The air particulate glass fiber filters are approximately two inches in diameter and are placed in sample holders in the intake line of a vacuum sampler. Directly down stream from the particulate filter is a 2 x 1 charcoal cartridge used to absorb airborne radioiodine. The samplers run continuously and the charcoal cartridges and particulate filters are changed on a weekly basis.

The particulate filters are composited on a monthly basis by location (off-site, on-site) after being counted for gross beta activity.

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

B. Air Particulate/Iodine (Continued)

The air sampling stations are located in two rings surrounding the site. The on-site locations ring the terrestrial area around the plants inside the site boundary.

The on-site sampling network is composed of 9 stations. The off-site air monitoring locations range 6 to 17 miles from the site and is composed of 6 stations. Air monitoring locations are shown on Figures 1 and 2.

C. Milk

Milk samples are collected in polyethylene bottles from the bulk storage tank at each sampled farm. Before the sample is drawn the tank contents are agitated from 3 to 5 minutes to assure a homogenous mixture of milk and butterfat. Three gallons are collected during the first week of each month from each of the five farms. The samples are frozen and shipped to the analytical contractor within 24 hours of collection in insulated shipping containers. The milk sampling locations are found on Figure 4. (See Table 15 for identification of locations sampled.)

D. Meat, Poultry and Eggs

Semi-annually one kilogram of meat is collected from locations within a 10 mile radius of the site. Weekly phone calls are made to the local butcher to determine availability of slaughtered live stock from within the sampling area. Whenever possible meat samples are collected from locations previously used.

Semi-annually one kilogram of poultry and one kilogram of eggs are collected from each of three locations within a 10 mile radius of the site. Attempts are made to collect poultry and eggs at the same time as the meat samples. The poultry and eggs are frozen and shipped in insulated containers. Whenever possible samples are obtained from previously sampled farms (see Figure 3).

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

E. Human Food Crops

Human food crops are collected during the late summer harvest season at locations previously sampled, if available. One kilogram each, of two types of fruits and/or vegetables from each of the three locations within a ten mile radius of the site are collected. The types of fruits and vegetables sampled depends on what is locally available at the time of collection. Attempts are made to collect at least one broadleaf type vegetable from each location. The fruits and vegetables are chilled prior to shipping and shipped fresh in insulated containers (see Figure 3).

F. Soil Samples

Soil samples are required once every three years. No regular samples were collected during 1978. Soil samples will be collected again during the 1980 sample season. Special soil samples were collected in November 1979. These samples are discussed in Section III.B.6.

G. Fish Samples

Available fish species are removed from the Nine Mile Point Aquatic Ecology Study monitoring collections during the spring and fall collection periods. Samples are collected from a combination of the four on-site sample transects and one off-site sample transect (see Figure 1). Available species are selected under the following guidelines:

1. 0.5 to 1 kilogram of edible portion only of a maximum of 5 species per location.

2. Samples composed of more than one kilogram of single species from the same location are divided into samples of 1 kilogram each prior to shipping. A maximum of three samples per species per location are used. Weight of samples are the edible portions only.

Selected fish samples are frozen immediately after collection and segregated by species and location. Samples are shipped frozen within two weeks in insulated containers.

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

H. Shoreline Sediments

One kilogram of shoreline sediment sample is collected at one on-site location and one off-site location. The samples are placed in plastic bags, sealed and shipped for analysis in insulated containers.

I. Cladaphora

The species glomerata is the dominate species of cladaphora in collections in the NMP vicinity. Cladaphora is a long filamentous alga attached by a holdfast to rocks and other submerged substrates. Colonization and propagation of cladaphora extends out to a depth of about 20 feet, and the long, growing strands of cladaphora in water 5 feet deep or less are constantly being broken off by wave activity. Maximum growth usually occurs in water about 10-15 feet deep, but this will vary, depending upon turbidity (Wezernak et al 1974). Growth of cladaphora begins in late May, reaches a peak in late June or early July, and declines during the warmer summer period of late July and early August (Storr and Sweeney 1971). As temperatures drop, a secondary peak may occur in late August. Growth ceases in September due to decreasing light and temperature.

Cladaphora samples are collected in the spring and fall season from two on-site locations and one off-site location. Cladaphora is collected from natural substrates. The cladaphora is scraped from the substrates into sample containers, labeled, frozen and shipped in insulated containers for off-site analysis.

J. TLD (direct radiation)

Thermoluminescent dosimeters (TLD's) are used to measure direct radiation in the JAF/NMP-1 environment. The TLD stations are placed around the site using a three zone division. The first group of TLD's are located within the site boundary and are called "on-site" TLD's. The second set of TLD's are called "site boundary" stations and are located at approximately the site perimeter. The third division of TLD stations are the "off-site" stations, located at the off-site air monitoring stations.

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

J. TLD (direct radiation) (Continued)

Each TLD set is made up of 2 $CaSO_4$ dosimeters (2 chips per dosimeter), sealed in a polethylene package to insure dosimeter integrity. The TLD packages are further protected by placement in plexiglass "birdhouses" or by tape sealing to supporting surfaces. The dosimeters are collected, replaced and evaluated on a quarterly basis.

2. ANALYSIS PERFORMED

The environmental radiological surveillance sample analysis is performed by Radiation Management Corporation (RMC) except for the particulate samples and iodine cartridges which are counted on site. These two sample media are counted on site to facilitate the compositing of the air particulate filters after gross beta analysis and the timely analysis of charcoal cartridge for Iodine-131.

3. CHANGES IN THE 1979 SAMPLE PROGRAM

A. An additional milk sample location was added to the 1979 sampling program. This farm was previously sampled during the 1977 program, but chose not to participate in the 1978 sampling program. This additional sample station is designated as location number 8 (see Figure 4). This same sample station was designated as station number 4 in the 1977 Environmental Report. Only I-131 analysis was performed on this sample location.

B. 1979 sample results reported as "less than" (<) represent the lower limits of detection (LLD). LLD is defined by the "USNRC Branch Technical Position (revision 1, November 1979)" as the smallest concentration of radioactive material in the sample that will yield a net count (above system background) that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real signal". Sample data reported in the 1979 report as "less than" results were calculated using 4.66 times the standard deviation of the background count rate or of the counting rate of a blank sample where appropriate. Sample data reported as "less than" results prior to the 1979 sample program were calculated based on 3.0 times the standard deviation of the background count rate.

II. DESCRIPTION (Continued)

3. CHANGES IN THE 1979 SAMPLE PROGRAM (Continued)

C. Lower Limits of Detections for airborne radioiodine (I-131) analysis reported for 1979 are decay corrected to end of sample period. Previous airborne I-131 analysis results were decay corrected to the mid-point of sample collection.

D. Amendment No. 29 to License DPR-63, date of issuance 3/26/79, changed the following portions of the environmental monitoring program:

1) Aquatic

a) Mollusks, gammarus, and periphyton were deleted. Periphyton was replaced with cladaphora.

b) Bottom sediments were changed to shoreline sediments. Two on-site locations were changed to one.

2) Terrestrial

a) Monthly milk composites are no longer required. All analyses are performed on a single monthly collection.

b) Particulate filters are divided into two on-site and two off-site composites instead of one and one respectively.

III. EVALUATION OF ENVIRONMENTAL DATA

A. Lake Program

Tables 3 through 7 list the results of radiological analysis of aquatic media.

1) Cladaphora - Table 3

Cladaphora samples were collected twice during the 1979 sampling season. Collections were made on 6/19 and 8/16.

Analysis performed on the first collections indicated detectable concentrations of Mn-54, Co-58, Co-60, Cs-134, Cs-137, Ce-144. Concentrations of K-40, Ra-226, Be-7, Th-232 were also detected. The first group of nuclides is of interest in that these are normally associated with nuclear plant operations, while the second group is considered to be natural occurring. Co-137, Mn-54, Co-60 concentrations from the 03 transect were detected in quantities that may be of possible significance. These nuclides were in excess of 10 times the control station value (00 transect). Reference LER 79-021.

Analytical results on the second set of samples indicated only Cs-137 as being of possible significance. The concentrations of this nuclide on the 02 transects was 5 times the control station value; no LER was required.

2) Shoreline Sediment - Table 4

Shoreline sediments were collected on 7/3/79 and 12/3/79 at one off-site (00) and one on-site (02) location. Analytical results indicated concentrations of Cs-137, Ra-226, Th-232. The Cs-137 levels were most probably the result of fallout in that the on-site and off-site concentrations were of the same order.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

A. Lake Program (Continued)

3) Fish - Table 5

A total of 23 samples were collected during 1979. Collections were made in the spring and fall. White perch, yellow perch, and white sucker were the most abundant species with rainbow smelt present in only 2 collections.

The predominant nuclide detected was again Cs-137. Only one on-site sample (yellow perch collected 5/79 on the 02 transect) showed concentrations of possible significance. Cs-134 and Cs-137 levels were found to be greater than 2 times the control value (white perch).

4) Lake Water - Monthly and Quarterly Composites - Tables 6, 6A, 6B and 7

Lake water samples were analyzed for gross beta concentrations (6), gamma emitters (6A), solids and pH (6B), and H-3, Sr-89, and Sr-90 (7).

Analytical results for the lake water samples indicated no evidence of plant related environmental impact.

Gross beta analyses showed a few instances where indicator locations were greater than 2 times control values (OSWP). These were the NMP inlet for February and August, the NMP discharge for April, August, and September; and the JAF inlet for August.

Ge(Li) analyses showed indicator location greater than 2 times control values for Cs-137 in the March NMP inlet and discharge composites and the April, June, and December discharge samples.

H-3 concentrations were greater than 2 times the control value in the 2nd quarter NMP and JAF discharge composites.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program

The results of sample analyses for the 1979 reporting period are included in Tables 8 through 18.

1) Air Particulates - Tables 8 and 9

Tables 8 and 9 give the results of the air particulate gross beta concentrations for the 6 off-site and 9 on-site stations respectively.

The quarterly averages for gross beta concentrations (pCi/m^3) are as follows:

	Off-Sites	On-Sites
1st Qtr.	0.042	0.031
2nd Qtr.	0.106	0.072
3rd Qtr.	0.101	0.080
4th Qtr.	0.045	0.037

No significant levels of gross beta activities were detected during the 1979 collections. Normal flucuations were observed as is evident in the above listed quarterly averages. The concentration during the late spring, summer, and early fall months have historically been higher than the winter months.

2) Monthly Particulate Composites - Tables 10 and 10A

For the first 3 months of 1979, particulate filters were composited into one off-site and one on-site composite. After a ETS amendment effective April 1, 1979 (NMP-1 only), filters were broken down into two on-site and two off-site composites.

In the January and February composites, concentrations of Be-7, Co-60, Cs-137, Ce-141, Ce-144, Mn-54, Ru-103, Ru-106 were detected. In the remaining composites only Be-7, Cs-137, and Ce-144 were detected. Co-60 was also detected in March on-site and the February off-site, however, it should be noted that the associated errors were on the order of 50 to 60%.

None of the detected concentrations was of any significance. The concentrations of Cs-137, Ce-141, and Ce-144 may be attributed to sources other than the nuclear plant operation.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

3) Airborne Radioiodine (I-131) - Tables 11 and 12

The results of the I-131 (charcoal cartridge) for the six off-site and nine on-site stations are presented in Tables 11 and 12 respectively.

The quarterly averages for I-131 concentrations (pCi/m^3) are as follows:

	Off-Site	On-Site
1st Qtr.	<0.023	<0.020
2nd Qtr.	<0.027	<0.019
3rd Qtr.	<0.024	<0.018
4th Qtr.	<0.022	<0.018

During the 1979 program, no airborne radioiodine was detected at any of the 15 environmental stations.

4) TLD's (Environmental Dosimetry) - Table 13

The reported dose rates are the average of 4 independent readings. Each TLD station or location is composed of 2 individual TLD's, with each TLD containing 2 distinct dosimeters.

The TLD's are broken down into 3 groups for reporting purposes. The groups are on-site, off-site and site boundary (see TLD location maps, Figures 1 and 2). The net doses at the site boundary (site boundary average minus off-site average) were as follows:

QUARTER	SITE BOUNDARY DOSE (mrem)
1	0.0
2	0.0
3	0.6
4	0.0

The total site boundary dose for 1979 was less than 1 mrem. Dosimeters 31, 32, 39 and 40 are locations within the NMP-1 restricted area near the Radwaste Building and are influenced by waste trucks being loaded in the building or parked nearby. Dosimeters 27 through 30 are located within the FitzPatrick plant restricted area and are affected by waste trucks being loaded in or parked near the FitzPatrick Radwaste Building.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

4) Dosimeter #35, which is located in the northeastern section of the Nine Mile Unit #2 construction site, showed an increase from 16 mrem for the first quarter 1979 to 179 mrem for the second quarter 1979. An investigation as to the possible causes for the increase in exposure revealed that radiographing of welds in the general vicinity of the dosimeter location occurred during this period. The D-1 on-site environmental radiation monitor also recorded the presence of an increased dose rate during the month of June 1979 due to the radiography nearby. The radiography that was recorded by dosimeter #35 occurred from May 25 to June 27. The radiography activity was done by 3 crews on an around the clock basis using a 100 Ci Iridium source. Approximately 6722 radiographs were taken, varying from a few seconds to 5 minutes in exposure time. No increase in radiation exposure to the general public resulted from the radiographic testing.

5) Radiation Monitors - Table 14

Environmental radiation monitors are located in 10 of the 15 air monitoring environmental stations. Each of the on-site environmental monitoring stations contain a radiation monitor and in addition, the C off-site monitoring station contains a similar monitor. The radiation monitors consists of a GM detector with an associated power supply, chart recorder and trip unit. The monitor has an operating and recording range from 0.01 to 100 mrem/hr. Each radiation monitor has a small radioactive source mounted inside the detector casing to produce an on-scale reading. The design intent of the monitors is to detect possible dose rates resulting from plume releases from the plant. The monitors are not considered to be capable of high sensitivity environmental monitoring and do not detect minute fluctuation in levels of background radiation. Because of the relatively poor sensitivity of the monitors (environmentally speaking) no comparisons are made between the radiation monitor readings and the readings from environmental TLDs.

6) Milk - Tables 15 and 16

Milk samples were collected monthly from each of 5 farms and analyzed for I-131, gamma emitters, and Sr-90. I-131 results are found on Table 15. Gamma analysis and Sr-90 results are found on Table 16.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

6) Milk samples were taken beginning with the month of May and continued through the month of December. Milk sampling was not conducted from January through April because local dairy herds are not consistently on open pasture.

No concentrations of I-131 were detected in the 1979 milk samples. All I-131 analytical results were reported as lower limits of detection. The comparison of 1979 milk I-131 data showed a decrease in I-131 levels in milk from previous years during which samples were taken. It should be noted that previous data is biased by the presence of I-131 concentrations resulting from the detonation of nuclear devices in the atmosphere, while such results are not part of 1977, 1978 and 1979 data.

Potassium - 40 (K-40) was the most abundant nuclide detected in the milk samples collected in 1979. K-40 was detected in every sample and ranged in concentration from 960 to 1600 pCi/1. K-40 is a naturally occurring isotope and is found in many of the environmental media sampled.

Cesium - 137 (Cs-137) was a second nuclide found in the majority of milk sample collected. The indicator stations results showed Cs-137 concentrations ranged in activity from 3.2 to 53.0 pCi/1.

The five used as sampling locations are located within a ten mile radius of the site and are termed indicator stations. The control location (#13) is located 18 miles SSW of the site. It is considered to be outside of the influence of site releases. One of the milk sample stations (#25) located within the 10 mile radius of the site showed an elevated concentration of Cs-137 in the September sample. This level of 53.0 pCi/1, was in excess of 10 times the control value (Reference LER #79-024). In an effort to determine the source of the elevated Cs-137 levels in the milk pathway, plant and site parameters during the sample time period were studied. In addition, extra milk samples were collected past the normal grazing season and will continue to be taken until the end of the 1980 grazing season. Each of the 5 farms routinely sampled for milk were also sampled for the related media of soil, pasture grass and animal feed. Stored feed samples were also collected at each of the farms in the form of grain, hay, corn silage and haylage. Feed sample collections were made on 1/7/80, 2/12/80 and 3/3/80. At this

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

6) time no definite conclusions have been made as to the source of the identified Cs-137 in the milk samples. Investigations into the site parameters have been conducted and do not indicate that the plant is the total source of the Cs-137.

The results of completed samples are included in this report in Tables 19 through 23. Analyses of these samples show some unexpected results. The soil sample collected at the Control Station contained approximately twice the concentration of Cs-137 as did the soil from the indicator station with the highest concentration of Cs-137 in the milk (Control = 1.3 pCi/g, Indicator = 0.72 pCi/g). Pasture grass samples from the same two sample locations showed approximately equal concentrations of Cs-137. The control station (#13) grass sample contained 0.11 pCi/g and the indicator station (#25) contained a concentration of 0.14 pCi/g. Table 23 contains the results of analyses performed on the 1/7, 2/12, and 3/3/80 samples. Cs-137 was found in most samples collected at indicator location #25. Cs-137 was also detected intermittently at other indicator locations. None of the concentrations appear significant when compared with the control location. The result of the additional milk samples are presented in Table 21 and 22. The Cs-137 levels in milk from location #25 are still higher than the control location and the other indicator locations but levels are in line with past observations.

In order to obtain an independent analysis of the available data, a consultant has been contracted. The consultant will perform an evaluation of the Cesium concentrations in the environmental milk samples and the environmental signficance of these Cesium concentrations. The scope of work for the evaluation is comprised of five tasks. Task I will be a data review which addresses results from the site environmental program, plant operating and release data, radiological monitoring data from other sources and site meterological data. Task II covers the statistical evaluation of assembled data. Task III is the assessment of facility contribution to milk Cesium levels. Task IV is the evaluation of the analysis contractor performance and Task V will be the writing of a final report.

7) Milch Animal Census - Table 17

The number of milch animal locations within a ten mile radius of the plant is presented in Table 17. Self-addressed post cards are sent to each farm within a ten mile radius. After 4 weeks if no response is received, telephone contact is made.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

8) Human Food Crops - Table 18

The results of analysis performed on meat, poultry, eggs and food crops are shown in Table 18. Human food crop analysis for I-131 showed no detectable concentrations with LLD values ranging from <0.024 to <0.030 pCi/g (wet). All analysis for I-131 were performed within one half-life. Slight traces of Cs-137 were found in 7 of the meat samples collected. Cs-137 was also detected in one produce sample. The detected Cs-137 levels are attributed to atmospheric fallout and have been detected in similar concentrations in previous years.

C. Exceptions to the Program

1) Meat samples were collected at only one location during the spring sampling period. Attempts were made to collect the required samples from 4/23/79 to 6/6/79. Efforts to identify possible sample locations were made by weekly phone calls to the local meat market and individual farmers.

The first meat sample was obtained on 5/24/79 and a second meat sample was obtained on 7/3/79. The second sample was a pork sample being butchered because of poor health and was obtained outside the required sampling time frame (spring sample period of 4/23/79 to 6/6/79). A third meat sample was collected on 8/2/79 which was also outside the spring sample period.

The difficulty in obtaining the required number of samples may be attributed to several factors. First the number of animals raised for meat and located within the ten mile radius of the plant is not extensive. Secondly, butchering of animals is not always performed at the local meat market. Third, and most significant is the fact that the vast majority of meat is butchered in the fall so animals can graze in pasture for the summer to economically increase the meat yield.

The collection of spring meat samples has historically been a difficult sample media to obtain due to seasonal unavailability.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

C. Exceptions to the Program (Continued)

2) On 11/15/79 at 0830 electrical power was lost to seven of the nine on-site environmental stations (D2, E, F, H, I, J, K). On-site power was restored at 1145. This resulted in a total power loss of 3 hours and 15 minutes. The power loss was due to a planned power line interruption to facilitate the transport of the 9 Mile Point Unit No. 2 reactor vessel to the construction site. The interruption of power to the environmental station was required so the power lines crossing the delivery path of the reactor vessel could be temporarily removed allowing safe passage of the moving equipment.

A review of station and site releases during this time period showed no increase or unusual variation from normal operating conditions. As immediate corrective action, each effected monitor was inspected to ensure that power had been successfully restored and the cabinet equipment was functioning as intended. The environmental significance of this event is considered to be minor, and as having no effect on the quality of the site environmental program.

3) The required milk I-131 analysis sensitivity of 0.5 pCi/l was exceeded on five analyses performed during the 1979 program. Analyses results which exceeded the required sensitivity ranged from 0.532 to 0.69 pCi/l. The lower sensitivities were not routine and represent only twelve percent of the analyses performed. The decrease in sensitivity was the result of two factors, the first being the use of a 4.66 sigma confidence level in calculating the LLD and secondly, the result of periodic low chemical yield (<70%) in the operation process.

Corrective action has been identified and initiated by the analysis contractor.

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Water		pCi/l				
Monthly Composite	NMP Inlet	Mn-54	<2.1	<1.5	<1.6	<1.5
		Fe-59	<5.0	<5.1	<5.3	<5.9
		Co-58	<2.5	<2.0	<2.8	<2.1
		Co-60	<3.6	<3.1	<3.1	<3.1
		Zn-65	<4.4	<3.9	<4.0	<5.0
		Cs-134	<2.1	<2.1	<1.6	<2.1
		Cs-137	<3.1	<2.1	<2.1	<1.6
		Ba-La-140	<8.9	<21.3	<26.0	<16.6
		Gross Beta	5.2	3.5	2.6	3.0
	NMP Discharge	Mn-54	<1.6	<1.5	<1.7	<1.7
		Fe-59	<6.2	<6.9	<7.3	<6.4
		Co-58	<1.8	<2.9	<2.1	<2.1
		Co-60	<3.7	<3.7	<3.6	<3.1
		Zn-65	<5.1	<4.0	<5.7	<5.0
		Cs-134	<2.2	<2.1	<2.7	<2.1
		Cs-137	<3.2	<4.4	<3.2	<2.9
		Ba-La-140	<23.4	<21.6	<24.5	<15.0
		Gross Beta	5.5	7.5	5.1	4.6

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Water		pCi/l				
Monthly Composite	JAF Inlet	Mn-54	<1.5	<1.5	<1.7	<1.7
		Fe-59	<6.9	<6.6	<7.8	<5.6
		Co-58	<2.1	<2.9	<2.2	<1.9
		Co-60	<3.1	<3.7	<3.1	<4.2
		Zn-65	<4.5	<4.6	<5.1	<5.0
		Cs-134	<2.1	<1.6	<1.6	<1.6
		Cs-137	<1.6	<1.6	<1.6	<1.6
		Ba-La-140	<20.4	<28.0	<27.5	<15.0
		Gross Beta	3.3	3.0	2.8	2.5
	JAF Discharge	Mn-54	<2.1	<2.3	<1.7	<2.1
		Fe-59	<5.8	<7.4	<9.1	<4.8
		Co-58	<2.1	<2.2	<2.2	<1.9
		Co-60	<3.7	<3.2	<3.1	<3.1
		Zn-65	<3.4	<4.1	<5.2	<4.2
		Cs-134	<1.6	<2.1	<2.2	<1.6
		Cs-137	<1.6	<2.6	<1.6	<2.1
		Ba-La-140	<20.4	<25.6	<32.9	<15.3
		Gross Beta	3.2	3.8	<2.3	3.1

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Water		pCi/l				
Monthly Composite	Raw City Water	Mn-54	<2.0	<2.2	<2.2	<1.7
		Fe-59	<4.3	<6.3	<5.6	<5.5
		Co-58	<3.8	<2.1	<2.0	<2.0
		Co-60	<3.1	<2.7	<3.7	<3.6
		Zn-65	<3.8	<4.6	<4.6	<3.9
		Cs-134	<2.0	<1.6	<1.6	<1.6
		Cs-137	<1.9	<1.6	<2.1	<2.0
		Ba-La-140	<10.6	<28.7	<34.6	<14.7
		Gross Beta	2.0	3.5	<2.2	2.5

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Airborne		pCi/m^3				
Particulate Filters	On-Sites	Gross Beta				
	D_1		0.036	0.079	0.089	0.040
	D_2		0.035	0.072	0.074	0.043
	E		0.039	0.081	0.096	0.049
	F		0.041	0.082	0.079	0.043
	G		0.040	0.083	0.103	0.044
	H		0.027	0.060	0.065	0.032
	I		0.025	0.072	0.093	0.035
	J		0.016	0.050	0.056	0.033
	K		0.019	0.070	0.067	0.017
	Off-Sites					
	C		0.076	0.096	0.095	0.045
	D_1		0.037	0.079	0.090	0.045
	D_2		0.036	0.094	0.105	0.044
	E		0.037	0.099	0.097	0.047
	F		0.035	0.114	0.114	0.046
	G		0.034	0.155	0.104	0.044

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Airborne						
Charcoal Cartridge	On-Sites	I-131 pCi/m^3				
	D_1		<0.030	<0.027	<0.028	<0.031
	D_2		<0.031	<0.033	<0.028	<0.021
	E		<0.021	<0.021	<0.022	<0.026
	F		<0.025	<0.025	<0.021	<0.020
	G		<0.022	<0.022	<0.021	<0.018
	H		<0.019	<0.015	<0.015	<0.014
	I		<0.012	<0.010	<0.010	<0.010
	J		<0.010	<0.011	<0.011	<0.011
	K		<0.012	<0.010	<0.009	<0.008
	Off-Sites					
	C		<0.022	<0.022	<0.022	<0.023
	D		<0.021	<0.021	<0.022	<0.026
	D_2^1		<0.020	<0.022	<0.022	<0.020
	E		<0.020	<0.021	<0.021	<0.020
	F		<0.027	<0.027	<0.028	<0.021
	G		<0.027	<0.050	<0.027	<0.024
TLDs	Off-Sites	Direct Radiation mrem/qtr	10	10	14	14
	Site Boundary		10	9	15	14
	On-Sites		44	53	43	54

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Map #*	Nuclide pCi/l	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Ingestion							
Milk	1	4	I-131	NS	<0.3	<0.5	<0.4
			K-40	NS	1045.0	1100.0	1500.0
			Cs-137	NS	<4.0	<5.6	<5.2
			Sr-90	NS	4.4	4.3	<6.1
	2	13	I-131	NS	<0.4	<0.4	<0.4
			K-40	NS	1045.0	1197.0	1567.0
			Cs-137	NS	<3.1	<3.6	<4.7
			Sr-90	NS	4.6	5.6	<4.0
	3	14	I-131	NS	<0.4	<0.5	<0.3
			K-40	NS	1045.0	1233.0	1500.0
			Cs-137	NS	<4.0	<4.5	<3.7
			Sr-90	NS	3.2	3.4	<2.7
	4	16	I-131	NS	<0.2	<0.5	<0.4
			K-40	NS	1040.0	1153.0	1500.0
			Cs-137	NS	<5.4	5.9	<5.2
			Sr-90	NS	5.4	5.2	<12.2
	5	25	I-131	NS	<0.3	<0.5	<0.5
			K-40	NS	1045.0	1433.0	1500.0
			Cs-137	NS	6.1	24.8	14.5
			Sr-90	NS	6.3	6.0	<8.9
	6	8	I-131	NS	<0.3	<0.4	<0.5

NS = Not Sampled (not in grazing season)

*Figure 5

TABLE 1

SAMPLE COLLECTION AND ANALYSIS

SITE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A. LAKE PROGRAM

	MEDIA	ANALYSIS	FREQUENCY	LOCATIONS (2)	
1.	Fish	GSA, Sr-89 & Sr-90	2/yr	2 Onsite	1 Offsite
2.	Cladophora	GSA	In Season	2 Onsite	1 Offsite
3.	Lake Water	GSA H-3, Sr-89, Sr-90	M Comp. Qtr. Comp.	3(3)	
4.	Sediment	GSA	Semi-Annual	Dam Shoreline	1 Offsite

NOTES:

(1) Onsite samples collected in the vicinity of discharges, offsite samples collected at a distance of at least five miles from site.

(2) The three lake water samples to include Nine Mile Point Uni 1 intake water, James A. FitzPatrick intake water, and Oswego city raw water.

TABLE 2

SAMPLE COLLECTION AND ANALYSIS

SITE RADIOLOGICL ENVIRONMENTAL MONITORING PROGRAM

B. LAND PROGRAM

	MEDIA	ANALYSIS	FREQUENCY	NO. OF LOCATIONS	LOCATIONS
1.	Air Particulates	GB GSA	W M Comp(4)	At least 10	7 Onsite 6 Offsite
2.	Soil	GSA, Sr-90	Every 3 years	13	7 Onsite 6 Offsite
3.	TLD	Gamma Dose	Qtr.	20	14 Onsite 6 Offsite
4.	Radiation Monitors	Gamma Dose	C	At least 7	7 Onsite 1 Offsite
5.	Airborne - I-131	GSA	W	At least 10	7 Onsite 6 Offsite
6.	Milk	I GSA, Sr-90	M(5) M	4(5)	(6)
7.	Human Food Crops	GSA, I-131	A	3	(6)
8.	Meat, Poultry,	GSA Edible Portions	SA	3	(6)

NOTES: (Cont.)

(4) Onsite samples counted as two composites: Offsite samples counted as two composites; any high gross beta count samples counted separately (not included in composite).
(5) Frequency applied only during grazing season.
(6) Samples to be collected from farms within a 10-mile radius having the highest potential concentrations of radionuclides.

FIGURE 1

OFF-SITE ENVIRONMENTAL STATION

AND

TLD LOCATIONS *

*TLD at each station

Revised to January 1, 1974

SCALE OF MILES

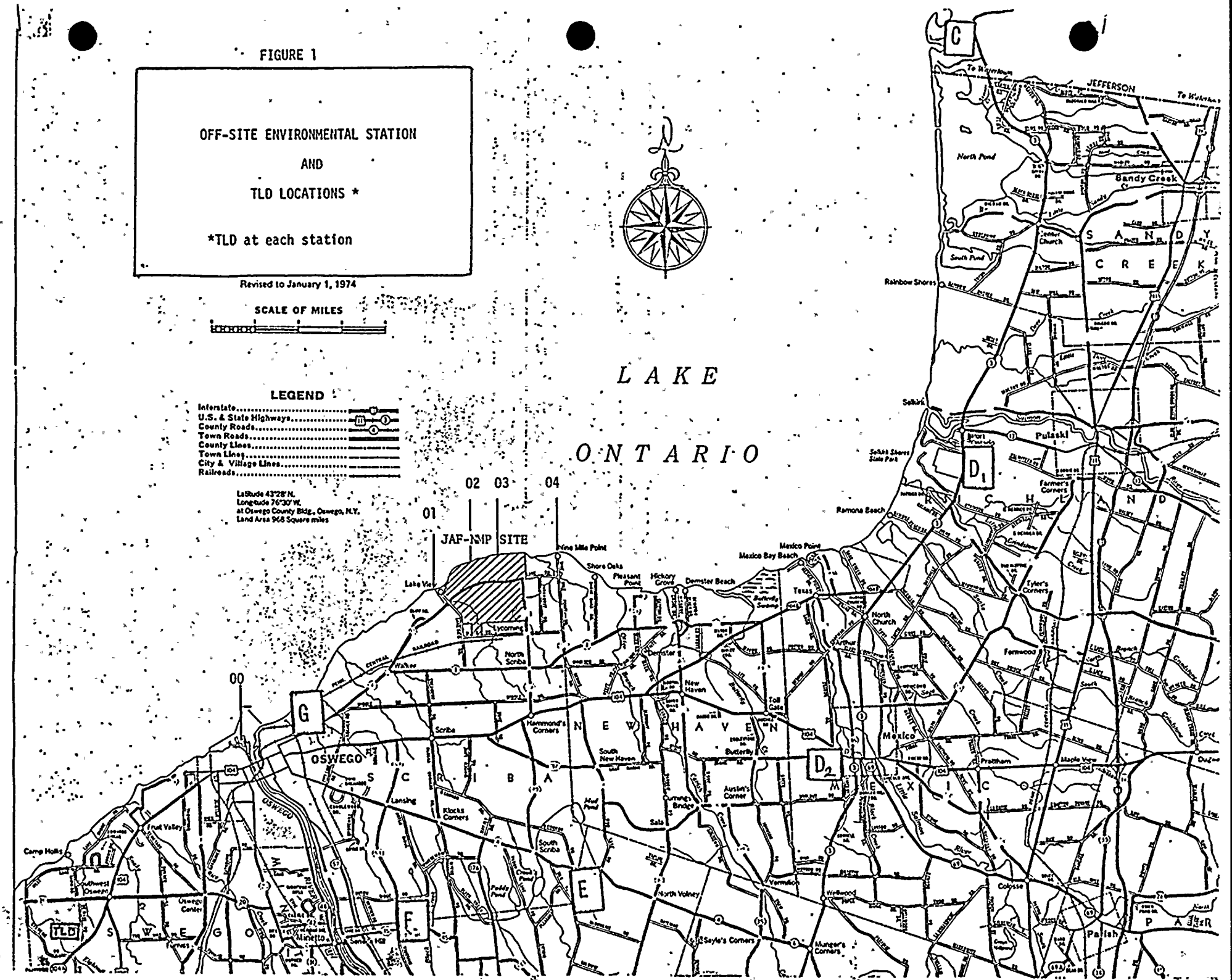
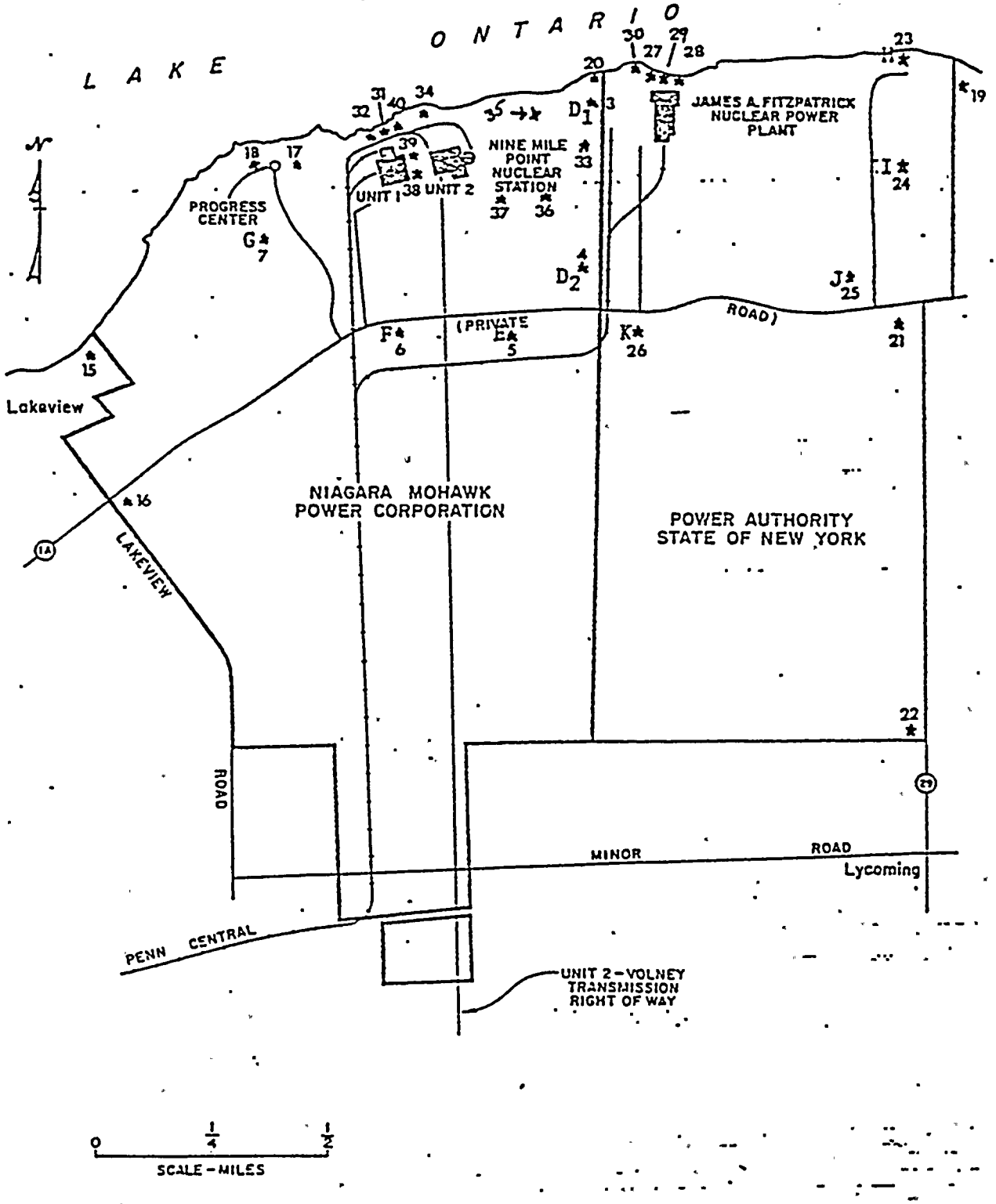


FIGURE 2



SITE VICINITY MAP
ON-SITE ENVIRONMENTAL STATION AND TLD LOCATIONS
*-TLD's
Letters - Stations

Figure 3

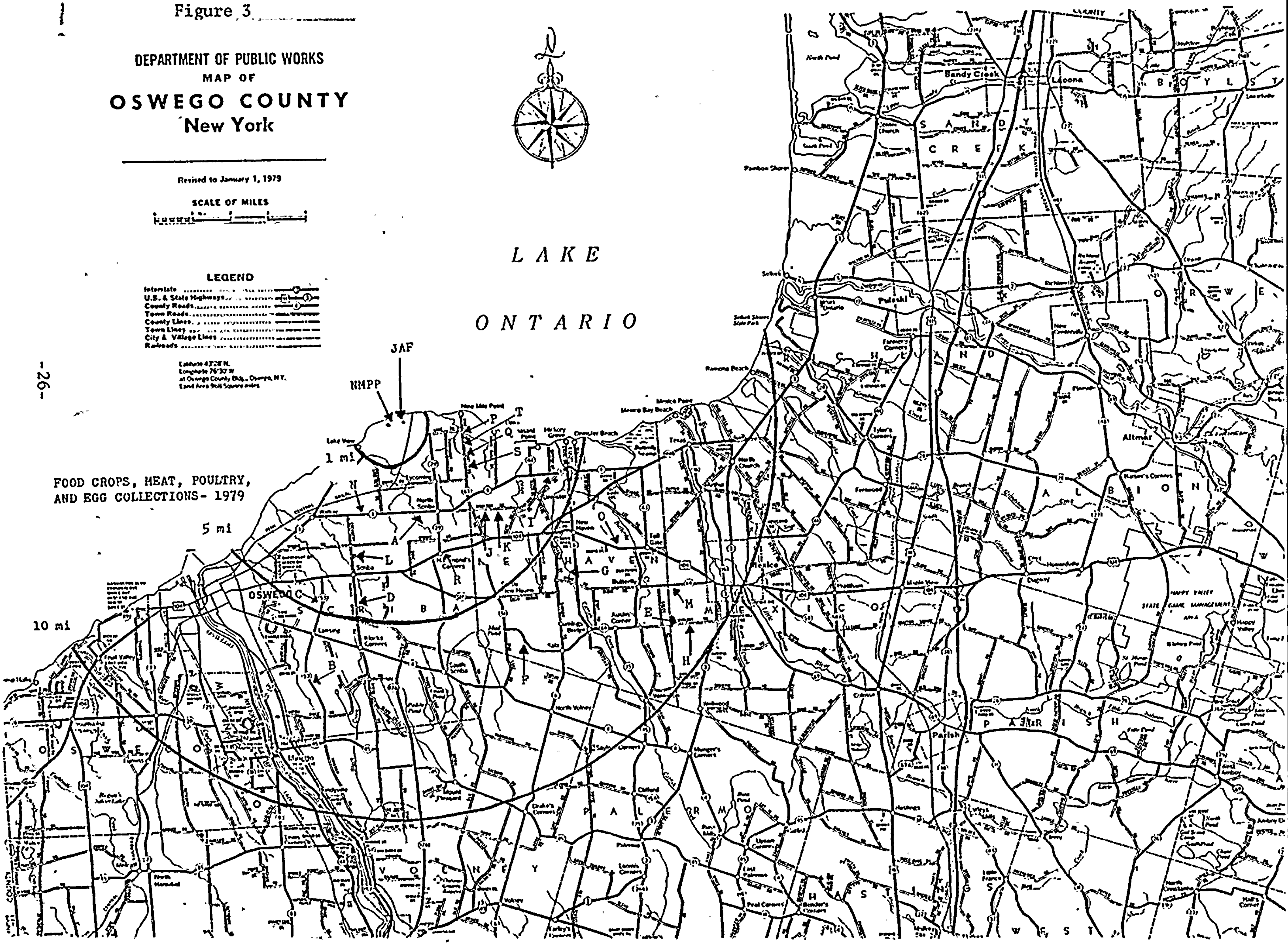

DEPARTMENT OF PUBLIC WORKS
MAP OF
OSWEGO COUNTY
New York
Revised to January 1, 1979
SCALE OF MILES
LEGEND
Interstate
U.S. & State Highways
County Roads
Town Roads
County Lines
Town Lines
City & Village Lines
Railroads
LAKE
ONTARIO
JAF
NMPP
1 mi
5 mi
10 mi
FOOD CROPS, MEAT, POULTRY,
AND EGG COLLECTIONS- 1979
SANDY CREEK
RICHLAND
ALBION
NEW HAVEN
SCRIBA
MEXICO
PARISH
PALERMO
VOLNEY
HASTINGS
OSWEGO
Pulaski
Altmar
Mexico
Parish
Bandy Creek
Lacona
Fruit Valley
Scriba
North Scriba
North Volney
Munger's Corners
Central Square

Figure 4

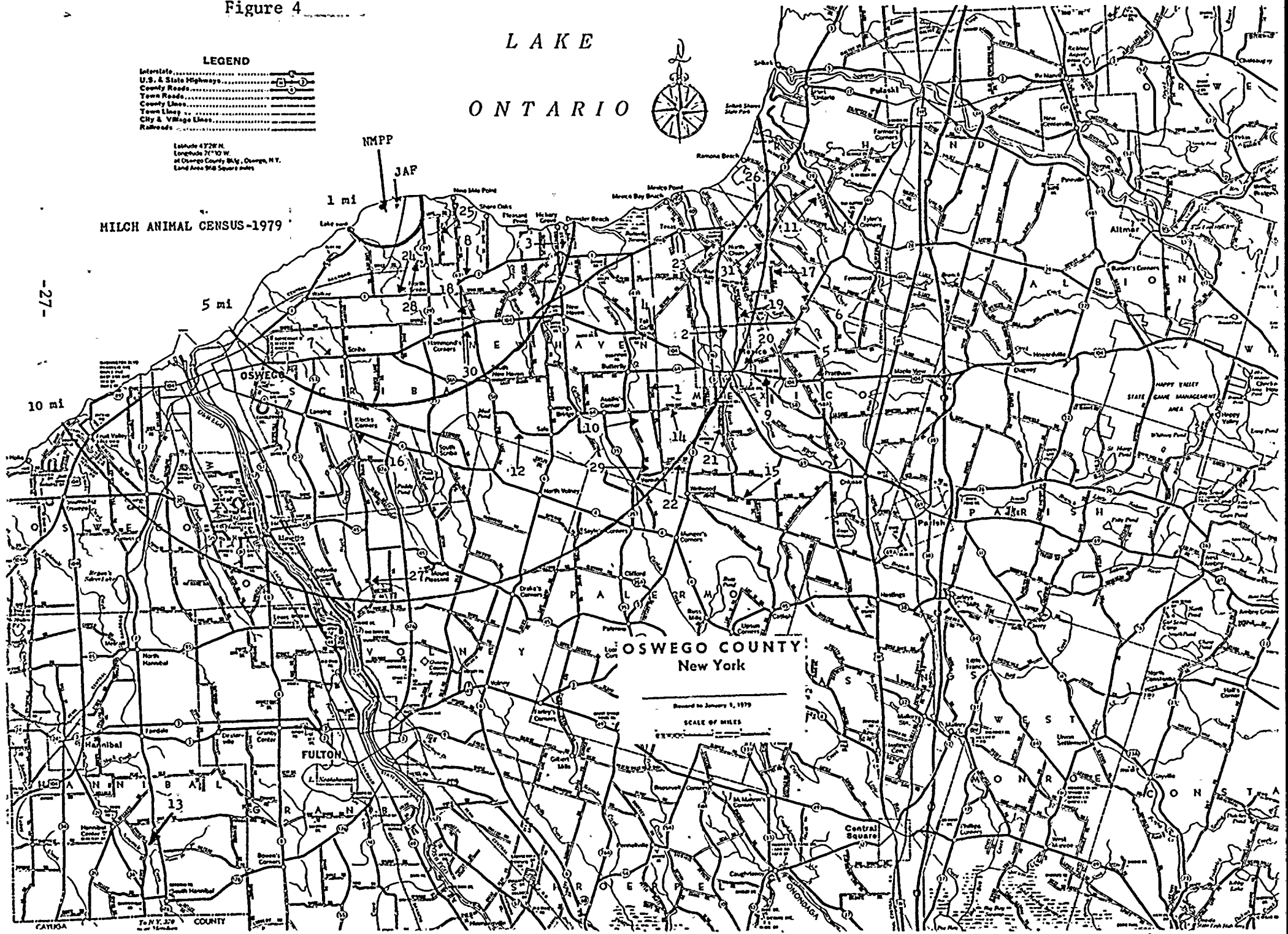

LAKE
ONTARIO
LEGEND
Interstate
U.S. & State Highways
County Roads
Town Roads
County Lines
Town Lines
City & Village Lines
Railroads
Latitude 43°28' N.
Longitude 76°10' W.
at Oswego County Bldg., Oswego, N.Y.
Land Area 968 Square miles
NMPP
JAF
1 mi
5 mi
10 mi
MILCH ANIMAL CENSUS-1979
OSWEGO COUNTY
New York
Revised to January 1, 1979
SCALE OF MILES
OSWEGO
FULTON
Hannibal
Parish
Altmar
Central Square
CAYUGA
COUNTY
ONONDAGA

TABLE 3

CONCENTRATIONS OF GAMMA EMITTERS IN CLADAPHORA SAMPLES

Results in Units of pCi/g(wet) ± 2 sigma

COLLECTION SITE	NUCLIDES FOUND	6-19-79	8-16-79
Off-Site	Be-7	0.13±0.09	0.3±0.2
00	K-40	5.6±0.6	6.3±0.6
	Mn-54	<0.008	<0.02
	Co-58	<0.01	<0.02
	Co-60	0.010±0.008	<0.03
	Cs-134	<0.008	<0.02
	Cs-137	0.011±0.006	0.05±0.02
	Ce-144	<0.05	<0.1
	Ra-226	<0.02	0.15±0.02
	Th-232	<0.03	0.15±0.04
JAF	Be-7	0.83±0.09	<0.1
03	K-40	4.5±0.5	3.0±0.3
	Mn-54	0.12±0.01	<0.01
	Co-58	<0.01	<0.01
	Co-60	0.32±0.03	<0.02
	Cs-134	0.033±0.008	<0.01
	Cs-137	0.24±0.02	0.026±0.009
	Ce-144	0.20±0.04	<0.08
	Ra-226	0.05±0.01	<0.03
	Th-232	0.05±0.02	<0.05
NMPP	Be-7	0.3±0.1	0.4±0.1
02	K-40	5.8±0.6	4.2±0.4
	Mn-54	<0.01	<0.01
	Co-58	<0.01	<0.01
	Co-60	0.07±0.01	0.10±0.01
	Cs-134	<0.01	0.028±0.009
	Cs-137	0.10±0.01	0.25±0.03
	Ce-144	0.06±0.03	<0.05
	Ra-226	<0.03	0.06±0.01
	Th-232	<0.05	0.07±0.03

TABLE 4

CONCENTRATIONS OF Sr-90 AND GAMMA EMITTERS IN SHORELINE SEDIMENT SAMPLES

Results in Units of PCi/g(dry) ± 2 sigma

COLLECTION SITE	COLLECTION DATE	GAMMA EMITTERS						
		Sr-90	K-40	Co-60	Cs-134	Cs-137	Ra-226	Th-232
Off-Site 00	7-03-79	0.04±0.01	13±1	<0.06	<0.06	0.22±0.05	0.48±0.06	0.4±0.1
	12-03-79	<0.005	14±1	<0.08	<0.06	<0.05	0.6±0.1	0.5±0.2
NMPP 02	7-03-79	<0.01	18±2	<0.06	<0.05	0.15±0.04	0.43±0.05	0.5±0.1
	12-03-79	<0.005	20±2	<0.06	<0.06	<0.06	0.67±0.07	0.6±0.1

TABLE 5

CONCENTRATIONS OF STRONTIUM-89* AND -90, AND GAMMA EMITTERS IN FISH SAMPLES

Results in Units of pCi/g(wet) ± 2 sigma

SAMPLE DATE	SAMPLE TYPE	Sr-89	Sr-90	K-40	Cs-134	Cs-137
			FITZPATRICK (03)			
May 1979	White Perch	<0.02	0.039±0.008	1.6±0.3	<0.01	0.08±0.02
	Yellow Perch	<0.03	0.011±0.006	2.2±0.4	0.08±0.02	0.55±0.06
	Rainbow Smelt	<0.02	0.032±0.005	1.5±0.3	<0.01	0.016±0.009
	White Sucker	<0.02	0.014±0.004	1.9±0.4	<0.02	0.02±0.01
October 1979	White Perch	<0.01	0.012±0.003	2.9±0.7	<0.05	0.08±0.04
	Yellow Perch	<0.01	0.016±0.004	3.4±0.7	<0.03	0.08±0.03
	White Sucker	<0.01	<0.005	3.5±0.7	<0.05	0.05±0.03
			NINE MILE POINT (02)			
May 1979	Smallmouth Bass	<0.02	0.023±0.005	1.8±0.3	<0.02	0.07±0.02
	White Perch	<0.02	0.031±0.006	1.6±0.3	<0.02	0.08±0.02
	White Sucker	<0.05	0.03±0.01	1.6±0.5	<0.02	<0.03
	Lake Trout	(1)	(1)	1.8±0.5	<0.02	0.04±0.02
October 1979	White Perch #1	<0.009	0.006±0.003	3.2±0.7	<0.05	0.06±0.04
	White Perch #2	<0.009	0.009±0.003	2.7±0.6	<0.03	<0.05
	Yellow Perch #1	<0.008	0.008±0.003	2.5±0.6	<0.03	<0.05
	Yellow Perch #2	<0.01	0.009±0.003	3.3±0.8	<0.05	0.09±0.04
	White Sucker	<0.007	<0.004	3.8±0.8	<0.05	<0.08
			OSWEGO (00)			
May 1979	Burbot	<0.008	<0.004	1.7±0.3	<0.01	0.03±0.01
	White Perch	<0.02	0.028±0.008	1.9±0.3	<0.01	0.06±0.01
	Rainbow Smelt	0.09±0.02	0.033±0.003	2.0±0.3	<0.01	0.03±0.01
	White Sucker	<0.01	0.013±0.003	2.0±0.3	<0.006	0.04±0.02
October 1979	White Perch	<0.01	0.008±0.003	2.4±0.7	<0.05	<0.05
	Yellow Perch	<0.01	0.009±0.004	3.8±0.8	<0.05	<0.06
	White Sucker	0.04±0.02	<0.01	3.0±0.8	<0.03	<0.05

* Sr-89 results are corrected to sample stop date.

(1) Sample was lost in analysis.

TABLE 6

CONCENTRATIONS OF BETA EMITTERS IN LAKE WATER SAMPLES

Results in Units of pCi/l ± 2 sigma

STATION NUMBER	1-01-79 to 1-31-79	2-01-79 to 2-28-79	3-01-79 to 3-31-79	4-01-79 to 4-30-79	5-01-79 to 5-31-79	6-01-79 to 6-30-79
FN-SWA-JAF-Discharge	3.6±0.7	2.6±0.6	3.5±0.7	3.4±0.8	4.3±0.7	3.7±0.7
FN-SWA-JAF-Inlet	3.9±0.7	3.1±0.7	2.9±0.7	2.1±0.7	3.2±0.7	3.6±0.8
FN-SWA-NMP-Discharge	3.1±0.7	2.9±0.6	11±1	7.3±0.9	8.6±1.0	6.6±0.9
FN-SWA-NMP-Inlet	3.6±0.7	6.3±0.8	5.8±0.8	3.0±0.7	4.5±0.8	3.0±0.7
FN-SWA-OSWP	3.9±0.7	2.9±0.6	3.0±0.7	2.1±0.7	4.8±0.8	3.6±0.8

STATION NUMBER	7-01-79 to 7-31-79	8-01-79 to 8-31-79	9-01-79 to 9-28-79	10-01-79 to 10-31-79	11-01-79 to 11-30-79	12-01-79 to 12-28-79
FN-SWA-JAF-Discharge	3.0±0.7	<0.9	3.1±0.7	3.4±0.7	2.4±0.7	3.5±0.7(1)
FN-SWA-JAF-Inlet	3.3±0.7	2.3±0.7	2.7±0.7	2.8±0.6	2.2±0.7	2.5±0.6(1)
FN-SWA-NMP-Discharge	6.4±0.9	4.2±0.8	4.6±0.8	5.0±0.8	3,2±0.7	5.5±0.8
FN-SWA-NMP-Inlet	3.7±0.7	2.0±0.7	2.2±0.7	3.2±0.7	3.1±0.7	2.8±0.7
FN-SWA-OSWP	3.6±0.7	<0.9	2.1±0.7	2.5±0.6	2.2±0.7	2.9±0.7

(1) Sample collection dates were 12-28-79 to 1-02-80.

TABLE 6A

CONCENTRATIONS OF GAMMA EMITTERS IN LAKE WATER SAMPLES

Results in Units of pCi/l ± 2 sigma

STATION NUMBER	NUCLIDE	1-01-79 to 1-31-79	2-01-79 to 2-28-79	3-01-79 to 3-31-79	4-01-79 to 4-30-79	5-01-79 to 5-31-79	6-01-79 to 6-30-79
FN-SWA-JAF-Discharge		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-JAF-Inlet		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-NMP-Discharge	Cs-137	<1.6	<1.6	6.5±2.1	4.7±2.5	<3.1	5.4±2.4
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-NMP-Inlet	K-40	<31	<31	97±40	<16	<31	<31
	Cs-137	<1.6	<1.6	6.0±2.1	<1.6	<3.1	<1.6
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-OSWP	Cs-137	<1.6	<1.6	2.5±1.8	<1.6	<1.6	<1.6
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD

STATION NUMBER	NUCLIDE	7-01-79 to 7-31-79	8-01-79 to 8-31-79	9-01-79 to 9-28-79	10-01-79 to 10-31-79	11-01-79 to 11-31-79	12-01-79 to 12-28-79
FN-SWA-JAF-Discharge		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD[1]
FN-SWA-JAF-Inlet		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD[1]
FN-SWA-NMP-Discharge	Cs-137	<4.7	3.4±1.7	<1.6	<3.1	<1.6	4.0±2.1
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-NMP-Inlet	K-40	<31	<31	<31	<31	<47	<31
	Cs-137	<3.1	<1.6	<1.6	<1.6	<1.6	<1.6
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-OSWP	Cs-137	<1.6	<3.1	<1.6	<1.6	<3.1	<1.2
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD

(1) Sample collection dates were 12-01-79 to 1-02-80.

Typical LLDs (pCi/l): Mn-54 2, Zn-65 5, Fe-59 5, Cs-134 2, Co-58 2, Co-60 3

TABLE 6B

CANAL WATER DATA

MONTHLY COMPOSITE ANALYSIS

	INLET CANAL			DISCHARGE CANAL		
MONTH	pH	DISSOLVED SOLIDS PPM	SUSPENDED SOLIDS PPM	pH	DISSOLVED SOLIDS PPM	SUSPENDED SOLIDS PPM
January	7.8	370	9.3	7.8	381	14.9
February	7.8	235	8.9	8.0	241	9.9
March	7.5	191	2.0	7.8	203	1.0
April	7.8	206	4.7	7.8	194	8.6
May	7.8	208	4.0	7.9	173	10.0
June	7.8	193	5.0	7.9	175	1.0
July	7.8	172	3.3	7.5	200	2.0
August	7.8	183	3.6	7.7	209	2.0
September	7.8	212	1.2	7.7	223	3.0
October	7.4	185	1.0	7.5	207	2.9
November	7.6	174	1.5	7.7	187	3.6
December	7.4	180	4.8	7.1	195	8.1

TABLE 7

CONCENTRATIONS OF TRITIUM AND STRONTIUM-89* AND -90 IN LAKE WATER (QUARTERLY COMPOSITE SAMPLES)

Results in Units of pCi/l ± 2 sigma

STATION CODE	DATE	TRITIUM	Sr-89	Sr-90
FN-SWA-JAF-Discharge	1-01-79 to 3-31-79	213±170	<0.7	1.2±0.3
	4-01-79 to 6-30-79	449±160	<1.5	1.0±0.4
	7-01-79 to 9-28-79	<125	<1.1	0.6±0.3
	9-30-79 to 1-02-80	305±100	<0.9	1.0±0.4
FN-SWA-JAF-Inlet	1-01-79 to 3-31-79	234±170	<0.7	1.1±0.3
	4-01-79 to 6-30-79	227±110	<1.6	1.2±0.5
	7-01-79 to 9-28-79	276±79	<1.0	0.4±0.3
	9-30-79 to 1-02-80	176±130	<0.9	1.3±0.3
FN-SWA-NMP-Discharge	1-01-79 to 3-31-79	250±170	<0.7	1.2±0.3
	4-01-79 to 6-30-79	519±160	<1.4	1.1±0.4
	7-01-79 to 9-28-79	189±120	1.0±0.7	<0.6
	9-30-79 to 12-28-79	275±100	<0.8	0.9±0.3

TABLE 7 (cont.)

CONCENTRATIONS OF TRITIUM AND STRONTIUM-89* AND -90 IN LAKE WATER (QUARTERLY COMPOSITE SAMPLES)

Results in Units of pCi/l ± 2 sigma

STATION CODE	DATE	TRITIUM	Sr-89	Sr-90
FN-SWA-NMP-Inlet	1-01-79 to 3-31-79	204±170	<0.8	0.7±0.3
	4-01-79 to 6-30-79	197±110	<0.9	0.6±0.3
	7-01-79 to 9-28-79	272±79	<1.0	0.5±0.3
	9-30-79 to 12-28-79	286±100	<0.8	0.9±0.3
FN-SWA-OSWP	1-01-79 to 3-31-79	<273	<0.8	1.1±0.3
	4-01-79 to 6-30-79	174±110	<1.2	0.6±0.4
	7-03-79 to 9-27-79	294±79	0.8±0.7	<0.5
	9-30-79 to 12-28-79	308±100	0.6±0.6	0.7±0.4

* Sr-89 results are corrected for decay to sample stop dates.

TABLE 8
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - OFF SITE STATIONS
GROSS BETA ACTIVITY $pCi/m^3 \pm 2\sigma$

		LOCATION					
WEEK	DATE	C	D_1	D_2	E	F	G
1	1-9-79	0.068±0.007	0.074±0.008	--	0.069±0.007	0.062±0.007	0.067±0.008
2	1-16-79	0.022±0.004	0.036±0.005	0.034±0.004	0.040±0.005	0.033±0.005	0.033±0.005
3	1-23-79	0.029±0.004	0.037±0.005	0.041±0.005	0.044±0.005	0.032±0.005	0.030±0.005
4	1-30-79	0.012±0.003	0.012±0.003	0.015±0.003	0.012±0.003	0.013±0.004	0.014±0.004
5	2-6-79	0.024±0.004	0.025±0.004	0.028±0.004	0.026±0.004	0.026±0.005	0.027±0.005
6	2-13-79	0.035±0.004	0.035±0.004	0.039±0.005	0.037±0.004	0.028±0.005	0.042±0.006
7	2-20-79	0.045±0.005	0.040±0.005	0.042±0.005	0.042±0.005	0.044±0.005	0.045±0.006
8	2-27-79	0.038±0.005	0.036±0.005	0.037±0.005	0.038±0.004	0.037±0.005	0.035±0.005
9	3-6-79	0.036±0.004	0.026±0.004	0.032±0.004	0.025±0.004	0.025±0.005	0.024±0.005
10	3-13-79	0.039±0.005	0.033±0.004	0.032±0.004	0.035±0.004	0.034±0.005	0.034±0.006
11	3-20-79	0.072±0.006	0.064±0.006	0.065±0.006	0.047±0.005	0.056±0.006	0.046±0.006
12	3-27-79	0.025±0.004	0.025±0.004	0.024±0.004	0.030±0.005	0.030±0.005	0.022±0.005
13	4-3-79	0.042±0.005	0.032±0.005	0.041±0.005	0.036±0.004	0.034±0.005	0.028±0.006
14	4-10-79	0.037±0.004	0.035±0.005	0.038±0.005	0.038±0.005	0.033±0.005	0.035±0.006
15	4-17-79	0.045±0.005	0.035±0.005	0.035±0.004	0.036±0.004	0.032±0.005	0.036±0.006
16	4-24-79	0.098±0.007	0.084±0.007	0.124±0.008	0.138±0.008	0.283±0.017	0.115±0.009
17	5-1-79	0.055±0.006	0.062±0.006	0.075±0.006	0.074±0.006	0.066±0.007	0.056±0.007
18	5-8-79	0.123±0.008	0.077±0.006	0.089±0.007	0.096±0.007	0.094±0.008	0.096±0.008
19	5-15-79	0.082±0.006	0.091±0.007	0.099±0.007	0.101±0.008	0.135±0.009	**
20	5-22-79	0.051±0.005	0.048±0.005	0.061±0.006	0.057±0.005	0.055±0.006	--
21	5-30-79	0.060±0.005	0.046±0.005	0.043±0.004	0.046±0.004	0.053±0.005	--
22	6-5-79	0.179±0.009	0.136±0.009	0.208±0.010	0.209±0.011	0.238±0.012	--
23	6-12-79	0.043±0.005	0.044±0.005	0.044±0.005	0.060±0.005	0.057±0.006	--
24	6-19-79	0.209±0.009	0.165±0.009	0.204±0.009	0.233±0.010	0.205±0.011	0.703±0.058
25	6-26-79	0.174±0.009	0.149±0.008	0.136±0.008	0.137±0.008	0.174±0.010	0.121±0.008
26	7-3-79	0.097±0.007	0.061±0.006	0.063±0.006	0.058±0.006	0.059±0.006	0.074±0.007

--Pump Off - TV Interference Test

**Vandalism

TABLE 8 (CONT.)
NMP - JAF SITE
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - OFF SITE STATIONS
GROSS BETA ACTIVITY $pCi/m^3 \pm 2\sigma$

		LOCATION					
WEEK	DATE	C	D_1	D_2	E	F	G
27	7-10-79	0.168±0.009	0.133±0.008	0.150±0.008	0.159±0.009	0.197±0.010	0.166±0.010
28	7-16-79	0.132±0.007	0.140±0.008	0.132±0.008	0.128±0.008	0.104±0.008	0.116±0.008
29	7-24-79	0.159±0.009	0.167±0.009	0.190±0.009	0.214±0.010	0.199±0.010	0.151±0.009
30	7-31-79	0.150±0.008	0.132±0.008	0.183±0.009	0.165±0.009	0.167±0.010	0.166±0.010
31	8-7-79	0.044±0.005	0.046±0.005	0.062±0.006	0.046±0.005	0.060±0.006	0.046±0.006
32	8-14-79	0.090±0.007	0.010±0.003	0.125±0.008	0.101±0.007	0.103±0.008	0.092±0.008
33	8-21-79	0.126±0.007	0.131±0.006	0.188±0.009	0.143±0.008	0.204±0.011	0.151±0.009
34	8-28-79	0.090±0.006	0.092±0.007	0.122±0.008	0.096±0.006	0.102±0.008	0.101±0.007
35	9-4-79	0.095±0.006	0.089±0.006	0.108±0.007	0.110±0.007	0.104±0.008	0.102±0.007
36	9-11-79	0.078±0.006	0.096±0.007	0.031±0.004	0.023±0.003	0.072±0.007	**
37	9-18-79	0.077±0.006	0.087±0.006	0.024±0.004	0.022±0.004	0.114±0.008	**
38	9-25-79	0.068±0.005	0.079±0.006	0.095±0.006	0.091±0.006	0.108±0.008	0.093±0.007
39	10-2-79	0.040±0.004	0.039±0.004	0.035±0.004	0.035±0.004	0.034±0.005	0.039±0.005
40	10-9-79	0.021±0.003	0.023±0.004	0.023±0.003	0.023±0.004	0.025±0.005	0.025±0.004
41	10-16-79	0.047±0.005	0.054±0.005	0.060±0.006	0.045±0.005	0.038±0.005	0.038±0.005
42	10-23-79	0.059±0.006	0.058±0.006	0.069±0.006	0.068±0.006	0.062±0.007	0.050±0.006
43	10-30-79	0.017±0.003	0.021±0.004	0.018±0.003	0.010±0.003	0.023±0.003	0.019±0.004
44	11-6-79	0.045±0.005	0.049±0.005	0.050±0.005	0.045±0.005	0.044±0.004	0.048±0.006
45	11-14-79	0.051±0.005	0.048±0.005	0.045±0.004	0.038±0.004	0.045±0.004	0.039±0.005
46	11-21-79	0.104±0.007	0.087±0.007	0.067±0.007	0.113±0.008	0.115±0.007	0.098±0.008
47	11-27-79	0.054±0.006	0.059±0.006	0.056±0.005	0.061±0.005	0.062±0.005	0.069±0.007
48	12-4-79	0.051±0.005	0.044±0.005	0.050±0.005	0.046±0.005	0.049±0.005	0.047±0.006
49	12-11-79	0.036±0.005	0.038±0.005	0.035±0.004	0.038±0.005	0.034±0.004	0.040±0.004
50	12-18-79	0.032±0.004	0.033±0.004	0.031±0.004	0.030±0.004	0.036±0.004	0.034±0.004
51	12-26-79	0.022±0.003	0.017±0.003	0.024±0.003	0.034±0.004	0.022±0.003	0.025±0.003
52	12-31-79	0.024±0.004	0.035±0.009	0.022±0.003	0.032±0.005	0.025±0.004	0.021±0.004

**Vandalism

TABLE 9
NMP - JAF SITE
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - ON SITE STATIONS
Gross Beta Activity - pCi/m^3 ± 2σ

		LOCATION								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
1	1-8-79	0.057±0.008	0.044±0.007	0.063±0.006	0.067±0.007	0.060±0.006	0.058±0.006	0.019±0.002	0.008±0.002	0.003±0.001
2	1-15-79	0.036±0.006	0.036±0.005	0.043±0.005	0.034±0.004	0.040±0.005	*	0.005±0.001	0.025±0.002	0.052±0.004
3	1-22-79	0.034±0.006	0.039±0.006	0.037±0.005	0.048±0.007	0.049±0.006	0.045±0.005	*	0.027±0.003	0.035±0.003
4	1-29-79	0.014±0.004	0.019±0.004	0.020±0.004	0.017±0.004	0.019±0.004	0.015±0.003	0.016±0.002	0.004±0.001	0.004±0.001
5	2-5-79	0.022±0.005	0.018±0.005	0.023±0.004	-	0.027±0.004	0.008±0.003	0.009±0.002	0.005±0.001	0.001±0.001
6	2-12-79	0.041±0.005	0.042±0.006	0.040±0.005	0.044±0.005	0.043±0.005	0.015±0.003	0.047±0.004	0.008±0.001	0.006±0.002
7	2-28-79	0.050±0.006	0.041±0.006	0.047±0.005	0.049±0.005	0.040±0.004	0.041±0.004	0.046±0.004	0.033±0.003	0.005±0.001
8	2-26-79	0.044±0.007	0.031±0.006	0.040±0.006	0.040±0.006	0.037±0.005	0.003±0.003	0.009±0.002	0.003±0.001	0.007±0.002
9	3-5-79	0.021±0.005	0.026±0.005	0.031±0.004	0.032±0.005	0.030±0.004	0.016±0.003	0.029±0.003	0.008±0.002	0.023±0.002
10	3-12-79	0.026±0.005	0.026±0.005	0.030±0.004	0.031±0.005	0.029±0.004	0.027±0.004	0.027±0.003	0.008±0.002	0.027±0.003
11	3-19-79	0.036±0.005	0.048±0.006	0.048±0.005	0.043±0.005	0.051±0.005	0.012±0.003	0.045±0.004	0.008±0.002	0.040±0.004
12	3-26-79	0.042±0.006	0.037±0.006	0.038±0.005	0.035±0.005	0.047±0.005	0.036±0.004	0.032±0.003	0.031±0.003	0.025±0.003
13	4-2-79	0.041±0.006	0.047±0.007	0.049±0.005	0.048±0.006	0.044±0.005	0.045±0.004	0.019±0.003	0.044±0.003	0.018±0.002
14	4-9-79	0.035±0.005	0.033±0.006	0.039±0.004	0.034±0.005	0.038±0.005	0.013±0.003	0.035±0.003	0.032±0.003	*
15	4-16-79	0.031±0.006	0.028±0.006	0.033±0.004	0.034±0.005	0.038±0.005	0.010±0.003	0.033±0.003	0.028±0.002	0.021±0.002
16	4-23-79	0.078±0.008	0.077±0.009	0.105±0.008	0.089±0.007	0.088±0.007	0.027±0.003	0.019±0.002	*	0.068±0.004
17	4-30-79	0.079±0.007	0.066±0.008	0.091±0.007	0.085±0.007	0.075±0.006	0.073±0.005	0.090±0.004	0.013±0.002	0.061±0.004
18	5-7-79	0.077±0.007	0.077±0.008	0.096±0.007	0.094±0.007	0.108±0.007	0.031±0.003	0.093±0.005	0.046±0.003	0.076±0.004
19	5-14-79	0.070±0.007	0.081±0.008	0.083±0.007	0.077±0.007	0.089±0.007	0.075±0.005	*	0.021±0.002	0.061±0.004
20	5-21-79	0.083±0.007	0.071±0.007	0.084±0.006	0.080±0.007	0.081±0.006	0.080±0.005	0.081±0.004	0.017±0.002	0.070±0.004
21	5-29-79	0.050±0.006	0.051±0.006	0.055±0.005	0.057±0.005	0.057±0.005	0.046±0.004	0.050±0.003	0.048±0.003	0.045±0.003
22	6-4-79	0.131±0.010	0.112±0.010	0.131±0.008	0.133±0.009	0.115±0.008	0.113±0.006	0.131±0.005	0.105±0.005	0.106±0.005
23	6-11-79	0.066±0.007	0.074±0.008	0.053±0.006	0.068±0.006	0.065±0.006	0.070±0.005	0.062±0.004	0.059±0.004	0.061±0.004
24	6-18-79	0.132±0.009	0.135±0.010	0.132±0.008	0.141±0.009	0.132±0.008	0.096±0.005	0.079±0.004	0.080±0.004	0.111±0.005
25	6-25-79	0.120±0.009	0.090±0.008	0.076±0.006	0.105±0.008	0.108±0.007	0.100±0.005	0.126±0.005	0.093±0.004	0.099±0.004
26	7-2-79	0.072±0.007	0.059±0.007	0.073±0.006	0.069±0.007	0.060±0.006	0.041±0.004	0.063±0.004	0.055±0.003	0.060±0.004

- Sample Lost

* Pump Inoperative

TABLE 9 (CONT.)
NMP - JAF SITE
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - ON SITE STATIONS
Gross Beta Activity - $pCi/m^3 \pm 2\sigma$

		LOCATION								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
27	7-9-79	0.155±0.010	0.148±0.010	0.215±0.010	0.167±0.009	0.202±0.009	0.141±0.006	0.190±0.006	0.157±0.006	0.158±0.006
28	7-16-79	0.127±0.009	0.106±0.008	0.142±0.008	0.111±0.008	0.138±0.007	0.049±0.004	0.102±0.004	0.025±0.002	0.088±0.004
29	7-23-79	0.162±0.010	0.148±0.010	0.188±0.009	0.112±0.008	0.171±0.008	0.081±0.004	0.138±0.005	0.020±0.002	0.064±0.003
30	7-30-79	0.161±0.010	0.138±0.010	0.181±0.009	0.131±0.009	0.174±0.009	0.093±0.006	0.271±0.008	0.157±0.006	0.182±0.007
31	8-6-79	0.083±0.008	0.068±0.008	0.080±0.007	0.074±0.006	0.090±0.006	0.074±0.005	0.047±0.003	0.050±0.003	0.067±0.004
32	8-13-79	0.103±0.008	0.085±0.008	0.107±0.007	0.102±0.007	0.123±0.007	0.100±0.005	0.136±0.005	0.105±0.005	0.082±0.004
33	8-20-79	0.061±0.008	0.041±0.006	0.057±0.005	0.041±0.004	0.063±0.005	0.061±0.005	0.062±0.004	0.031±0.002	0.037±0.003
34	8-27-79	0.064±0.006	0.038±0.006	0.076±0.006	0.066±0.004	0.132±0.007	0.035±0.003	0.083±0.004	0.014±0.002	0.055±0.003
35	9-3-79	0.058±0.006	0.050±0.005	0.061±0.005	0.051±0.004	0.073±0.005	0.057±0.004	0.039±0.003	0.046±0.003	0.042±0.003
36	9-10-79	0.077±0.007	0.029±0.006	0.022±0.003	0.023±0.003	0.029±0.004	0.094±0.005	0.046±0.004	0.068±0.004	0.052±0.003
37	9-17-79	0.070±0.006	0.062±0.005	0.073±0.006	0.088±0.006	0.088±0.006	0.049±0.004	0.068±0.004	0.059±0.003	0.023±0.002
38	9-24-79	0.082±0.007	0.079±0.006	0.091±0.006	0.079±0.006	0.096±0.006	0.021±0.003	0.081±0.004	0.027±0.003	0.071±0.004
39	10-1-79	0.028±0.005	0.026±0.003	0.030±0.004	0.034±0.004	0.038±0.004	0.033±0.004	0.012±0.001	0.024±0.002	0.012±0.002
40	10-8-79	0.021±0.004	0.024±0.003	0.023±0.004	0.022±0.003	0.020±0.003	0.025±0.003	0.019±0.002	0.008±0.002	0.003±0.001
41	10-15-79	0.020±0.005	0.016±0.003	0.022±0.003	0.016±0.003	0.021±0.003	0.019±0.003	0.006±0.001	0.005±0.001	0.006±0.001
42	10-22-79	0.053±0.007	0.030±0.004	0.041±0.004	0.036±0.004	0.041±0.004	0.016±0.003	0.027±0.003	0.031±0.003	0.010±0.002
43	10-29-79	0.028±0.005	0.023±0.004	0.024±0.005	0.024±0.004	0.024±0.004	0.026±0.003	0.004±0.001	0.007±0.001	0.008±0.002
44	11-5-79	0.031±0.005	0.033±0.004	0.037±0.006	0.036±0.004	0.036±0.004	0.028±0.003	0.029±0.002	0.030±0.002	0.009±0.001
45	11-13-79	0.052±0.006	0.051±0.005	0.063±0.007	0.061±0.004	0.074±0.005	0.055±0.004	0.072±0.004	0.055±0.003	0.021±0.002
46	11-19-79	0.105±0.009	0.118±0.007	0.150±0.012	0.121±0.007	0.114±0.007	0.086±0.005	0.081±0.004	0.099±0.005	0.037±0.003
47	11-26-79	0.056±0.007	0.061±0.006	0.069±0.007	0.063±0.005	0.062±0.005	0.066±0.004	0.058±0.003	0.011±0.002	0.016±0.002
48	12-3-79	0.032±0.005	0.029±0.004	0.038±0.006	0.040±0.004	0.028±0.004	0.014±0.002	0.050±0.004	0.038±0.003	0.019±0.002
49	12-10-79	0.024±0.005	0.024±0.004	0.026±0.003	0.029±0.003	0.028±0.004	0.029±0.003	0.008±0.001	0.029±0.003	0.027±0.003
50	12-17-79	0.031±0.004	0.030±0.004	0.036±0.004	0.029±0.004	0.036±0.004	0.013±0.002	0.039±0.003	0.037±0.003	0.042±0.004
51	12-26-79	0.029±0.004	0.076±0.005	0.052±0.004	0.037±0.004	0.037±0.004	0.028±0.003	0.033±0.002	0.030±0.002	0.009±0.001
52	12-31-79	0.021±0.005	0.022±0.004	0.025±0.004	0.023±0.003	0.023±0.004	0.007±0.002	0.018±0.002	0.021±0.002	0.005±0.001

TABLE 10

CONCENTRATIONS OF GAMMA EMITTERS IN MONTHLY COMPOSITES OF NMP-JAF AIR PARTICULATE SAMPLES

Results in Units of 10^{-3} pCi/m^3 ± 2 sigma

NUCLIDES	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
			OFF-SITE COMPOSITE			
Be-7	83±8	84±8	100±10	110±11	86±10	85±12
Co-60	<1.2	0.5±0.3	<1.6	<1.0	<1.1	1.4±0.4
Cs-137	0.8±0.4	0.8±0.3	1.1±0.5	1.4±0.5	2.0±0.6	1.2±0.7
Ce-141	1.4±0.4	<0.4	<0.9	<0.9	<1.6	<1.2
Ce-144	2.6±1.5	2.5±1.1	5.0±1.9	5.4±1.8	<3.5	<3.4
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
			ON-SITE COMPOSITE			
Be-7	52±5	51±5	77±8	66±8	62±6	120±12
Mn-54	0.2±0.2	0.11±0.09	<0.5	<0.4	<0.3	<0.5
Co-60	0.7±0.2	0.3±0.1	0.6±0.3	<0.6	<0.6	<0.9
Ru-103	0.3±0.2	<0.1	<0.4	<0.4	<0.3	<0.3
Ru-106	<1.6	1.0±1.0	<3.2	<3.4	<3.4	<3.3
Cs-137	0.4±0.2	0.3±0.1	0.8±0.3	0.7±0.3	0.8±0.3	1.5±0.3
Ce-141	0.8±0.3	<0.2	<0.5	<0.9	<0.4	<0.6
Ce-144	2.2±1.0	1.7±0.6	3.6±1.0	2.3±1.1	4.0±0.8	5.3±1.1
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

TABLE 10A

CONCENTRATIONS OF GAMMA EMITTERS IN MONTHLY COMPOSITES OF NMP - JAF
AIR PARTICULATE SAMPLES

Results in Units of 10^{-3} pCi/m^3 ± 2 sigma

NUCLIDES	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
					OFF-SITE COMPOSITE A-1				
Be-7	110±11	99±15	380±38	120±12	83±11	82±11	61±11	95±14	110±14
Ru-106	<6.3	<5.0	13±8	<6.5	<6.6	<6.5	<6.6	<8.3	<7.9
Cs-137	1.4±0.7	1.8±0.8	4.7±1.4	1.4±0.7	<0.9	<0.9	<1.1	<1.1	<0.8
Ce-144	7.2±2.2	6.3±2.8	18±6	4.3±2.1	<5.0	<4.9	<5.0	<3.4	<4.8
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
					OFF-SITE COMPOSITE A-2				
Be-7	110±12	50±15	120±16	110±12	89±13	63±10	66±12	70±12	89±11
Cs-137	1.2±0.7	<1.2	1.6±0.9	<1.2	<1.4	<0.8	<1.1	<0.9	<1.2
Ce-144	5.4±2.8	<5.1	<4.9	<5.0	<5.0	<3.3	<5.0	<3.4	<3.2
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
					ON-SITE COMPOSITE B-1				
Be-7	120±12	85±13	120±17	76±11	70±8	79±8	57±9	90±11	100±10
Cs-137	1.7±0.5	1.2±0.6	1.7±0.9	0.9±0.5	<0.8	<0.6	<0.6	<0.8	<0.6
Ce-144	5.6±1.8	7.7±4.2	9.0±4.2	3.9±2.6	<3.3	<3.3	<1.7	<1.7	<3.2
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
					ON-SITE COMPOSITE B-2				
Be-7	47±5	55±6	150±15	88±9	73±7	52±5	37±5	55±6	73±7
Cs-137	0.7±0.3	0.6±0.3	2.0±0.5	1.1±0.3	0.6±0.3	<0.3	<0.3	<0.3	0.6±0.3
Ce-144	<1.6	2.4±1.4	6.9±1.6	2.6±0.9	<1.7	<1.1	<1.4	<1.7	<1.6
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

TABLE 11
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY OFF-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location					
WEEK	DATE	C	D_1	D_2	E	F	G
1	1-9-79	<3.68e-02	<2.69e-02	--	<3.68e-02	<4.14e-02	<4.07e-02
2	1-16-79	<2.05e-02	<2.03e-02	<1.71e-02	<1.65e-02	<2.25e-02	<1.97e-02
3	1-23-79	<2.81e-02	<2.18e-02	<2.17e-02	<1.73e-02	<2.21e-02	<2.47e-02
4	1-30-79	<1.82e-02	<2.01e-02	<2.12e-02	<2.01e-02	<2.41e-02	<2.76e-02
5	2-6-79	<1.70e-02	<1.95e-02	<2.29e-02	<1.73e-02	<2.26e-02	<2.55e-02
6	2-13-79	<2.08e-02	<1.82e-02	<2.06e-02	<1.69e-02	<3.00e-02	<2.82e-02
7	2-20-79	<2.04e-02	<2.34e-02	<2.13e-02	<1.71e-02	<2.35e-02	<2.88e-02
8	2-27-79	<1.77e-02	<2.40e-02	<2.39e-02	<2.29e-02	<3.05e-02	<2.25e-02
9	3-6-79	<1.97e-02	<1.76e-02	<1.95e-02	<1.49e-02	<2.65e-02	<2.89e-02
10	3-13-79	<1.88e-02	<1.91e-02	<1.73e-02	<2.02e-02	<2.49e-02	<2.43e-02
11	3-20-79	<2.32e-02	<2.24e-02	<2.31e-02	<2.21e-02	<2.96e-02	<2.63e-02
12	3-27-79	<2.00e-02	<2.15e-02	<1.76e-02	<1.90e-02	<2.41e-02	<2.68e-02
13	4-3-79	<1.86e-02	<1.95e-02	<1.73e-02	<2.15e-02	<2.44e-02	<3.21e-02
14	4-10-79	<2.28e-02	<9.55e-03	<2.04e-02	<2.08e-02	<2.86e-02	<2.83e-02
15	4-17-79	<2.25e-02	<2.01e-02	<2.19e-02	<2.01e-02	<2.96e-02	<3.24e-02
16	4-24-79	<2.27e-02	<2.32e-02	<2.12e-02	<2.28e-02	<3.73e-02	<3.67e-02
17	5-1-79	<2.53e-02	<2.12e-02	<1.77e-02	<2.76e-02	<2.57e-02	<2.13e-02
18	5-8-79	<1.98e-02	<2.50e-02	<2.60e-02	<1.95e-02	<2.80e-02	<3.16e-02
19	5-15-79	<1.29e-02	<1.92e-02	<1.93e-02	<1.84e-02	<2.62e-02	* *
20	5-22-79	<1.92e-02	<2.32e-02	<2.43e-02	<1.26e-02	<2.43e-02	* *
21	5-30-79	<1.60e-02	<1.97e-02	<1.81e-02	<1.76e-02	<1.92e-02	* *
22	6-5-79	<2.73e-02	<2.70e-02	<2.14e-02	<2.59e-02	<2.75e-02	* *
23	6-12-79	<2.34e-02	<2.21e-02	<2.36e-02	<2.03e-02	<2.57e-02	* *
24	6-19-79	<2.37e-02	<2.39e-02	<2.17e-02	<1.61e-02	<2.31e-02	<2.18e-01
25	6-26-79	<2.06e-02	<2.42e-02	<2.69e-02	<2.03e-02	<2.83e-02	<3.19e-02
26	7-3-79	<2.35e-02	<1.95e-02	<2.56e-02	<2.58e-02	<2.15e-02	<2.47e-02

--Pump Off - TV Interference Test

**Vandalism

TABLE 11 (CONT.)
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY OFF-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location					
WEEK	DATE	C	D_1	D_2	E	F	G
27	7-10-79	<2.52e-02	<2.68e-02	<1.90e-02	<2.59e-02	<2.64e-02	<2.69e-02
28	7-17-79	<2.38e-02	<2.36e-02	<2.32e-02	<2.34e-02	<2.38e-02	<2.82e-02
29	7-24-79	<2.86e-02	<2.38e-02	<2.72e-02	<2.75e-02	<3.49e-02	<3.37e-02
30	7-31-79	<1.82e-02	<2.26e-02	<2.25e-02	<1.92e-02	<2.61e-02	<2.52e-02
31	8-7-79	<2.60e-02	<2.37e-02	<2.42e-02	<2.31e-02	<3.28e-02	<2.57e-02
32	8-14-79	<1.93e-02	<2.35e-02	<2.70e-02	<1.66e-02	<2.79e-02	<3.00e-02
33	8-21-79	<1.80e-02	<1.83e-02	<1.99e-02	<1.88e-02	<2.69e-02	<2.39e-02
34	8-28-79	<1.98e-02	<2.46e-02	<2.17e-02	<1.82e-02	<2.89e-02	<2.77e-02
35	9-4-79	<2.11e-02	<2.05e-02	<1.66e-02	<1.89e-02	<2.55e-02	<2.11e-02
36	9-11-79	<1.92e-02	<2.51e-02	<2.02e-02	<1.97e-02	<2.74e-02	**
37	9-18-79	<2.12e-02	<1.83e-02	<2.49e-02	<1.94e-02	<2.51e-02	**
38	9-25-79	<2.08e-02	<1.97e-02	<1.90e-02	<2.52e-02	<3.07e-02	<2.82e-02
39	10-2-79	<2.23e-02	<2.40e-02	<2.24e-02	<2.26e-02	<2.77e-02	<2.71e-02
40	10-9-79	<2.07e-02	<1.73e-02	<1.62e-02	<2.05e-02	<2.86e-02	<2.34e-02
41	10-16-79	<1.72e-02	<2.48e-02	<1.68e-02	<2.43e-02	<2.67e-02	<3.10e-02
42	10-23-79	<1.37e-02	<1.91e-02	<1.72e-02	<1.90e-02	<2.42e-02	<2.32e-02
43	10-30-79	<2.04e-02	<2.38e-02	<2.07e-02	<1.78e-02	<1.99e-02	<2.49e-02
44	11-6-79	<2.22e-02	<2.04e-02	<2.00e-02	<1.84e-02	<1.79e-02	<1.86e-02
45	11-14-79	<1.99e-02	<2.02e-02	<2.05e-02	<1.19e-02	<1.61e-02	<2.16e-02
46	11-21-79	<2.35e-02	<2.01e-02	<3.33e-02	<1.79e-02	<2.50e-02	<3.17e-02
47	11-27-79	<2.55e-02	<2.99e-02	<1.98e-02	<2.05e-02	<1.91e-02	<3.03e-02
48	12-4-79	<2.23e-02	<2.60e-02	<2.07e-02	<2.16e-02	<2.16e-02	<2.64e-02
49	12-11-79	<3.02e-02	<2.23e-02	<1.83e-02	<2.38e-02	<2.04e-02	<2.13e-02
50	12-18-79	<2.28e-02	<1.93e-02	<2.05e-02	<2.26e-02	<1.84e-02	<1.95e-02
51	12-26-79	<1.80e-02	<2.08e-02	<1.59e-02	<1.90e-02	<1.47e-02	<1.44e-02
52	12-31-79	<3.58e-02	<7.09e-02	<2.15e-02	<2.64e-02	<3.11e-02	<2.76e-02

**Vandalism

TABLE 12
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY ON-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
1	1-8-79	<4.83e-02	<4.23e-02	<3.08e-02	<2.73e-02	<3.05e-02	<3.04e-02	<1.35e-02	<1.09e-02	<1.09e-02
2	1-15-79	<2.98e-02	<2.66e-02	<1.77e-02	<1.56e-02	<2.09e-02	*	<8.43e-03	<9.31e-03	<1.51e-02
3	1-22-79	<3.74e-02	<3.15e-02	<2.17e-02	<3.14e-02	<2.44e-02	<1.57e-02	*	<1.14e-02	<1.47e-02
4	1-29-79	<2.65e-02	<3.13e-02	<1.98e-02	<2.10e-02	<2.02e-02	<1.90e-02	<9.34e-03	<8.32e-03	<9.23e-03
5	2-5-79	<2.97e-02	<2.89e-02	<2.35e-02	<2.39e-02	<2.08e-02	<1.74e-02	<8.33e-03	<8.96e-03	<9.74e-03
6	2-12-79	<2.91e-02	<2.76e-02	<1.56e-02	<2.37e-02	<1.63e-02	<1.39e-02	<1.37e-02	<8.19e-03	<9.75e-03
7	2-20-79	<3.00e-02	<2.79e-02	<2.62e-02	<3.13e-02	<2.05e-02	<2.27e-02	<1.41e-02	<9.41e-03	<8.94e-03
8	2-26-79	<3.98e-02	<3.25e-02	<2.59e-02	<3.52e-02	<2.67e-02	<2.32e-02	<1.18e-02	<9.26e-03	<8.76e-03
9	3-5-79	<2.47e-02	<2.86e-02	<2.27e-02	<2.46e-02	<2.29e-02	<1.61e-02	<1.13e-02	<1.09e-02	<7.45e-03
10	3-12-79	<2.16e-02	<2.55e-02	<1.34e-02	<2.16e-02	<1.98e-02	<1.96e-02	<1.06e-02	<9.80e-03	<1.11e-02
11	3-19-79	<2.55e-02	<3.00e-02	<1.89e-02	<1.46e-02	<2.22e-02	<1.60e-02	<1.74e-02	<9.29e-03	<1.69e-02
12	3-26-79	<2.66e-02	<3.57e-02	<1.78e-02	<2.60e-02	<2.39e-02	<2.06e-02	<7.64e-03	<9.34e-03	<1.85e-02
13	4-2-79	<2.64e-02	<3.03e-02	<2.31e-02	<2.88e-02	<2.11e-02	<1.65e-02	<2.15e-02	<1.19e-02	<9.96e-03
14	4-9-79	<1.82e-02	<3.36e-02	<2.12e-02	<2.64e-02	<2.54e-02	<2.22e-02	<1.17e-02	<9.28e-03	*
15	4-16-79	<3.20e-02	<3.34e-02	<2.13e-02	<1.61e-02	<2.61e-02	<1.77e-02	<9.03e-03	<9.47e-03	<9.31e-03
16	4-23-79	<3.02e-02	<3.90e-02	<2.20e-02	<3.05e-02	<2.08e-02	<1.25e-02	<9.75e-03	*	<1.22e-02
17	4-30-79	<3.19e-02	<2.86e-02	<1.99e-02	<2.53e-02	<2.24e-02	<1.50e-02	<1.07e-02	<8.46e-03	<1.31e-02
18	5-7-79	<2.62e-02	<2.82e-02	<1.99e-02	<2.23e-02	<2.23e-02	<1.37e-02	<1.12e-02	<9.23e-03	<7.79e-03
19	5-14-79	<2.53e-02	<3.03e-02	<2.40e-02	<2.68e-02	<2.09e-02	<1.34e-02	*	<1.11e-02	<8.54e-03
20	5-21-79	<2.44e-02	<3.01e-02	<2.11e-02	<1.84e-02	<1.92e-02	<1.41e-02	<8.40e-03	<9.82e-03	<8.55e-03
21	5-29-79	<2.20e-02	<3.14e-02	<1.77e-02	<1.93e-02	<1.70e-02	<1.44e-02	<7.33e-03	<8.86e-03	<8.22e-03
22	6-4-79	<3.36e-02	<3.67e-02	<2.43e-02	<2.92e-02	<2.54e-02	<1.82e-02	<1.18e-02	<9.81e-03	<1.40e-02
23	6-11-79	<2.65e-02	<3.28e-02	<1.92e-02	<2.86e-02	<2.23e-02	<1.22e-02	<8.44e-03	<1.02e-02	<1.13e-02
24	6-18-79	<2.33e-02	<2.91e-02	<2.21e-02	<2.76e-02	<2.43e-02	<1.15e-02	<9.30e-03	<9.95e-03	<1.05e-02
25	6-25-79	<2.77e-02	<3.09e-02	<2.29e-02	<2.34e-02	<2.23e-02	<1.29e-02	<1.03e-02	<9.02e-03	<1.02e-02
26	7-2-79	<3.46e-02	<4.27e-02	<2.25e-02	<3.57e-02	<2.01e-02	<1.55e-02	<9.95e-03	<1.05e-02	<9.98e-03

*Pump Inoperative

TABLE 12 (CONT.)
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY ON-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
27	7-9-79	<3.03e-02	<2.53e-02	<2.64e-02	<2.13e-02	<2.02e-02	<1.58e-02	<1.10e-02	<1.15e-02	<1.11e-02
28	7-16-79	<2.61e-02	<3.58e-02	<1.95e-02	<2.73e-02	<2.26e-02	<1.30e-02	<9.92e-03	<1.13e-02	<1.05e-02
29	7-23-79	<2.32e-02	<3.66e-02	<2.72e-02	<2.95e-02	<2.40e-02	<1.05e-02	<1.00e-02	<8.73e-03	<6.88e-03
30	7-30-79	<2.84e-02	<3.45e-02	<2.47e-02	<2.79e-02	<2.94e-02	<1.86e-02	<9.56e-03	<1.06e-02	<1.03e-02
31	8-6-79	<3.54e-02	<4.34e-02	<2.52e-02	<2.22e-02	<2.76e-02	<1.78e-02	<1.13e-02	<8.99e-03	<9.76e-03
32	8-13-79	<2.57e-02	<2.66e-02	<2.06e-02	<2.01e-02	<1.83e-02	<1.47e-02	<9.62e-03	<9.80e-03	<7.08e-03
33	8-20-79	<3.63e-02	<2.85e-02	<2.00e-02	<1.81e-02	<1.73e-02	<1.09e-02	<1.06e-02	<1.10e-02	<9.98e-03
34	8-27-79	<2.62e-02	<2.93e-02	<2.15e-02	<1.73e-02	<1.99e-02	<1.48e-02	<1.26e-02	<1.19e-02	<9.49e-03
35	9-3-79	<1.65e-02	<2.60e-02	<2.24e-02	<1.57e-02	<1.85e-02	<1.66e-02	<7.79e-03	<8.67e-03	<8.93e-03
36	9-10-79	<2.41e-02	<2.42e-02	<1.95e-02	<1.41e-02	<1.78e-02	<1.44e-02	<9.60e-03	<9.66e-03	<8.59e-03
37	9-17-79	<2.93e-02	<2.03e-02	<1.81e-02	<2.43e-02	<1.84e-02	<1.55e-02	<1.25e-02	<1.00e-02	<7.50e-03
38	9-24-79	<2.31e-02	<2.06e-02	<2.10e-02	<1.74e-02	<2.01e-02	<1.64e-02	<1.08e-02	<1.40e-02	<5.70e-03
39	10-1-79	<3.45e-02	<2.33e-02	<2.62e-02	<1.86e-02	<2.21e-02	<1.94e-02	<9.60e-03	<1.05e-02	<8.68e-03
40	10-8-79	<2.97e-02	<1.80e-02	<1.82e-02	<1.43e-02	<1.67e-02	<1.04e-02	<8.43e-03	<1.65e-02	<8.78e-03
41	10-15-79	<2.83e-02	<1.87e-02	<1.77e-02	<2.14e-02	<1.85e-02	<1.16e-02	<8.86e-03	<9.48e-03	<8.75e-03
42	10-22-79	<2.59e-02	<2.24e-02	<1.38e-02	<1.63e-02	<1.52e-02	<1.54e-02	<9.43e-03	<9.80e-03	<8.39e-03
43	10-29-79	<2.61e-02	<1.94e-02	<2.73e-02	<3.81e-02	<1.82e-02	<1.73e-02	<7.46e-03	<9.24e-03	<6.10e-03
44	11-5-79	<3.13e-02	<1.64e-02	<3.60e-02	<1.52e-02	<1.50e-02	<1.34e-02	<1.02e-02	<1.17e-02	<8.10e-03
45	11-13-79	<2.59e-02	<2.01e-02	<2.94e-02	<1.47e-02	<1.42e-02	<1.44e-02	<8.08e-03	<8.92e-03	<6.81e-03
46	11-19-79	<3.39e-02	<3.35e-02	<3.43e-02	<1.99e-02	<1.87e-02	<1.79e-02	<1.14e-02	<1.32e-02	<8.01e-03
47	11-26-79	<3.41e-02	<2.30e-02	<3.29e-02	<1.88e-02	<1.45e-02	<1.58e-02	<9.32e-03	<1.48e-02	<5.26e-03
48	12-3-79	<3.23e-02	<2.07e-02	<3.39e-02	<1.84e-02	<2.23e-02	<1.34e-02	<1.33e-02	<1.19e-02	<8.10e-03
49	12-10-79	<3.07e-02	<2.24e-02	<8.35e-03	<1.52e-02	<1.91e-02	<1.11e-02	<1.09e-02	<1.11e-02	<1.02e-02
50	12-17-79	<2.91e-02	<1.89e-02	<2.30e-02	<1.98e-02	<2.23e-02	<8.43e-03	<1.49e-02	<1.29e-02	<1.12e-02
51	12-26-79	<2.36e-02	<1.54e-02	<1.96e-02	<1.57e-02	<9.75e-03	<1.16e-02	<7.68e-03	<9.97e-03	<6.31e-03
52	12-31-79	<4.59e-02	<2.49e-02	<3.40e-02	<2.23e-02	<2.57e-02	<1.77e-02	<1.27e-02	<1.42e-02	<1.21e-02

*Pump Inoperative

TABLE 13
TLD's
DIRECT RADIATION MEASUREMENTS - QUARTERLY RESULTS
mRem/Quarter

STATION NUMBER	LOCATION	QUARTER 1st	2nd	3rd	4th
3	D1 on Site	25±1	17±5	16±4	*
4	D2 on Site	12±2	11±3	15±3	17±3
5	E on Site	11±1	10±1	14±1	14±1
6	F on Site	11±1	8±2	13±1	14±2
7	G on Site	9±1	8±2	15±5	13±1
8	C off Site	12±2	13±7	17±3	16±2
9	D1 off Site	10±1	9±2	14±1	14±3
10	D2 off Site	10±1	9±1	*±	13±2
11	E off Site	10±1	9±1	13±3	13±2
12	F off Site	9±0	9±2	13±3	15±2
13	G off Site	10±1	9±3	14±3	13±4
14	SW Oswego	10±1	15±1	13±3	16±2
15	Pole 66, W. Bound	9±1	8±2	13±2	12±4
16	Pole 51, W. Bound	10±1	8±1	15±3	13±4
17	Prog. Cen. E. Yard	12±0	11±3	18±4	16±2
18	Prog. Cen. Picnic	11±1	10±3	13±3	12±1
19	Pole 9, E. Bound	11±0	10±2	14±2	15±3
20	JAF Shore, W. Bound	22±1	26±7	21±3	33±3
21	Pole 67, E. Bound	11±1	11±4	18±4	18±4
22	Pole 53, E. Bound	9±1	8±1	13±1	12±1
23	H on Site	15±1	12±2	16±1	19±2
24	I on Site	11±2	8±2	14±2	12±2
25	J on Site	10±1	10±1	14±2	14±3
26	K on Site	10±2	9±3	14±3	13±1
27	Light Pole (N) JAF	65±3	53±6	41±4	72±13
28	Light Pole (E) JAF	218±20	272±14	131±18	188±39
29	N. Fence (E) JAF	126±19	117±19	83±10	100±2
30	N. Fence (MW) JAF	34±2	21±6	23±2	42±7
31	N. Fence (MW) NMP-1	43±2	56±6	42±9	53±7
32	N. Fence (W) NMP-1	28±3	34±7	27±4	29±3
33	NMP/JAF, Twin Pole (W) of JAF W. Fence	25±2	15±1	19±2	*
34	N of Unit 2 on Lake	15±1	16±3	18±2	21±1
35	E of Unit 2 on Stor. Bldg.	16±1	179±19	14±2	14±2
36	Pole Tower, FNM-13	11±1	11±2	14±1	15±4
37	Pole Tower, FNM-14	14±0	16±1	19±2	18±2
38	SE End of Shop on Fence NMP-1	16±2	14±1	19±1	23±2
39	NMP-1 ME Gate	352±11	389±66	401±39	445±47
40	NE Gate NMP-1	39±1	42±1	46±3	59±10
41	Paint Shop W. Unit 2	24±1	33±6	35±3	40±7
42	Turb. Bldg. (NW) Unit 2	56±16	83±12	77±16	98±4

* TLDs lost.

TABLE 14

CONTINUOUS RADIATION MONITORS* (GM)

mR/hr

1st HALF

		mR/hr		
LOCATION	PERIOD	MIN.	MAX.	AVE.
C Off-Site	January	0.010	0.030	0.018
	February	0.012	0.023	0.018
	March	0.013	0.030	0.020
	April	0.015	0.030	0.022
	May	0.015	0.030	0.022
	June	0.018	0.032	0.021
D_1 On-Site	January	0.035	0.065	0.050
	February	0.035	0.080	0.050
	March	0.030	0.100	0.050
	April	0.030	0.120	0.040
	May	0.015	0.040	0.020
	June	0.010	0.030	0.012
D_2 On-Site	January	0.010	0.020	0.012
	February	0.025	0.035	0.050
	March	0.010	0.028	0.020
	April	0.028	0.060	0.040
	May	0.030	0.080	0.045
	June	0.012	0.040	0.020
E On-Site	January	0.015	0.025	0.025
	February	0.012	0.025	0.020
	March	0.015	0.050	0.025
	April	0.015	0.065	0.022
	May	0.018	0.040	0.020
	June	0.015	0.035	0.020
F On-Site	January	0.010	0.014	0.015
	February	0.010	0.035	0.015
	March	0.010	0.060	0.020
	April	0.010	0.045	0.018
	May	0.010	0.050	0.020
	June	0.010	0.028	0.020

*Detectors are 'bugged' to insure onscale readings.

TABLE 14 (Cont.)

CONTINUOUS RADIATION MONITOS* (GM)

mR/hr

1st HALF

		mR/hr		
LOCATION	PERIOD	MIN.	MAX.	AVE.
G On-Site	January	0.010	0.025	0.015
	February	0.010	0.020	0.015
	March	0.010	0.020	0.015
	April	0.010	0.025	0.015
	May	0.010	0.018	0.025
	June	0.010	0.030	0.020
H On-Site	January	0.018	0.040	0.030
	February	0.019	0.040	0.025
	March	0.018	0.045	0.028
	April	0.020	0.045	0.030
	May	0.020	0.050	0.030
	June	0.020	0.050	0.035
I On-Site	January	0.010	0.018	0.012
	February	0.010	0.019	0.013
	March	0.010	0.020	0.013
	April	0.010	0.050	0.012
	May	0.010	0.020	0.012
	June	0.010	0.020	0.012
J On-Site	January	0.010	0.025	0.018
	February	0.010	0.020	0.015
	March	0.010	0.030	0.018
	April	0.010	0.030	0.020
	May	0.018	0.035	0.020
	June	0.010	0.420	0.020
K On-Site	January	0.010	0.020	0.015
	February	0.012	0.025	0.020
	March	0.012	0.030	0.018
	April	0.015	0.035	0.020
	May	0.015	0.030	0.020
	June	0.015	0.030	0.022

TABLE 14 (Cont.)

CONTINUOUS RADIATION MONITORS* (GM)

mR/hr

2nd HALF

LOCATION	PERIOD	mR/hr MIN.	MAX.	AVE.
C Off-Site	July	0.028	0.032	0.025
	August	0.017	0.034	0.025
	September	0.010	0.023	0.017
	October	0.010	0.050	0.021
	November	0.015	0.029	0.020
	December	0.015	0.028	0.018
D_1 On-Site	July	0.010	0.070	0.015
	August	0.010	0.027	0.015
	September	0.012	0.032	0.021
	October	0.017	0.045	0.035
	November	0.018	0.073	0.030
	December	0.018	0.073	0.040
D_2 On-Site	July	0.010	0.045	0.025
	August	0.010	0.035	0.020
	September	0.010	0.027	0.017
	October	0.011	0.030	0.019
	November	0.010	0.023	0.015
	December	0.011	0.023	0.015
E On-Site	July	0.015	0.040	0.020
	August	0.015	0.035	0.020
	September	0.015	0.038	0.020
	October	0.017	0.033	0.020
	November	0.015	0.035	0.020
	December	0.013	0.035	0.020
F On-Site	July	0.012	0.030	0.020
	August	0.010	0.028	0.020
	September	0.017	0.030	0.024
	October	0.017	0.033	0.023
	November	0.017	0.035	0.025
	December	0.015	0.035	0.021

*Detectors are 'bugged' to insure onscale readings.

TABLE 14 (Cont.)

CONTINUOUS RADIATION MONITORS* (GM)

mR/hr

2nd HALF

		mR/hr		
LOCATION	PERIOD	MIN.	MAX.	AVE.
G On-Site	July	0.015	0.032	0.022
	August	0.016	0.030	0.023
	September			
	October	0.012	0.029	0.015
	November	0.010	0.023	0.015
	December	0.015	0.023	0.018
H On-Site	July	0.020	0.055	0.045
	August	0.020	0.050	0.035
	September	0.020	0.050	0.035
	October	0.023	0.050	0.035
	November	0.023	0.050	0.030
	December	0.023	0.050	0.033
I On-Site	July	0.010	0.028	0.018
	August	0.010	0.029	0.017
	September	0.010	0.025	0.016
	October	0.010	0.027	0.013
	November	0.010	0.023	0.013
	December	0.010	0.023	0.013
J On-Site	July	0.010	0.060	0.025
	August	0.018	0.050	0.025
	September	0.015	0.040	0.030
	October	0.010	0.043	0.023
	November	0.015	0.040	0.025
	December	0.015	0.040	0.023
K On-Site	July	0.012	0.032	0.022
	August	0.010	0.035	0.020
	September	0.010	0.023	0.021
	October	0.010	0.025	0.015
	November	0.010	0.030	0.020
	December	0.012	0.030	0.020

TABLE 15

CONCENTRATIONS OF IODINE-131 IN MILK

Results in Units of pCi/l ± 2 sigma

STATION LOCATIONS*	5-01-79	6-05-79	7-05-79	8-01-79	9-04-79	10-01-79	11-05-79	12-04-79
4	<0.3	<0.3	<0.4	<0.6	<0.4	<0.5	<0.4	<0.4
13	<0.3	<0.4	<0.5	<0.3	<0.4	<0.5	<0.3	<0.4
14	<0.4	<0.3	<0.6	<0.3	<0.5	<0.4	<0.3	<0.3
16	<0.2	<0.3	<0.7	<0.4	<0.5	<0.5	<0.5	<0.3
25	<0.3	<0.3	<0.4	<0.3	<0.5	<0.6	<0.4	<0.4
8	<0.2(1)	<0.3	<0.4	<0.3	<0.3	<0.7	<0.4	<0.3

(1) Sampling date was 5-08-79.

TABLE 16

CONCENTRATIONS OF STRONTIUM-90 AND GAMMA EMITTERS IN MILK (MONTHLY SAMPLE)

Results in Units of pCi/l ± 2 sigma

STATION	NUCLIDES	5-01-79	6-05-79	7-05-79	8-01-79	9-04-79	10-01-79	11-05-79	12-04-79
Linda Clark	K-40	990±99	1100±110	1100±110	1100±110	1100±110	1600±160	1500±150	1400±140
	Cs-137	<3.1	5.1±2.0	<3.1	6.1±2.4	7.6±3.4	6.1±3.5	4.7±2.7	<4.7
	Sr-90	5.3±1.5	3.6±0.8	4.6±2.1	4.6±0.9	3.7±1.0	2.6±1.4	<3.7	<12(1)
Luther Hannum	K-40	990±99	1100±110	990±99	1100±110	1500±150	1600±160	1500±150	1600±160
	Cs-137	<3.1	<3.1	<3.1	<3.1	<4.7	<4.7	<4.7	<4.7
	Sr-90	5.0±2.1	4.3±1.0	5.3±0.9	5.3±1.6	6.3±2.0	3.1±1.4	<4.4	4.6±0.8
Harold.Hurlburt	K-40	990±99	1100±110	1100±110	1100±110	1500±150	1500±150	1500±150	1500±150
	Cs-137	<3.1	4.9±2.4	4.3±2.0	4.5±2.0	<4.7	<4.7	3.2±2.3	3.2±2.6
	Sr-90	3.0±2.6	3.3±0.7	3.4±0.9	4.7±3.3	2.1±0.9	3.2±0.8	<2.8	2.2±0.8
Robert Jones	K-40	980±98	1100±110	1100±110	960±96	1400±140	1500±150	1500±150	1500±150
	Cs-137	<3.1	7.7±2.2	6.4±1.9	4.4±2.1	7.0±3.2	<4.7	4.7±2.9	<6.2
	Sr-90	3.5±3.2	7.3±1.7	8.0±1.3	4.6±2.6	3.1±2.1	5.6±1.1	<2.2	29±11(2)
Charles Parkhurst	K-40	990±99	1100±110	1600±160	1300±130	1400±140	1600±160	1400±140	1500±150
	Cs-134	<3.2	<1.6	<3.2	<1.6	9.0±2.3	<3.3	<3.2	<3.2
	Cs-137	13±3	5.4±2.1	13±5	8.6±2.2	53±5	17±4	7.5±3.0	19±4
	Sr-90	5.2±1.6	7.5±0.8	8.5±1.2	5:0±1.1	4.7±1.2	5.1±3.2	<4.6	<17(1)

(1) High MDL due to low chemical yield.
(2) Result suspect due to low chemical yield; insufficient sample remaining for analysis.

TABLE 17

MILCH ANIMAL CENSUS

SPRING 1979

TOWN	NO. ON MAP	NO. MILCH ANIMALS
New Haven	1	30C
	4	55C
	10	40C
	30	2G
Mexico	2	40C
	5	29C
	6	50C
	23	64C
	9	16C
	14	60C
	12	45C
	15	2G
	17	34C
	19	33C
	20	46C
	22	38C
	24	1C
	21	6C
	26	40C
	29	20C
	31	30C
Richland	11	57C
Lycoming	25	25C
Hannibal	13	23C
Oswego	3	*
	7	13C
	8	26C
	16	39C
	18	5C
	27	30C
	28	4C

C = cows
G = goats
* = would not cooperate

TABLE 17 (Continued)

MILCH ANIMAL CENSUS

SUMMER 1979

TOWN	NO. ON MAP	NO. MILCH ANIMALS
New Haven	1	41C
	4	64C
	10	40C
	30	0
Mexico	2	36C
	5	0
	6	52C
	9	17C
	14	58C
	12	45C
	15	0
	17	35C
	19	42C
	20	45C
	22	40C
	23	*
	24	1C
	21	21C
	26	35C
	29	0
	31	29C
Richland	11	55C
Lycoming	25	25C
Hannibal	13	26C
Oswego	3	40C
	7	0
	8	26C
	16	39C
	18	2C
	27	16C
	28	8C

C = cows
G = goats
* = Numerous attempts were made to contact this person, all unsuccessful

TABLE 18

CONCENTRATIONS OF GAMMA EMITTERS IN VARIOUS FOOD PRODUCTS

Results in Units of pCi/g(wet) ± 2 sigma

SAMPLE LOCATIONS*	SAMPLE DATE	DESCRIPTION	Be-7	K-40	Cs-137	Ce-141
A	5-24-79	Lamb	<0.1	2.7±0.3	0.046±0.009	<0.02
L	5-25-79	Chicken	<0.07	2.5±0.3	<0.008	<0.01
J	5-25-79	Chicken	<0.07	1.8±0.2	<0.008	<0.02
I	5-25-79	Chicken	<0.07	2.4±0.2	0.014±0.007	<0.01
L	5-25-79	Eggs	<0.06	1.2±0.1	<0.006	<0.01
J	5-25-79	Eggs	<0.06	0.9±0.2	<0.008	<0.02
K	6-05-79	Eggs	<0.07	1.1±0.2	<0.008	<0.01
H	7-03-79	Pork	<0.1	2.1±0.3	0.02±0.01	<0.03
N	8-02-79	Beef	<0.09	2.7±0.3	0.028±0.008	<0.02
M	8-14-79	Green Beans	<0.06	2.3±0.2	<0.006	<0.01
D	8-14-79	Cabbage	<0.4	8.8±0.9	<0.03	<0.06
C	8-14-79	Lettuce	<0.4	3.4±0.6	<0.05	<0.04
C	8-14-79	Tomatoes	<0.02	2.0±0.2	<0.003	<0.007
D	8-14-79	Tomatoes	<0.02	2.3±0.2	<0.003	<0.004
M	8-14-79	Zucchini	<0.02	1.3±0.1	0.004±0.002	<0.005
S	10-10-79	Honey	<0.2	1.1±0.2	<0.02	<0.06
T	10-10-79	Cabbage	<0.2	3.8±0.4	<0.02	<0.03
P	10-10-79	Collard Greens	<1.0	3.7±0.9	<0.08	<0.2
Q	10-10-79	Swiss Chard	<0.3	4.9±0.6	<0.03	<0.07

TABLE 18 (cont.)

CONCENTRATIONS OF GAMMA EMITTERS IN VARIOUS FOOD PRODUCTS

Results in Units of pCi/g(wet) ± 2 sigma

SAMPLE	SAMPLE DATE	DESCRIPTION	Be-7	K-40	Cs-137	Ce-141
T	10-10-79	Squash	<0.07	1.9±0.2	<0.006	<0.01
Q	10-10-79	Tomatoes	<0.07	2.6±0.3	<0.005	<0.02
E	11-02-79	Beef	<0.3	1.9±0.3	<0.01	<0.08
B	11-02-79	Pork	<0.3	2.1±0.2	0.02±0.01	<0.08
L	11-19-79	Chicken	<0.1	2.5±0.3	<0.009	<0.05
L	11-27-79	Eggs	<0.1	0.9±0.1	<0.009	<0.04
O	11-27-79	Eggs	<0.1	1.2±0.2	<0.008	<0.04
F	12-05-79	Eggs	<0.1	1.2±0.2	<0.01	<0.04
D	12-12-79	Cabbage	<0.2	2.4±0.3	<0.02	<0.04
R	12-12-79	Cabbage	<0.1	3.0±0.4	<0.02	0.03±0.02
T	12-13-79	Cabbage	0.2±0.1	4.1±0.4	<0.03	<0.02
J	11-20-79	Chicken	<0.1	2.5±0.3	0.010±0.007	<0.05
K	11-26-79	Chicken	<0.2	2.2±0.2	<0.01	<0.05
T	12-13-79	Beef	<0.1	2.7±0.3	0.07±0.01	<0.03
G	12-17-79	Beef	<0.1	2.3±0.2	<0.01	0.03±0.02

TABLE 19

CONCENTRATIONS OF STRONTIUM-90 AND GAMMA EMITTERS IN SOIL

Results in Units of pCi/g(dry) ± 2 sigma

SAMPLE LOCATION	SAMPLE DATE	Sr-90	K-40	Cs-137	Ra-226	Th-232
4	11-16-79	0.031±0.005	15±2	0.79±0.08	0.6±0.1	0.5±0.2
13	11-19-79	0.055±0.006	9.6±1.1	1.3±0.1	0.57±0.07	0.5±0.1
14	11-12-79	0.016±0.016	13±1	1.3±0.1	0.8±0.1	0.7±0.1
16	11-13-79	0.045±0.005	15±2	0.69±0.07	0.57±0.07	0.5±0.1
25	11-16-79	0.041±0.005	13±1	0.72±0.09	0.7±0.1	0.4±0.1
8	11-16-79	0.033±0.006	13±1	1.0±0.1	0.77±0.08	0.7±0.2

TABLE 20

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS (PASTURE GRASS)

Results in Units of pCi/g(wet)

SAMPLE LOCATION	SAMPLE DATE	Be-7	K-40	Cs-137	Ra-226
4	11-16-79	3.9±1.0	3.7±0.9	<0.06	<0.2
13	11-19-79	4.8±0.9	3.4±1.0	0.11±0.06	<0.2
14	11-12-79	6.9±1.1	5.1±1.0	<0.09	<0.2
16	11-13-79	2.6±0.4	4.3±0.6	<0.03	<0.09
25	11-16-79	4.5±1.1	4.6±1.2	0.14±0.08	0.14±0.09
8	11-16-79	4.9±0.7	2.6±0.7	<0.06	<0.2

TABLE 21

CONCENTRATIONS OF IODINE-131 IN MILK

Results in Units of pCi/l ± 2 sigma

STATION	1-07-80	2-12-80	3-03-80
4	<0.4	<0.4	<0.3
13	<0.4	<0.3	<0.3
14	<0.4	<0.3	<0.3
16	<0.4	<0.3	<0.3
25	<0.3	<0.4	<0.3

TABLE 22

CONCENTRATIONS OF GAMMA EMITTERS IN MILK

Results in Units of pCi/l ± 2 sigma

STATION	NUCLIDES	1-07-80	2-12-80	3-03-80
4	K-40	1500±150	1400±140	1500±150
	Cs-137	6.4±3.3	<6.2	8.0±3.4
13	K-40	1400±140	1400±140	1600±160
	Cs-137	3.4±3.3	<4.7	<4.7
14	K-40	1400±140	1500±150	1500±150
	Cs-137	<4.7	<4.7	<4.7
16	K-40	1400±140	1500±150	1400±140
	Cs-137	<6.2	<4.7	<6.2
25	K-40	1700±170	1800±180	1800±180
	Cs-137	16±2	21±5	14±4

TABLE 23

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS

Results in Units of pCi/g(wet) ± 2 sigma

STATION	DESCRIPTION	DATE	Ra-226	Cs-137	K-40
4	Hay	1-07-80	.18±.13	.09±.06	13±2
	Grain		<.06	.04±.02	15±2
	Corn Silage		.06±.03	<.02	2.2±0.4
13	Hay		.18±.09	<.08	19±2
	Grain		.07±.03	<.03	2.4±0.4
	Corn Silage		<.03	.02±.02	2.3±0.3
14	Hay		<.16	<.06	20±2
	Grain		<.05	<.02	7.4±0.7
	Corn Silage		<.03	<.01	2.6±0.3
16	Hay		<.16	<.08	16±2
	Grain		<.05	.03±.02	7.2±0.7
	Corn Silage		<.03	<.01	1.3±0.2
25	Hay		<.12	.18±.06	7.1±1.0
	Grain		<.08	.04±.02	6.4±0.6

TABLE 23 (cont.)

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS

Results in Units of pCi/g(wet) ± 2 sigma

STATION	DESCRIPTION	DATE	Ra-226	Cs-137	K-40	Be-7
4	Hay	2-12-80	<.16	<.11	12±2	<1.1
	Grain		<.06	.03±.02	15±2	<.22
	Corn Silage		<.05	.05±.02	2.5±0.4	.25±.14
	Dry Corn		<.03	<.02	2.3±0.3	<.18
	Haylage		<.09	<.05	5.9±0.7	<.47
13	Hay		<.31	<.09	14±2	<.99
	Grain		<.06	<.03	2.6±0.4	<.25
	Corn Silage		<.03	<.02	2.5±0.3	<.19
14	Hay		<.31	<.09	20±2	<.86
	Grain		<.06	<.03	7.6±0.8	<.19
	Corn Silage		<.03	<.01	2.7±0.3	<.15
16	Hay		<.16	<.12	13±2	<1.1
	Grain		.07±.02	.03±.02	7.5±0.8	<.22
	Corn Silage		<.05	<.02	1.9±0.3	<.15
25	Hay		<.16	.15±.07	8.8±1.3	<.89
	Grain		<.11	<.03	8.0±0.8	<.23

TABLE 23 (cont.)

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS

Results in Units of pCi/g(wet) ± 2 sigma

STATION	DESCRIPTION	DATE	Ra-226	Cs-137	K-40	Mn-54	Co-60
4	Hay	3-03-80	<.16	.17±.10	6.0±1.3	<.08	<.11
	Grain		<.05	<.03	15±2	<.02	<.03
	Corn Silage		<.06	.07±.02	2.6±0.4	.03±.02	.08±.02
	Haylage		<.08	<.05	7.4±0.7	<.03	<.05
13	Hay		<.16	<.11	14±2	<.10	<.09
	Grain		<.05	<.02	2.6±0.4	<.02	<.03
	Corn Silage		<.05	<.02	2.1±0.3	<.02	<.03
14	Hay		<.16	<.09	9.5±1.5	<.07	<.13
	Grain		<.06	<.03	8.6±0.9	<.03	<.03
	Corn Silage		<.05	<.02	2.6±0.3	<.02	<.03
16	Hay		<.16	<.08	24±2	<.07	<.09
	Grain		<.05	<.02	7.2±0.7	<.02	<.03
	Corn Silage		<.03	<.02	2.2±0.3	<.02	<.02
25	Hay		<.16	.13±.05	7.3±1.2	<.07	<.08
	Grain		<.06	<.03	8.0±0.8	<.02	<.03

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NIAGARA MOHAWK POWER CORPORATION

ANNUAL ENVIRONMENTAL OPERATING REPORT

PART B - RADIOLOGICAL REPORT

January 1, 1979 - December 31, 1979

NINE MILE POINT NUCLEAR STATION UNIT #1

Facility Operating License DPR-63

Docket Number 50-220

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NINE MILE POINT UNIT I

ANNUAL ENVIRONMENTAL OPERATING REPORT

I. INTRODUCTION

This report is submitted in accordance with Section B to DPR-63, Docket 50-220.

II. DESCRIPTION

The required sample collection and analysis schedule for NMP-1 is listed in Tables 1 and 2.

The sample collections for the radiological program are performed by two groups. Texas Instruments Incorporated, Ecological Services Branch (TIES) performs much of the environmental sampling. TIES is presently performing the Nine Mile Point Aquatic Ecology Study at the site. The staff required by TIES to perform this study is used to perform the terrestrial sampling required for the site radiological monitoring program. In-plant and remaining terrestrial sampling is performed jointly by the JAFNPP and NMPNS staffs.

1. SAMPLE COLLECTION METHODOLOGY

A. Lake Water

The two indicator stations are the respective inlet canals at JAFNPP and NMPNS. These samples are composited using continuously running pumps which discharge into large collection tanks. These tanks are emptied weekly and an aliquot is saved for the monthly composite.

The control station sample is collected from the City of Oswego water intake. Grab samples are drawn from the intake prior to treatment and are composited in a large sample bottle.

Quarterly composite samples are made up from aliquots of monthly samples.

B. Air Particulate/Iodine

The air particulate glass fiber filters are approximately two inches in diameter and are placed in sample holders in the intake line of a vacuum sampler. Directly down stream from the particulate filter is a 2 x 1 charcoal cartridge used to absorb airborne radioiodine. The samplers run continuously and the charcoal cartridges and particulate filters are changed on a weekly basis.

The particulate filters are composited on a monthly basis by location (off-site, on-site) after being counted for gross beta activity.

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

B. Air Particulate/Iodine (Continued)

The air sampling stations are located in two rings surrounding the site. The on-site locations ring the terrestrial area around the plants inside the site boundary.

The on-site sampling network is composed of 9 stations. The off-site air monitoring locations range 6 to 17 miles from the site and is composed of 6 stations. Air monitoring locations are shown on Figures 1 and 2.

C. Milk

Milk samples are collected in polyethylene bottles from the bulk storage tank at each sampled farm. Before the sample is drawn the tank contents are agitated from 3 to 5 minutes to assure a homogenous mixture of milk and butterfat. Three gallons are collected during the first week of each month from each of the five farms. The samples are frozen and shipped to the analytical contractor within 24 hours of collection in insulated shipping containers. The milk sampling locations are found on Figure 4. (See Table 15 for identification of locations sampled.)

D. Meat, Poultry and Eggs

Semi-annually one kilogram of meat is collected from locations within a 10 mile radius of the site. Weekly phone calls are made to the local butcher to determine availability of slaughtered live stock from within the sampling area. Whenever possible meat samples are collected from locations previously used.

Semi-annually one kilogram of poultry and one kilogram of eggs are collected from each of three locations within a 10 mile radius of the site. Attempts are made to collect poultry and eggs at the same time as the meat samples. The poultry and eggs are frozen and shipped in insulated containers. Whenever possible samples are obtained from previously sampled farms (see Figure 3).

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

E. Human Food Crops

Human food crops are collected during the late summer harvest season at locations previously sampled, if available. One kilogram each, of two types of fruits and/or vegetables from each of the three locations within a ten mile radius of the site are collected. The types of fruits and vegetables sampled depends on what is locally available at the time of collection. Attempts are made to collect at least one broadleaf type vegetable from each location. The fruits and vegetables are chilled prior to shipping and shipped fresh in insulated containers (see Figure 3).

F. Soil Samples

Soil samples are required once every three years. No regular samples were collected during 1978. Soil samples will be collected again during the 1980 sample season. Special soil samples were collected in November 1979. These samples are discussed in Section III.B.6.

G. Fish Samples

Available fish species are removed from the Nine Mile Point Aquatic Ecology Study monitoring collections during the spring and fall collection periods. Samples are collected from a combination of the four on-site sample transects and one off-site sample transect (see Figure 1). Available species are selected under the following guidelines:

1. 0.5 to 1 kilogram of edible portion only of a maximum of 5 species per location.

2. Samples composed of more than one kilogram of single species from the same location are divided into samples of 1 kilogram each prior to shipping. A maximum of three samples per species per location are used. Weight of samples are the edible portions only.

Selected fish samples are frozen immediately after collection and segregated by species and location. Samples are shipped frozen within two weeks in insulated containers.

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

H. Shoreline Sediments

One kilogram of shoreline sediment sample is collected at one on-site location and one off-site location. The samples are placed in plastic bags, sealed and shipped for analysis in insulated containers.

I. Cladaphora

The species glomerata is the dominate species of cladaphora in collections in the NMP vicinity. Cladaphora is a long filamentous alga attached by a holdfast to rocks and other submerged substrates. Colonization and propagation of cladaphora extends out to a depth of about 20 feet, and the long, growing strands of cladaphora in water 5 feet deep or less are constantly being broken off by wave activity. Maximum growth usually occurs in water about 10-15 feet deep, but this will vary, depending upon turbidity (Wezernak et al 1974). Growth of cladaphora begins in late May, reaches a peak in late June or early July, and declines during the warmer summer period of late July and early August (Storr and Sweeney 1971). As temperatures drop, a secondary peak may occur in late August. Growth ceases in September due to decreasing light and temperature.

Cladaphora samples are collected in the spring and fall season from two on-site locations and one off-site location. Cladaphora is collected from natural substrates. The cladaphora is scraped from the substrates into sample containers, labeled, frozen and shipped in insulated containers for off-site analysis.

J. TLD (direct radiation)

Thermoluminescent dosimeters (TLD's) are used to measure direct radiation in the JAF/NMP-1 environment. The TLD stations are placed around the site using a three zone division. The first group of TLD's are located within the site boundary and are called "on-site" TLD's. The second set of TLD's are called "site boundary" stations and are located at approximately the site perimeter. The third division of TLD stations are the "off-site" stations, located at the off-site air monitoring stations.

II. DESCRIPTION (Continued)

1. SAMPLE COLLECTION METHODOLOGY (Continued)

J. TLD (direct radiation) (Continued)

Each TLD set is made up of 2 $CaSO_4$ dosimeters (2 chips per dosimeter), sealed in a polethylene package to insure dosimeter integrity. The TLD packages are further protected by placement in plexiglass "birdhouses" or by tape sealing to supporting surfaces. The dosimeters are collected, replaced and evaluated on a quarterly basis.

2. ANALYSIS PERFORMED

The environmental radiological surveillance sample analysis is performed by Radiation Management Corporation (RMC) except for the particulate samples and iodine cartridges which are counted on site. These two sample media are counted on site to facilitate the compositing of the air particulate filters after gross beta analysis and the timely analysis of charcoal cartridge for Iodine-131.

3. CHANGES IN THE 1979 SAMPLE PROGRAM

A. An additional milk sample location was added to the 1979 sampling program. This farm was previously sampled during the 1977 program, but chose not to participate in the 1978 sampling program. This additional sample station is designated as location number 8 (see Figure 4). This same sample station was designated as station number 4 in the 1977 Environmental Report. Only I-131 analysis was performed on this sample location.

B. 1979 sample results reported as "less than" (<) represent the lower limits of detection (LLD). LLD is defined by the "USNRC Branch Technical Position (revision 1, November 1979)" as the smallest concentration of radioactive material in the sample that will yield a net count (above system background) that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real signal". Sample data reported in the 1979 report as "less than" results were calculated using 4.66 times the standard deviation of the background count rate or of the counting rate of a blank sample where appropriate. Sample data reported as "less than" results prior to the 1979 sample program were calculated based on 3.0 times the standard deviation of the background count rate.

II. DESCRIPTION (Continued)

3. CHANGES IN THE 1979 SAMPLE PROGRAM (Continued)

C. Lower Limits of Detections for airborne radioiodine (I-131) analysis reported for 1979 are decay corrected to end of sample period. Previous airborne I-131 analysis results were decay corrected to the mid-point of sample collection.

D. Amendment No. 29 to License DPR-63, date of issuance 3/26/79, changed the following portions of the environmental monitoring program:

1) Aquatic

a) Mollusks, gammarus, and periphyton were deleted. Periphyton was replaced with cladaphora.

b) Bottom sediments were changed to shoreline sediments. Two on-site locations were changed to one.

2) Terrestrial

a) Monthly milk composites are no longer required. All analyses are performed on a single monthly collection.

b) Particulate filters are divided into two on-site and two off-site composites instead of one and one respectively.

III. EVALUATION OF ENVIRONMENTAL DATA

A. Lake Program

Tables 3 through 7 list the results of radiological analysis of aquatic media.

1) Cladaphora - Table 3

Cladaphora samples were collected twice during the 1979 sampling season. Collections were made on 6/19 and 8/16.

Analysis performed on the first collections indicated detectable concentrations of Mn-54, Co-58, Co-60, Cs-134, Cs-137, Ce-144. Concentrations of K-40, Ra-226, Be-7, Th-232 were also detected. The first group of nuclides is of interest in that these are normally associated with nuclear plant operations, while the second group is considered to be natural occurring. Co-137, Mn-54, Co-60 concentrations from the 03 transect were detected in quantities that may be of possible significance. These nuclides were in excess of 10 times the control station value (00 transect). Reference LER 79-021.

Analytical results on the second set of samples indicated only Cs-137 as being of possible significance. The concentrations of this nuclide on the 02 transects was 5 times the control station value; no LER was required.

2) Shoreline Sediment - Table 4

Shoreline sediments were collected on 7/3/79 and 12/3/79 at one off-site (00) and one on-site (02) location. Analytical results indicated concentrations of Cs-137, Ra-226, Th-232. The Cs-137 levels were most probably the result of fallout in that the on-site and off-site concentrations were of the same order.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

A. Lake Program (Continued)

3) Fish - Table 5

A total of 23 samples were collected during 1979. Collections were made in the spring and fall. White perch, yellow perch, and white sucker were the most abundant species with rainbow smelt present in only 2 collections.

The predominant nuclide detected was again Cs-137. Only one on-site sample (yellow perch collected 5/79 on the 02 transect) showed concentrations of possible significance. Cs-134 and Cs-137 levels were found to be greater than 2 times the control value (white perch).

4) Lake Water - Monthly and Quarterly Composites - Tables 6, 6A, 6B and 7

Lake water samples were analyzed for gross beta concentrations (6), gamma emitters (6A), solids and pH (6B), and H-3, Sr-89, and Sr-90 (7).

Analytical results for the lake water samples indicated no evidence of plant related environmental impact.

Gross beta analyses showed a few instances where indicator locations were greater than 2 times control values (OSWP). These were the NMP inlet for February and August, the NMP discharge for April, August, and September; and the JAF inlet for August.

Ge(Li) analyses showed indicator location greater than 2 times control values for Cs-137 in the March NMP inlet and discharge composites and the April, June, and December discharge samples.

H-3 concentrations were greater than 2 times the control value in the 2nd quarter NMP and JAF discharge composites.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program

The results of sample analyses for the 1979 reporting period are included in Tables 8 through 18.

1) Air Particulates - Tables 8 and 9

Tables 8 and 9 give the results of the air particulate gross beta concentrations for the 6 off-site and 9 on-site stations respectively.

The quarterly averages for gross beta concentrations (pCi/m^3) are as follows:

	Off-Sites	On-Sites
1st Qtr.	0.042	0.031
2nd Qtr.	0.106	0.072
3rd Qtr.	0.101	0.080
4th Qtr.	0.045	0.037

No significant levels of gross beta activities were detected during the 1979 collections. Normal flucuations were observed as is evident in the above listed quarterly averages. The concentration during the late spring, summer, and early fall months have historically been higher than the winter months.

2) Monthly Particulate Composites - Tables 10 and 10A

For the first 3 months of 1979, particulate filters were composited into one off-site and one on-site composite. After a ETS amendment effective April 1, 1979 (NMP-1 only), filters were broken down into two on-site and two off-site composites.

In the January and February composites, concentrations of Be-7, Co-60, Cs-137, Ce-141, Ce-144, Mn-54, Ru-103, Ru-106 were detected. In the remaining composites only Be-7, Cs-137, and Ce-144 were detected. Co-60 was also detected in March on-site and the February off-site, however, it should be noted that the associated errors were on the order of 50 to 60%.

None of the detected concentrations was of any significance. The concentrations of Cs-137, Ce-141, and Ce-144 may be attributed to sources other than the nuclear plant operation.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

3) Airborne Radioiodine (I-131) - Tables 11 and 12

The results of the I-131 (charcoal cartridge) for the six off-site and nine on-site stations are presented in Tables 11 and 12 respectively.

The quarterly averages for I-131 concentrations (pCi/m^3) are as follows:

	Off-Site	On-Site
1st Qtr.	<0.023	<0.020
2nd Qtr.	<0.027	<0.019
3rd Qtr.	<0.024	<0.018
4th Qtr.	<0.022	<0.018

During the 1979 program, no airborne radioiodine was detected at any of the 15 environmental stations.

4) TLD's (Environmental Dosimetry) - Table 13

The reported dose rates are the average of 4 independent readings. Each TLD station or location is composed of 2 individual TLD's, with each TLD containing 2 distinct dosimeters.

The TLD's are broken down into 3 groups for reporting purposes. The groups are on-site, off-site and site boundary (see TLD location maps, Figures 1 and 2). The net doses at the site boundary (site boundary average minus off-site average) were as follows:

QUARTER	SITE BOUNDARY DOSE (mrem)
1	0.0
2	0.0
3	0.6
4	0.0

The total site boundary dose for 1979 was less than 1 mrem. Dosimeters 31, 32, 39 and 40 are locations within the NMP-1 restricted area near the Radwaste Building and are influenced by waste trucks being loaded in the building or parked nearby. Dosimeters 27 through 30 are located within the FitzPatrick plant restricted area and are affected by waste trucks being loaded in or parked near the FitzPatrick Radwaste Building.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

4) Dosimeter #35, which is located in the northeastern section of the Nine Mile Unit #2 construction site, showed an increase from 16 mrem for the first quarter 1979 to 179 mrem for the second quarter 1979. An investigation as to the possible causes for the increase in exposure revealed that radiographing of welds in the general vicinity of the dosimeter location occurred during this period. The D-1 on-site environmental radiation monitor also recorded the presence of an increased dose rate during the month of June 1979 due to the radiography nearby. The radiography that was recorded by dosimeter #35 occurred from May 25 to June 27. The radiography activity was done by 3 crews on an around the clock basis using a 100 Ci Iridium source. Approximately 6722 radiographs were taken, varying from a few seconds to 5 minutes in exposure time. No increase in radiation exposure to the general public resulted from the radiographic testing.

5) Radiation Monitors - Table 14

Environmental radiation monitors are located in 10 of the 15 air monitoring environmental stations. Each of the on-site environmental monitoring stations contain a radiation monitor and in addition, the C off-site monitoring station contains a similar monitor. The radiation monitors consists of a GM detector with an associated power supply, chart recorder and trip unit. The monitor has an operating and recording range from 0.01 to 100 mrem/hr. Each radiation monitor has a small radioactive source mounted inside the detector casing to produce an on-scale reading. The design intent of the monitors is to detect possible dose rates resulting from plume releases from the plant. The monitors are not considered to be capable of high sensitivity environmental monitoring and do not detect minute fluctuation in levels of background radiation. Because of the relatively poor sensitivity of the monitors (environmentally speaking) no comparisons are made between the radiation monitor readings and the readings from environmental TLDs.

6) Milk - Tables 15 and 16

Milk samples were collected monthly from each of 5 farms and analyzed for I-131, gamma emitters, and Sr-90. I-131 results are found on Table 15. Gamma analysis and Sr-90 results are found on Table 16.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

6) Milk samples were taken beginning with the month of May and continued through the month of December. Milk sampling was not conducted from January through April because local dairy herds are not consistently on open pasture.

No concentrations of I-131 were detected in the 1979 milk samples. All I-131 analytical results were reported as lower limits of detection. The comparison of 1979 milk I-131 data showed a decrease in I-131 levels in milk from previous years during which samples were taken. It should be noted that previous data is biased by the presence of I-131 concentrations resulting from the detonation of nuclear devices in the atmosphere, while such results are not part of 1977, 1978 and 1979 data.

Potassium - 40 (K-40) was the most abundant nuclide detected in the milk samples collected in 1979. K-40 was detected in every sample and ranged in concentration from 960 to 1600 pCi/1. K-40 is a naturally occurring isotope and is found in many of the environmental media sampled.

Cesium - 137 (Cs-137) was a second nuclide found in the majority of milk sample collected. The indicator stations results showed Cs-137 concentrations ranged in activity from 3.2 to 53.0 pCi/1.

The five used as sampling locations are located within a ten mile radius of the site and are termed indicator stations. The control location (#13) is located 18 miles SSW of the site. It is considered to be outside of the influence of site releases. One of the milk sample stations (#25) located within the 10 mile radius of the site showed an elevated concentration of Cs-137 in the September sample. This level of 53.0 pCi/1, was in excess of 10 times the control value (Reference LER #79-024). In an effort to determine the source of the elevated Cs-137 levels in the milk pathway, plant and site parameters during the sample time period were studied. In addition, extra milk samples were collected past the normal grazing season and will continue to be taken until the end of the 1980 grazing season. Each of the 5 farms routinely sampled for milk were also sampled for the related media of soil, pasture grass and animal feed. Stored feed samples were also collected at each of the farms in the form of grain, hay, corn silage and haylage. Feed sample collections were made on 1/7/80, 2/12/80 and 3/3/80. At this

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

6) time no definite conclusions have been made as to the source of the identified Cs-137 in the milk samples. Investigations into the site parameters have been conducted and do not indicate that the plant is the total source of the Cs-137.

The results of completed samples are included in this report in Tables 19 through 23. Analyses of these samples show some unexpected results. The soil sample collected at the Control Station contained approximately twice the concentration of Cs-137 as did the soil from the indicator station with the highest concentration of Cs-137 in the milk (Control = 1.3 pCi/g, Indicator = 0.72 pCi/g). Pasture grass samples from the same two sample locations showed approximately equal concentrations of Cs-137. The control station (#13) grass sample contained 0.11 pCi/g and the indicator station (#25) contained a concentration of 0.14 pCi/g. Table 23 contains the results of analyses performed on the 1/7, 2/12, and 3/3/80 samples. Cs-137 was found in most samples collected at indicator location #25. Cs-137 was also detected intermittently at other indicator locations. None of the concentrations appear significant when compared with the control location. The result of the additional milk samples are presented in Table 21 and 22. The Cs-137 levels in milk from location #25 are still higher than the control location and the other indicator locations but levels are in line with past observations.

In order to obtain an independent analysis of the available data, a consultant has been contracted. The consultant will perform an evaluation of the Cesium concentrations in the environmental milk samples and the environmental signficance of these Cesium concentrations. The scope of work for the evaluation is comprised of five tasks. Task I will be a data review which addresses results from the site environmental program, plant operating and release data, radiological monitoring data from other sources and site meterological data. Task II covers the statistical evaluation of assembled data. Task III is the assessment of facility contribution to milk Cesium levels. Task IV is the evaluation of the analysis contractor performance and Task V will be the writing of a final report.

7) Milch Animal Census - Table 17

The number of milch animal locations within a ten mile radius of the plant is presented in Table 17. Self-addressed post cards are sent to each farm within a ten mile radius. After 4 weeks if no response is received, telephone contact is made.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

B. Land Program (Continued)

8) Human Food Crops - Table 18

The results of analysis performed on meat, poultry, eggs and food crops are shown in Table 18. Human food crop analysis for I-131 showed no detectable concentrations with LLD values ranging from <0.024 to <0.030 pCi/g (wet). All analysis for I-131 were performed within one half-life. Slight traces of Cs-137 were found in 7 of the meat samples collected. Cs-137 was also detected in one produce sample. The detected Cs-137 levels are attributed to atmospheric fallout and have been detected in similar concentrations in previous years.

C. Exceptions to the Program

1) Meat samples were collected at only one location during the spring sampling period. Attempts were made to collect the required samples from 4/23/79 to 6/6/79. Efforts to identify possible sample locations were made by weekly phone calls to the local meat market and individual farmers.

The first meat sample was obtained on 5/24/79 and a second meat sample was obtained on 7/3/79. The second sample was a pork sample being butchered because of poor health and was obtained outside the required sampling time frame (spring sample period of 4/23/79 to 6/6/79). A third meat sample was collected on 8/2/79 which was also outside the spring sample period.

The difficulty in obtaining the required number of samples may be attributed to several factors. First the number of animals raised for meat and located within the ten mile radius of the plant is not extensive. Secondly, butchering of animals is not always performed at the local meat market. Third, and most significant is the fact that the vast majority of meat is butchered in the fall so animals can graze in pasture for the summer to economically increase the meat yield.

The collection of spring meat samples has historically been a difficult sample media to obtain due to seasonal unavailability.

III. EVALUATION OF ENVIRONMENTAL DATA (Continued)

C. Exceptions to the Program (Continued)

2) On 11/15/79 at 0830 electrical power was lost to seven of the nine on-site environmental stations (D2, E, F, H, I, J, K). On-site power was restored at 1145. This resulted in a total power loss of 3 hours and 15 minutes. The power loss was due to a planned power line interruption to facilitate the transport of the 9 Mile Point Unit No. 2 reactor vessel to the construction site. The interruption of power to the environmental station was required so the power lines crossing the delivery path of the reactor vessel could be temporarily removed allowing safe passage of the moving equipment.

A review of station and site releases during this time period showed no increase or unusual variation from normal operating conditions. As immediate corrective action, each effected monitor was inspected to ensure that power had been successfully restored and the cabinet equipment was functioning as intended. The environmental significance of this event is considered to be minor, and as having no effect on the quality of the site environmental program.

3) The required milk I-131 analysis sensitivity of 0.5 pCi/l was exceeded on five analyses performed during the 1979 program. Analyses results which exceeded the required sensitivity ranged from 0.532 to 0.69 pCi/l. The lower sensitivities were not routine and represent only twelve percent of the analyses performed. The decrease in sensitivity was the result of two factors, the first being the use of a 4.66 sigma confidence level in calculating the LLD and secondly, the result of periodic low chemical yield (<70%) in the operation process.

Corrective action has been identified and initiated by the analysis contractor.

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Water		pCi/l				
Monthly Composite	NMP Inlet	Mn-54	<2.1	<1.5	<1.6	<1.5
		Fe-59	<5.0	<5.1	<5.3	<5.9
		Co-58	<2.5	<2.0	<2.8	<2.1
		Co-60	<3.6	<3.1	<3.1	<3.1
		Zn-65	<4.4	<3.9	<4.0	<5.0
		Cs-134	<2.1	<2.1	<1.6	<2.1
		Cs-137	<3.1	<2.1	<2.1	<1.6
		Ba-La-140	<8.9	<21.3	<26.0	<16.6
		Gross Beta	5.2	3.5	2.6	3.0
	NMP Discharge	Mn-54	<1.6	<1.5	<1.7	<1.7
		Fe-59	<6.2	<6.9	<7.3	<6.4
		Co-58	<1.8	<2.9	<2.1	<2.1
		Co-60	<3.7	<3.7	<3.6	<3.1
		Zn-65	<5.1	<4.0	<5.7	<5.0
		Cs-134	<2.2	<2.1	<2.7	<2.1
		Cs-137	<3.2	<4.4	<3.2	<2.9
		Ba-La-140	<23.4	<21.6	<24.5	<15.0
		Gross Beta	5.5	7.5	5.1	4.6

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Water		pCi/l				
Monthly Composite	JAF Inlet	Mn-54	<1.5	<1.5	<1.7	<1.7
		Fe-59	<6.9	<6.6	<7.8	<5.6
		Co-58	<2.1	<2.9	<2.2	<1.9
		Co-60	<3.1	<3.7	<3.1	<4.2
		Zn-65	<4.5	<4.6	<5.1	<5.0
		Cs-134	<2.1	<1.6	<1.6	<1.6
		Cs-137	<1.6	<1.6	<1.6	<1.6
		Ba-La-140	<20.4	<28.0	<27.5	<15.0
		Gross Beta	3.3	3.0	2.8	2.5
	JAF Discharge	Mn-54	<2.1	<2.3	<1.7	<2.1
		Fe-59	<5.8	<7.4	<9.1	<4.8
		Co-58	<2.1	<2.2	<2.2	<1.9
		Co-60	<3.7	<3.2	<3.1	<3.1
		Zn-65	<3.4	<4.1	<5.2	<4.2
		Cs-134	<1.6	<2.1	<2.2	<1.6
		Cs-137	<1.6	<2.6	<1.6	<2.1
		Ba-La-140	<20.4	<25.6	<32.9	<15.3
		Gross Beta	3.2	3.8	<2.3	3.1

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Water		pCi/l				
Monthly Composite	Raw City Water	Mn-54	<2.0	<2.2	<2.2	<1.7
		Fe-59	<4.3	<6.3	<5.6	<5.5
		Co-58	<3.8	<2.1	<2.0	<2.0
		Co-60	<3.1	<2.7	<3.7	<3.6
		Zn-65	<3.8	<4.6	<4.6	<3.9
		Cs-134	<2.0	<1.6	<1.6	<1.6
		Cs-137	<1.9	<1.6	<2.1	<2.0
		Ba-La-140	<10.6	<28.7	<34.6	<14.7
		Gross Beta	2.0	3.5	<2.2	2.5

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Airborne		pCi/m^3				
Particulate Filters	On-Sites	Gross Beta				
	D_1		0.036	0.079	0.089	0.040
	D_2		0.035	0.072	0.074	0.043
	E		0.039	0.081	0.096	0.049
	F		0.041	0.082	0.079	0.043
	G		0.040	0.083	0.103	0.044
	H		0.027	0.060	0.065	0.032
	I		0.025	0.072	0.093	0.035
	J		0.016	0.050	0.056	0.033
	K		0.019	0.070	0.067	0.017
	Off-Sites.					
	C		0.076	0.096	0.095	0.045
	D_1		0.037	0.079	0.090	0.045
	D_2		0.036	0.094	0.105	0.044
	E		0.037	0.099	0.097	0.047
	F		0.035	0.114	0.114	0.046
	G		0.034	0.155	0.104	0.044

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Airborne						
Charcoal Cartridge	On-Sites	I-131 pCi/m^3				
	D_1		<0.030	<0.027	<0.028	<0.031
	D_2		<0.031	<0.033	<0.028	<0.021
	E		<0.021	<0.021	<0.022	<0.026
	F		<0.025	<0.025	<0.021	<0.020
	G		<0.022	<0.022	<0.021	<0.018
	H		<0.019	<0.015	<0.015	<0.014
	I		<0.012	<0.010	<0.010	<0.010
	J		<0.010	<0.011	<0.011	<0.011
	K		<0.012	<0.010	<0.009	<0.008
	Off-Sites					
	C		<0.022	<0.022	<0.022	<0.023
	D		<0.021	<0.021	<0.022	<0.026
	D_2		<0.020	<0.022	<0.022	<0.020
	E		<0.020	<0.021	<0.021	<0.020
	F		<0.027	<0.027	<0.028	<0.021
	G		<0.027	<0.050	<0.027	<0.024
TLDs	Off-Sites	Direct Radiation mrem/qtr	10	10	14	14
	Site Boundary		10	9	15	14
	On-Sites		44	53	43	54

ENVIRONMENTAL SAMPLE SUMMARY

Medium/Sample	Location	Map #*	Nuclide pCi/l	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Ingestion							
Milk	1	4	I-131	NS	<0.3	<0.5	<0.4
			K-40	NS	1045.0	1100.0	1500.0
			Cs-137	NS	<4.0	<5.6	<5.2
			Sr-90	NS	4.4	4.3	<6.1
	2	13	I-131	NS	<0.4	<0.4	<0.4
			K-40	NS	1045.0	1197.0	1567.0
			Cs-137	NS	<3.1	<3.6	<4.7
			Sr-90	NS	4.6	5.6	<4.0
	3	14	I-131	NS	<0.4	<0.5	<0.3
			K-40	NS	1045.0	1233.0	1500.0
			Cs-137	NS	<4.0	<4.5	<3.7
			Sr-90	NS	3.2	3.4	<2.7
	4	16	I-131	NS	<0.2	<0.5	<0.4
			K-40	NS	1040.0	1153.0	1500.0
			Cs-137	NS	<5.4	5.9	<5.2
			Sr-90	NS	5.4	5.2	<12.2
	5	25	I-131	NS	<0.3	<0.5	<0.5
			K-40	NS	1045.0	1433.0	1500.0
			Cs-137	NS	6.1	24.8	14.5
			Sr-90	NS	6.3	6.0	<8.9
	6	8	I-131	NS	<0.3	<0.4	<0.5

NS = Not Sampled (not in grazing season)

*Figure 5

TABLE 1

SAMPLE COLLECTION AND ANALYSIS

SITE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A. LAKE PROGRAM

	MEDIA	ANALYSIS	FREQUENCY	LOCATIONS (2)	
1.	Fish	GSA, Sr-89 & Sr-90	2/yr	2 Onsite	1 Offsite
2.	Cladophora	GSA	In Season	2 Onsite	1 Offsite
3.	Lake Water	GSA H-3, Sr-89, Sr-90	M Comp. Qtr. Comp.	3(3)	
4.	Sediment	GSA	Semi-Annual	Dam Shoreline	1 Offsite

NOTES:

(1) Onsite samples collected in the vicinity of discharges, offsite samples collected at a distance of at least five miles from site.

(2) The three lake water samples to include Nine Mile Point Uni 1 intake water, James A. FitzPatrick intake water, and Oswego city raw water.

TABLE 2

SAMPLE COLLECTION AND ANALYSIS

SITE RADIOLOGICL ENVIRONMENTAL MONITORING PROGRAM

B. LAND PROGRAM

	MEDIA	ANALYSIS	FREQUENCY	NO. OF LOCATIONS	LOCATIONS
1.	Air Particulates	GB GSA	W M Comp(4)	At least 10	7 Onsite 6 Offsite
2.	Soil	GSA, Sr-90	Every 3 years	13	7 Onsite 6 Offsite
3.	TLD	Gamma Dose	Qtr.	20	14 Onsite 6 Offsite
4.	Radiation Monitors	Gamma Dose	C	At least 7	7 Onsite 1 Offsite
5.	Airborne - I-131	GSA	W	At least 10	7 Onsite 6 Offsite
6.	Milk	I GSA, Sr-90	M(5) M	4(5)	(6)
7.	Human Food Crops	GSA, I-131	A	3	(6)
8.	Meat, Poultry,	GSA Edible Portions	SA	3	(6)

NOTES: (Cont.)

(4) Onsite samples counted as two composites: Offsite samples counted as two composites; any high gross beta count samples counted separately (not included in composite).
(5) Frequency applied only during grazing season.
(6) Samples to be collected from farms within a 10-mile radius having the highest potential concentrations of radionuclides.

FIGURE 1

OFF-SITE ENVIRONMENTAL STATION

AND

TLD LOCATIONS *

*TLD at each station

Revised to January 1, 1974

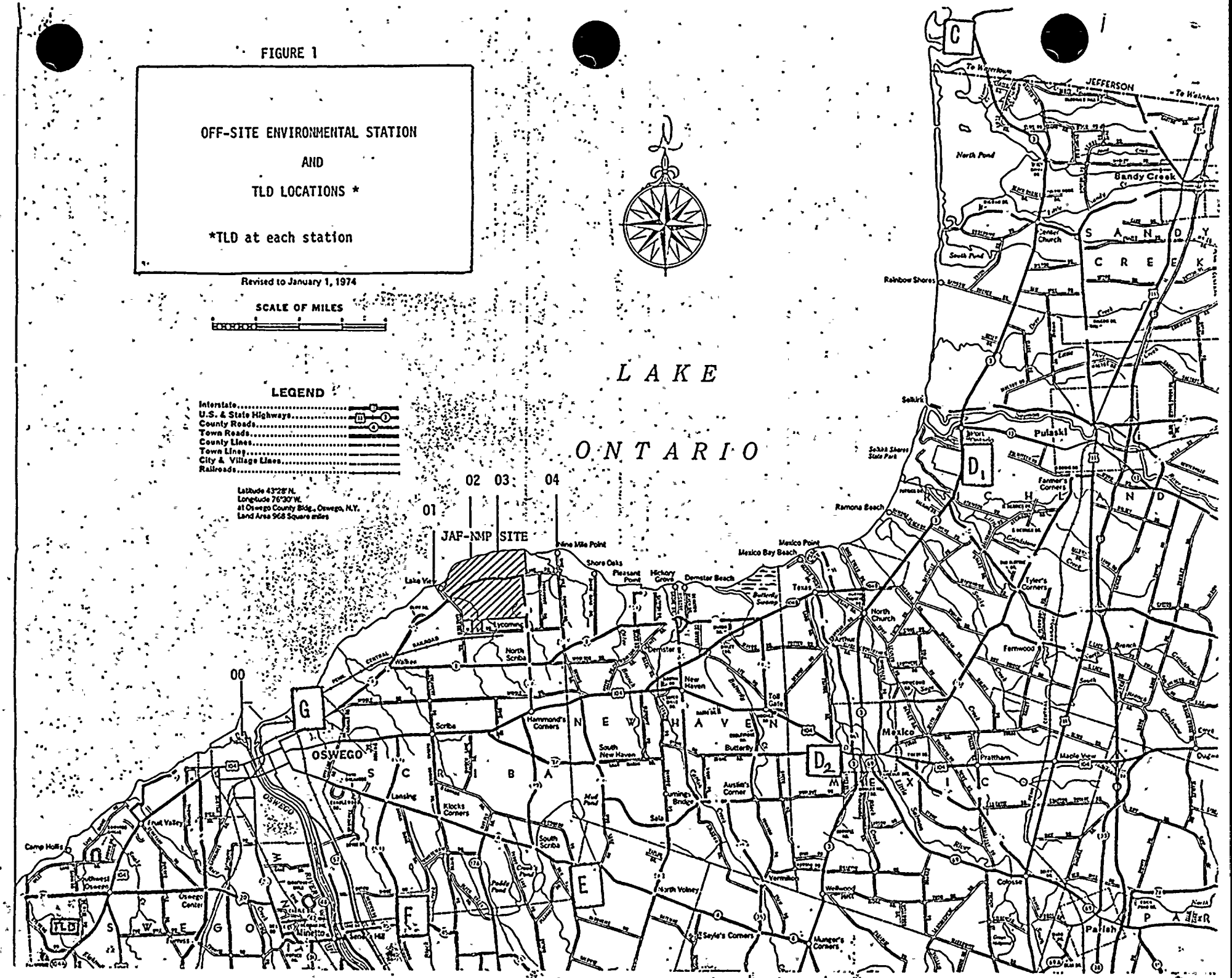
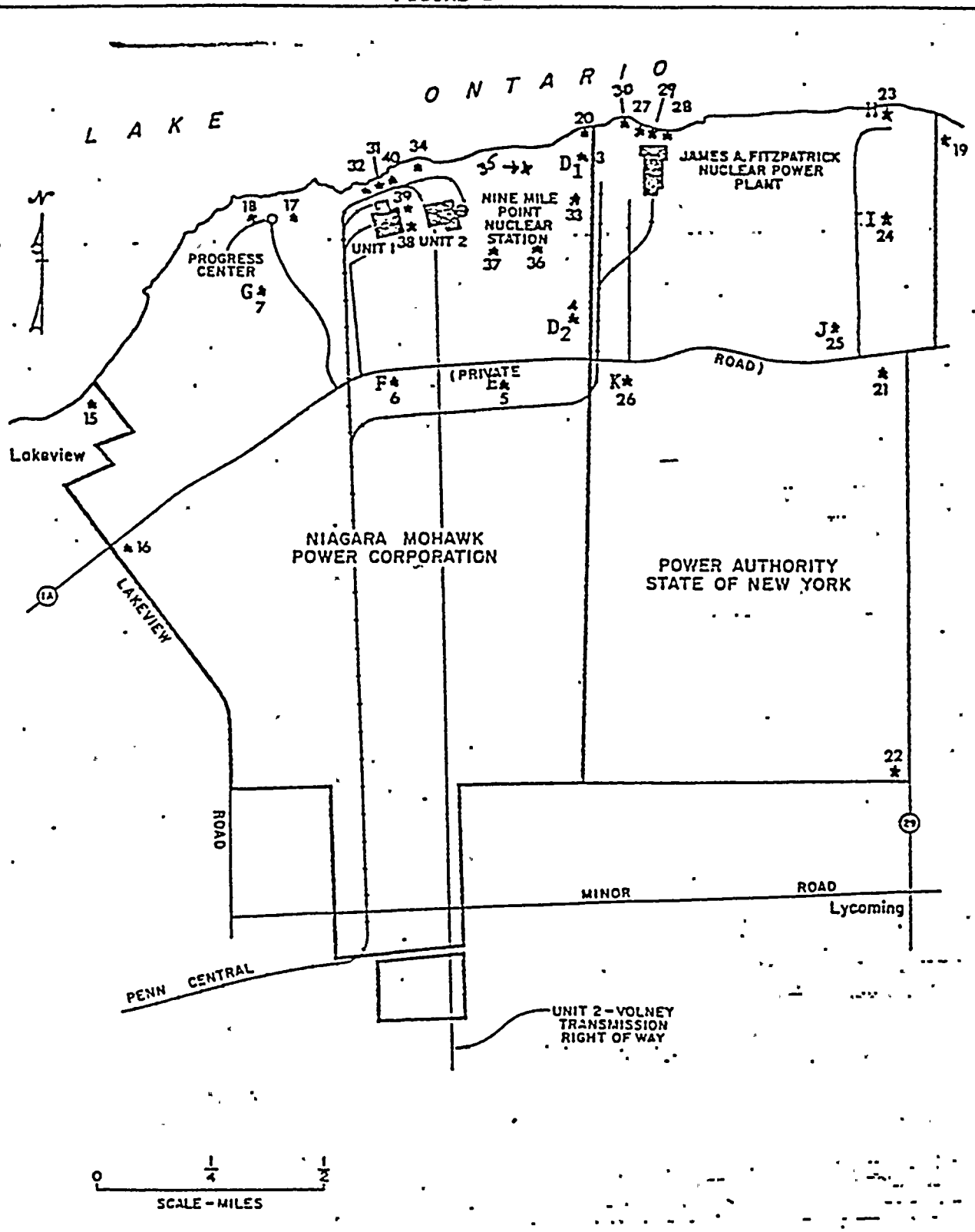


FIGURE 2



SITE VICINITY MAP
ON-SITE ENVIRONMENTAL STATION AND TLD LOCATIONS
*-TLD's
Letters - Stations

Figure 3

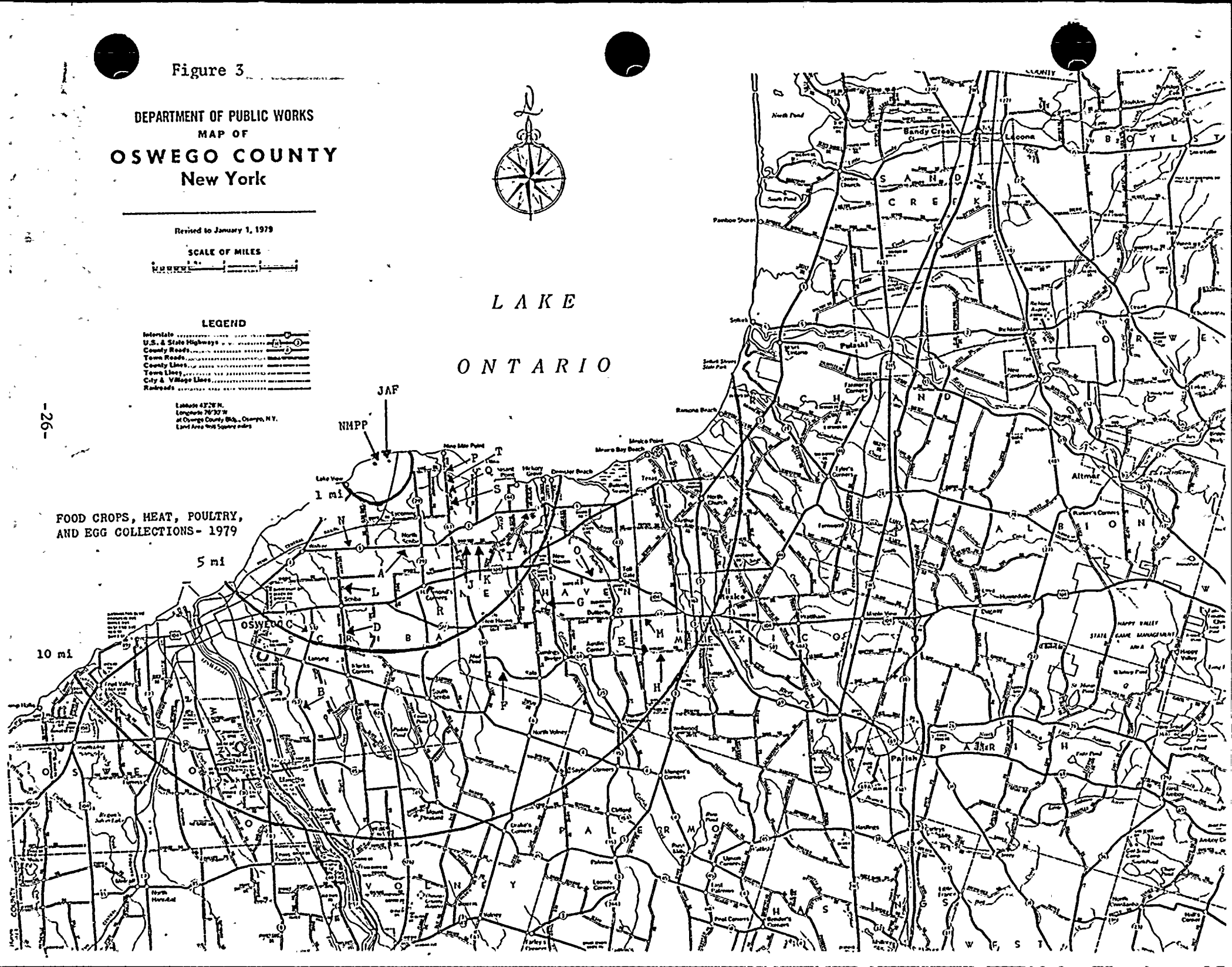

DEPARTMENT OF PUBLIC WORKS
MAP OF
OSWEGO COUNTY
New York
Revised to January 1, 1979
SCALE OF MILES
LEGEND
Interstate
U.S. & State Highways
County Roads
Town Roads
County Lines
Town Lines
City & Village Lines
Railroads
Latitude 43°28' N.
Longitude 76°32' W
at Oswego County Bldg., Oswego, N.Y.
Land Area 968 Square miles
LAKE
ONTARIO
JAF
NMPP
1 mi
5 mi
10 mi
FOOD CROPS, MEAT, POULTRY,
AND EGG COLLECTIONS- 1979
OSWEGO
Fulton
Pulaski
Altmar
Parish
Lacona
Sandy Creek
North Pond
Pamboo Shore
Mexico Point
Mexico Bay Beach
Ramona Beach
Lake View
Selkirk Shores State Park
Happy Valley State Game Management Area
SANDY CREEK
BOYLSTON
ORWELL
HANNIBAL
ALBION
PALERMO
PARISH
WEST MONROE
VOLNEY
SCRIBA
HASTINGS
GRANBY
NEW HAVEN
MINETTO
CONSTANTIA
CICERO
CLAY
SCHROEPPEL
NORTH HANNIBAL
NORTH VOLNEY
PHOENIX
CENTRAL SQUARE
LYSANDER
CAUGHDENOY
FULTON
HANNIBAL
COUNTY

Figure 4

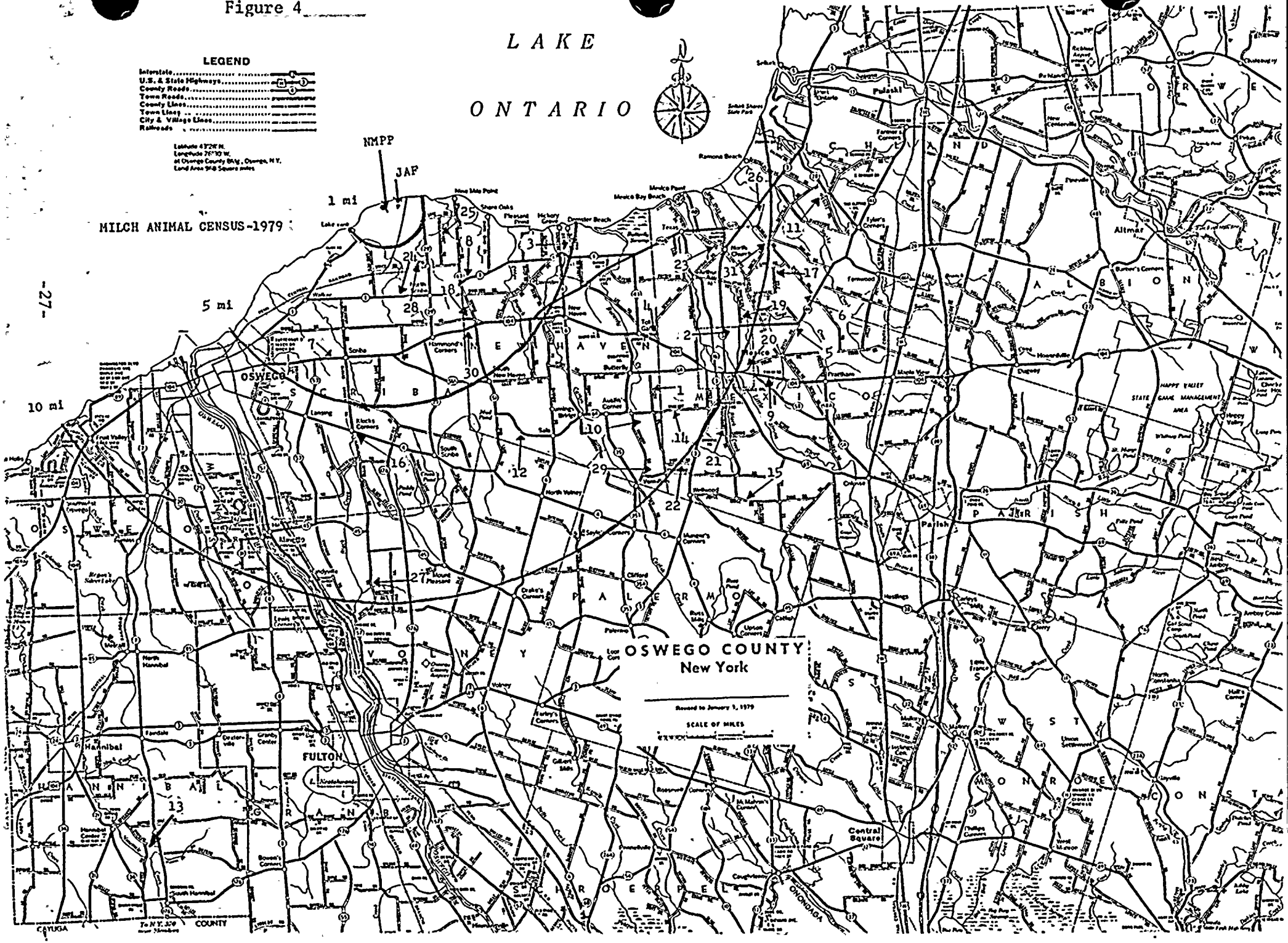

LAKE
ONTARIO
LEGEND
Interstate
U.S. & State Highways
County Roads
Town Roads
County Lines
Town Lines
City & Village Lines
Railroads
NMPP
JAF
1 mi
5 mi
10 mi
MILCH ANIMAL CENSUS-1979
OSWEGO COUNTY
New York
SCALE OF MILES
OSWEGO
FULTON
Hannibal
Central Square
Altmar
Palermo
Parish
CAYUGA
COUNTY

TABLE 3

CONCENTRATIONS OF GAMMA EMITTERS IN CLADAPHORA SAMPLES

Results in Units of pCi/g(wet) ± 2 sigma

COLLECTION SITE	NUCLIDES FOUND	6-19-79	8-16-79
Off-Site	Be-7	0.13±0.09	0.3±0.2
00	K-40	5.6±0.6	6.3±0.6
	Mn-54	<0.008	<0.02
	Co-58	<0.01	<0.02
	Co-60	0.010±0.008	<0.03
	Cs-134	<0.008	<0.02
	Cs-137	0.011±0.006	0.05±0.02
	Ce-144	<0.05	<0.1
	Ra-226	<0.02	0.15±0.02
	Th-232	<0.03	0.15±0.04
JAF	Be-7	0.83±0.09	<0.1
03	K-40	4.5±0.5	3.0±0.3
	Mn-54	0.12±0.01	<0.01
	Co-58	<0.01	<0.01
	Co-60	0.32±0.03	<0.02
	Cs-134	0.033±0.008	<0.01
	Cs-137	0.24±0.02	0.026±0.009
	Ce-144	0.20±0.04	<0.08
	Ra-226	0.05±0.01	<0.03
	Th-232	0.05±0.02	<0.05
NMPP	Be-7	0.3±0.1	0.4±0.1
02	K-40	5.8±0.6	4.2±0.4
	Mn-54	<0.01	<0.01
	Co-58	<0.01	<0.01
	Co-60	0.07±0.01	0.10±0.01
	Cs-134	<0.01	0.028±0.009
	Cs-137	0.10±0.01	0.25±0.03
	Ce-144	0.06±0.03	<0.05
	Ra-226	<0.03	0.06±0.01
	Th-232	<0.05	0.07±0.03

TABLE 4

CONCENTRATIONS OF Sr-90 AND GAMMA EMITTERS IN SHORELINE SEDIMENT SAMPLES

Results in Units of PCi/g(dry) ± 2 sigma

COLLECTION SITE	COLLECTION DATE	Sr-90	GAMMA EMITTERS K-40	Co-60	Cs-134	Cs-137	Ra-226	Th-232
Off-Site 00	7-03-79	0.04±0.01	13±1	<0.06	<0.06	0.22±0.05	0.48±0.06	0.4±0.1
	12-03-79	<0.005	14±1	<0.08	<0.06	<0.05	0.6±0.1	0.5±0.2
NMPP 02	7-03-79	<0.01	18±2	<0.06	<0.05	0.15±0.04	0.43±0.05	0.5±0.1
	12-03-79	<0.005	20±2	<0.06	<0.06	<0.06	0.67±0.07	0.6±0.1

TABLE 5

CONCENTRATIONS OF STRONTIUM-89* AND -90, AND GAMMA EMITTERS IN FISH SAMPLES

Results in Units of pCi/g(wet) ± 2 sigma

SAMPLE DATE	SAMPLE TYPE	Sr-89	Sr-90	K-40	Cs-134	Cs-137
			FITZPATRICK (03)			
May 1979	White Perch	<0.02	0.039±0.008	1.6±0.3	<0.01	0.08±0.02
	Yellow Perch	<0.03	0.011±0.006	2.2±0.4	0.08±0.02	0.55±0.06
	Rainbow Smelt	<0.02	0.032±0.005	1.5±0.3	<0.01	0.016±0.009
	White Sucker	<0.02	0.014±0.004	1.9±0.4	<0.02	0.02±0.01
October 1979	White Perch	<0.01	0.012±0.003	2.9±0.7	<0.05	0.08±0.04
	Yellow Perch	<0.01	0.016±0.004	3.4±0.7	<0.03	0.08±0.03
	White Sucker	<0.01	<0.005	3.5±0.7	<0.05	0.05±0.03
			NINE MILE POINT (02)			
May 1979	Smallmouth Bass	<0.02	0.023±0.005	1.8±0.3	<0.02	0.07±0.02
	White Perch	<0.02	0.031±0.006	1.6±0.3	<0.02	0.08±0.02
	White Sucker	<0.05	0.03±0.01	1.6±0.5	<0.02	<0.03
	Lake Trout	(1)	(1)	1.8±0.5	<0.02	0.04±0.02
October 1979	White Perch #1	<0.009	0.006±0.003	3.2±0.7	<0.05	0.06±0.04
	White Perch #2	<0.009	0.009±0.003	2.7±0.6	<0.03	<0.05
	Yellow Perch #1	<0.008	0.008±0.003	2.5±0.6	<0.03	<0.05
	Yellow Perch #2	<0.01	0.009±0.003	3.3±0.8	<0.05	0.09±0.04
	White Sucker	<0.007	<0.004	3.8±0.8	<0.05	<0.08
			OSWEGO (00)			
May 1979	Burbot	<0.008	<0.004	1.7±0.3	<0.01	0.03±0.01
	White Perch	<0.02	0.028±0.008	1.9±0.3	<0.01	0.06±0.01
	Rainbow Smelt	0.09±0.02	0.033±0.003	2.0±0.3	<0.01	0.03±0.01
	White Sucker	<0.01	0.013±0.003	2.0±0.3	<0.006	0.04±0.02
October 1979	White Perch	<0.01	0.008±0.003	2.4±0.7	<0.05	<0.05
	Yellow Perch	<0.01	0.009±0.004	3.8±0.8	<0.05	<0.06
	White Sucker	0.04±0.02	<0.01	3.0±0.8	<0.03	<0.05

* Sr-89 results are corrected to sample stop date.

(1) Sample was lost in analysis.

TABLE 6

CONCENTRATIONS OF BETA EMITTERS IN LAKE WATER SAMPLES

Results in Units of pCi/l ± 2 sigma

STATION NUMBER	1-01-79 to 1-31-79	2-01-79 to 2-28-79	3-01-79 to 3-31-79	4-01-79 to 4-30-79	5-01-79 to 5-31-79	6-01-79 to 6-30-79
FN-SWA-JAF-Discharge	3.6±0.7	2.6±0.6	3.5±0.7	3.4±0.8	4.3±0.7	3.7±0.7
FN-SWA-JAF-Inlet	3.9±0.7	3.1±0.7	2.9±0.7	2.1±0.7	3.2±0.7	3.6±0.8
FN-SWA-NMP-Discharge	3.1±0.7	2.9±0.6	11±1	7.3±0.9	8.6±1.0	6.6±0.9
FN-SWA-NMP-Inlet	3.6±0.7	6.3±0.8	5.8±0.8	3.0±0.7	4.5±0.8	3.0±0.7
FN-SWA-OSWP	3.9±0.7	2.9±0.6	3.0±0.7	2.1±0.7	4.8±0.8	3.6±0.8

STATION NUMBER	7-01-79 to 7-31-79	8-01-79 to 8-31-79	9-01-79 to 9-28-79	10-01-79 to 10-31-79	11-01-79 to 11-30-79	12-01-79 to 12-28-79
FN-SWA-JAF-Discharge	3.0±0.7	<0.9	3.1±0.7	3.4±0.7	2.4±0.7	3.5±0.7(1)
FN-SWA-JAF-Inlet	3.3±0.7	2.3±0.7	2.7±0.7	2.8±0.6	2.2±0.7	2.5±0.6(1)
FN-SWA-NMP-Discharge	6.4±0.9	4.2±0.8	4.6±0.8	5.0±0.8	3,2±0.7	5.5±0.8
FN-SWA-NMP-Inlet	3.7±0.7	2.0±0.7	2.2±0.7	3.2±0.7	3.1±0.7	2.8±0.7
FN-SWA-OSWP	3.6±0.7	<0.9	2.1±0.7	2.5±0.6	2.2±0.7	2.9±0.7

(1) Sample collection dates were 12-28-79 to 1-02-80.

TABLE 6A

CONCENTRATIONS OF GAMMA EMITTERS IN LAKE WATER SAMPLES

Results in Units of pCi/l ± 2 sigma

STATION NUMBER	NUCLIDE	1-01-79 to 1-31-79	2-01-79 to 2-28-79	3-01-79 to 3-31-79	4-01-79 to 4-30-79	5-01-79 to 5-31-79	6-01-79 to 6-30-79
FN-SWA-JAF-Discharge		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-JAF-Inlet		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-NMP-Discharge	Cs-137	<1.6	<1.6	6.5±2.1	4.7±2.5	<3.1	5.4±2.4
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-NMP-Inlet	K-40	<31	<31	97±40	<16	<31	<31
	Cs-137	<1.6	<1.6	6.0±2.1	<1.6	<3.1	<1.6
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-OSWP	Cs-137	<1.6	<1.6	2.5±1.8	<1.6	<1.6	<1.6
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD

STATION NUMBER	NUCLIDE	7-01-79 to 7-31-79	8-01-79 to 8-31-79	9-01-79 to 9-28-79	10-01-79 to 10-31-79	11-01-79 to 11-31-79	12-01-79 to 12-28-79
FN-SWA-JAF-Discharge		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD(1)
FN-SWA-JAF-Inlet		All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD(1)
FN-SWA-NMP-Discharge	Cs-137	<4.7	3.4±1.7	<1.6	<3.1	<1.6	4.0±2.1
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-NMP-Inlet	K-40	<31	<31	<31	<31	<47	<31
	Cs-137	<3.1	<1.6	<1.6	<1.6	<1.6	<1.6
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD
FN-SWA-OSWP	Cs-137	<1.6	<3.1	<1.6	<1.6	<3.1	<1.2
	Others	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD	All<LLD

(1) Sample collection dates were 12-01-79 to 1-02-80.

Typical LLDs (pCi/l): Mn-54 2, Zn-65 5, Fe-59 5, Cs-134 2, Co-58 2, Co-60 3

TABLE 6B

CANAL WATER DATA

MONTHLY COMPOSITE ANALYSIS

	INLET CANAL			DISCHARGE CANAL		
MONTH	pH	DISSOLVED SOLIDS PPM	SUSPENDED SOLIDS PPM	pH	DISSOLVED SOLIDS PPM	SUSPENDED SOLIDS PPM
January	7.8	370	9.3	7.8	381	14.9
February	7.8	235	8.9	8.0	241	9.9
March	7.5	191	2.0	7.8	203	1.0
April	7.8	206	4.7	7.8	194	8.6
May	7.8	208	4.0	7.9	173	10.0
June	7.8	193	5.0	7.9	175	1.0
July	7.8	172	3.3	7.5	200	2.0
August	7.8	183	3.6	7.7	209	2.0
September	7.8	212	1.2	7.7	223	3.0
October	7.4	185	1.0	7.5	207	2.9
November	7.6	174	1.5	7.7	187	3.6
December	7.4	180	4.8	7.1	195	8.1

TABLE 7

CONCENTRATIONS OF TRITIUM AND STRONTIUM-89* AND -90 IN LAKE WATER (QUARTERLY COMPOSITE SAMPLES)

Results in Units of pCi/l ± 2 sigma

STATION CODE	DATE	TRITIUM	Sr-89	Sr-90
FN-SWA-JAF-Discharge	1-01-79 to 3-31-79	213±170	<0.7	1.2±0.3
	4-01-79 to 6-30-79	449±160	<1.5	1.0±0.4
	7-01-79 to 9-28-79	<125	<1.1	0.6±0.3
	9-30-79 to 1-02-80	305±100	<0.9	1.0±0.4
FN-SWA-JAF-Inlet	1-01-79 to 3-31-79	234±170	<0.7	1.1±0.3
	4-01-79 to 6-30-79	227±110	<1.6	1.2±0.5
	7-01-79 to 9-28-79	276±79	<1.0	0.4±0.3
	9-30-79 to 1-02-80	176±130	<0.9	1.3±0.3
FN-SWA-NMP-Discharge	1-01-79 to 3-31-79	250±170	<0.7	1.2±0.3
	4-01-79 to 6-30-79	519±160	<1.4	1.1±0.4
	7-01-79 to 9-28-79	189±120	1.0±0.7	<0.6
	9-30-79 to 12-28-79	275±100	<0.8	0.9±0.3

TABLE 7 (cont.)

CONCENTRATIONS OF TRITIUM AND STRONTIUM-89* AND -90 IN LAKE WATER (QUARTERLY COMPOSITE SAMPLES)

Results in Units of pCi/l ± 2 sigma

STATION CODE	DATE	TRITIUM	Sr-89	Sr-90
FN-SWA-NMP-Inlet	1-01-79 to 3-31-79	204±170	<0.8	0.7±0.3
	4-01-79 to 6-30-79	197±110	<0.9	0.6±0.3
	7-01-79 to 9-28-79	272±79	<1.0	0.5±0.3
	9-30-79 to 12-28-79	286±100	<0.8	0.9±0.3
FN-SWA-OSWP	1-01-79 to 3-31-79	<273	<0.8	1.1±0.3
	4-01-79 to 6-30-79	174±110	<1.2	0.6±0.4
	7-03-79 to 9-27-79	294±79	0.8±0.7	<0.5
	9-30-79 to 12-28-79	308±100	0.6±0.6	0.7±0.4

* Sr-89 results are corrected for decay to sample stop dates.

TABLE 8
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - OFF SITE STATIONS
GROSS BETA ACTIVITY $pCi/m^3 \pm 2\sigma$

WEEK	DATE	LOCATION C	D_1	D_2	E	F	G
1	1-9-79	0.068±0.007	0.074±0.008	--	0.069±0.007	0.062±0.007	0.067±0.008
2	1-16-79	0.022±0.004	0.036±0.005	0.034±0.004	0.040±0.005	0.033±0.005	0.033±0.005
3	1-23-79	0.029±0.004	0.037±0.005	0.041±0.005	0.044±0.005	0.032±0.005	0.030±0.005
4	1-30-79	0.012±0.003	0.012±0.003	0.015±0.003	0.012±0.003	0.013±0.004	0.014±0.004
5	2-6-79	0.024±0.004	0.025±0.004	0.028±0.004	0.026±0.004	0.026±0.005	0.027±0.005
6	2-13-79	0.035±0.004	0.035±0.004	0.039±0.005	0.037±0.004	0.028±0.005	0.042±0.006
7	2-20-79	0.045±0.005	0.040±0.005	0.042±0.005	0.042±0.005	0.044±0.005	0.045±0.006
8	2-27-79	0.038±0.005	0.036±0.005	0.037±0.005	0.038±0.004	0.037±0.005	0.035±0.005
9	3-6-79	0.036±0.004	0.026±0.004	0.032±0.004	0.025±0.004	0.025±0.005	0.024±0.005
10	3-13-79	0.039±0.005	0.033±0.004	0.032±0.004	0.035±0.004	0.034±0.005	0.034±0.006
11	3-20-79	0.072±0.006	0.064±0.006	0.065±0.006	0.047±0.005	0.056±0.006	0.046±0.006
12	3-27-79	0.025±0.004	0.025±0.004	0.024±0.004	0.030±0.005	0.030±0.005	0.022±0.005
13	4-3-79	0.042±0.005	0.032±0.005	0.041±0.005	0.036±0.004	0.034±0.005	0.028±0.006
14	4-10-79	0.037±0.004	0.035±0.005	0.038±0.005	0.038±0.005	0.033±0.005	0.035±0.006
15	4-17-79	0.045±0.005	0.035±0.005	0.035±0.004	0.036±0.004	0.032±0.005	0.036±0.006
16	4-24-79	0.098±0.007	0.084±0.007	0.124±0.008	0.138±0.008	0.283±0.017	0.115±0.009
17	5-1-79	0.055±0.006	0.062±0.006	0.075±0.006	0.074±0.006	0.066±0.007	0.056±0.007
18	5-8-79	0.123±0.008	0.077±0.006	0.089±0.007	0.096±0.007	0.094±0.008	0.096±0.008
19	5-15-79	0.082±0.006	0.091±0.007	0.099±0.007	0.101±0.008	0.135±0.009	**
20	5-22-79	0.051±0.005	0.048±0.005	0.061±0.006	0.057±0.005	0.055±0.006	--
21	5-30-79	0.060±0.005	0.046±0.005	0.043±0.004	0.046±0.004	0.053±0.005	--
22	6-5-79	0.179±0.009	0.136±0.009	0.208±0.010	0.209±0.011	0.238±0.012	--
23	6-12-79	0.043±0.005	0.044±0.005	0.044±0.005	0.060±0.005	0.057±0.006	--
24	6-19-79	0.209±0.009	0.165±0.009	0.204±0.009	0.233±0.010	0.205±0.011	0.703±0.058
25	6-26-79	0.174±0.009	0.149±0.008	0.136±0.008	0.137±0.008	0.174±0.010	0.121±0.008
26	7-3-79	0.097±0.007	0.061±0.006	0.063±0.006	0.058±0.006	0.059±0.006	0.074±0.007

--Pump Off - TV Interference Test

**Vandalism

TABLE 8 (CONT.)
NMP - JAF SITE
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - OFF SITE STATIONS
GROSS BETA ACTIVITY $pCi/m^3 \pm 2\sigma$

		LOCATION					
WEEK	DATE	C	D_1	D_2	E	F	G
27	7-10-79	0.168±0.009	0.133±0.008	0.150±0.008	0.159±0.009	0.197±0.010	0.166±0.010
28	7-16-79	0.132±0.007	0.140±0.008	0.132±0.008	0.128±0.008	0.104±0.008	0.116±0.008
29	7-24-79	0.159±0.009	0.167±0.009	0.190±0.009	0.214±0.010	0.199±0.010	0.151±0.009
30	7-31-79	0.150±0.008	0.132±0.008	0.183±0.009	0.165±0.009	0.167±0.010	0.166±0.010
31	8-7-79	0.044±0.005	0.046±0.005	0.062±0.006	0.046±0.005	0.060±0.006	0.046±0.006
32	8-14-79	0.090±0.007	0.010±0.003	0.125±0.008	0.101±0.007	0.103±0.008	0.092±0.008
33	8-21-79	0.126±0.007	0.131±0.006	0.188±0.009	0.143±0.008	0.204±0.011	0.151±0.009
34	8-28-79	0.090±0.006	0.092±0.007	0.122±0.008	0.096±0.006	0.102±0.008	0.101±0.007
35	9-4-79	0.095±0.006	0.089±0.006	0.108±0.007	0.110±0.007	0.104±0.008	0.102±0.007
36	9-11-79	0.078±0.006	0.096±0.007	0.031±0.004	0.023±0.003	0.072±0.007	**
37	9-18-79	0.077±0.006	0.087±0.006	0.024±0.004	0.022±0.004	0.114±0.008	**
38	9-25-79	0.068±0.005	0.079±0.006	0.095±0.006	0.091±0.006	0.108±0.008	0.093±0.007
39	10-2-79	0.040±0.004	0.039±0.004	0.035±0.004	0.035±0.004	0.034±0.005	0.039±0.005
40	10-9-79	0.021±0.003	0.023±0.004	0.023±0.003	0.023±0.004	0.025±0.005	0.025±0.004
41	10-16-79	0.047±0.005	0.054±0.005	0.060±0.006	0.045±0.005	0.038±0.005	0.038±0.005
42	10-23-79	0.059±0.006	0.058±0.006	0.069±0.006	0.068±0.006	0.062±0.007	0.050±0.006
43	10-30-79	0.017±0.003	0.021±0.004	0.018±0.003	0.010±0.003	0.023±0.003	0.019±0.004
44	11-6-79	0.045±0.005	0.049±0.005	0.050±0.005	0.045±0.005	0.044±0.004	0.048±0.006
45	11-14-79	0.051±0.005	0.048±0.005	0.045±0.004	0.038±0.004	0.045±0.004	0.039±0.005
46	11-21-79	0.104±0.007	0.087±0.007	0.067±0.007	0.113±0.008	0.115±0.007	0.098±0.008
47	11-27-79	0.054±0.006	0.059±0.006	0.056±0.005	0.061±0.005	0.062±0.005	0.069±0.007
48	12-4-79	0.051±0.005	0.044±0.005	0.050±0.005	0.046±0.005	0.049±0.005	0.047±0.006
49	12-11-79	0.036±0.005	0.038±0.005	0.035±0.004	0.038±0.005	0.034±0.004	0.040±0.004
50	12-18-79	0.032±0.004	0.033±0.004	0.031±0.004	0.030±0.004	0.036±0.004	0.034±0.004
51	12-26-79	0.022±0.003	0.017±0.003	0.024±0.003	0.034±0.004	0.022±0.003	0.025±0.003
52	12-31-79	0.024±0.004	0.035±0.009	0.022±0.003	0.032±0.005	0.025±0.004	0.021±0.004

**Vandalism

TABLE 9
NMP - JAF SITE
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - ON SITE STATIONS
Gross Beta Activity - $pCi/m^3 \pm 2\sigma$

		LOCATION								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
1	1-8-79	0.057±0.008	0.044±0.007	0.063±0.006	0.067±0.007	0.060±0.006	0.058±0.006	0.019±0.002	0.008±0.002	0.003±0.001
2	1-15-79	0.036±0.006	0.036±0.005	0.043±0.005	0.034±0.004	0.040±0.005	*	0.005±0.001	0.025±0.002	0.052±0.004
3	1-22-79	0.034±0.006	0.039±0.006	0.037±0.005	0.048±0.007	0.049±0.006	0.045±0.005	*	0.027±0.003	0.035±0.003
4	1-29-79	0.014±0.004	0.019±0.004	0.020±0.004	0.017±0.004	0.019±0.004	0.015±0.003	0.016±0.002	0.004±0.001	0.004±0.001
5	2-5-79	0.022±0.005	0.018±0.005	0.023±0.004	-	0.027±0.004	0.008±0.003	0.009±0.002	0.005±0.001	0.001±0.001
6	2-12-79	0.041±0.005	0.042±0.006	0.040±0.005	0.044±0.005	0.043±0.005	0.015±0.003	0.047±0.004	0.008±0.001	0.006±0.002
7	2-28-79	0.050±0.006	0.041±0.006	0.047±0.005	0.049±0.005	0.040±0.004	0.041±0.004	0.046±0.004	0.033±0.003	0.005±0.001
8	2-26-79	0.044±0.007	0.031±0.006	0.040±0.006	0.040±0.006	0.037±0.005	0.003±0.003	0.009±0.002	0.003±0.001	0.007±0.002
9	3-5-79	0.021±0.005	0.026±0.005	0.031±0.004	0.032±0.005	0.030±0.004	0.016±0.003	0.029±0.003	0.008±0.002	0.023±0.002
10	3-12-79	0.026±0.005	0.026±0.005	0.030±0.004	0.031±0.005	0.029±0.004	0.027±0.004	0.027±0.003	0.008±0.002	0.027±0.003
11	3-19-79	0.036±0.005	0.048±0.006	0.048±0.005	0.043±0.005	0.051±0.005	0.012±0.003	0.045±0.004	0.008±0.002	0.040±0.004
12	3-26-79	0.042±0.006	0.037±0.006	0.038±0.005	0.035±0.005	0.047±0.005	0.036±0.004	0.032±0.003	0.031±0.003	0.025±0.003
13	4-2-79	0.041±0.006	0.047±0.007	0.049±0.005	0.048±0.006	0.044±0.005	0.045±0.004	0.019±0.003	0.044±0.003	0.018±0.002
14	4-9-79	0.035±0.005	0.033±0.006	0.039±0.004	0.034±0.005	0.038±0.005	0.013±0.003	0.035±0.003	0.032±0.003	*
15	4-16-79	0.031±0.006	0.028±0.006	0.033±0.004	0.034±0.005	0.038±0.005	0.010±0.003	0.033±0.003	0.028±0.002	0.021±0.002
16	4-23-79	0.078±0.008	0.077±0.009	0.105±0.008	0.089±0.007	0.088±0.007	0.027±0.003	0.019±0.002	*	0.068±0.004
17	4-30-79	0.079±0.007	0.066±0.008	0.091±0.007	0.085±0.007	0.075±0.006	0.073±0.005	0.090±0.004	0.013±0.002	0.061±0.004
18	5-7-79	0.077±0.007	0.077±0.008	0.096±0.007	0.094±0.007	0.108±0.007	0.031±0.003	0.093±0.005	0.046±0.003	0.076±0.004
19	5-14-79	0.070±0.007	0.081±0.008	0.083±0.007	0.077±0.007	0.089±0.007	0.075±0.005	*	0.021±0.002	0.061±0.004
20	5-21-79	0.083±0.007	0.071±0.007	0.084±0.006	0.080±0.007	0.081±0.006	0.080±0.005	0.081±0.004	0.017±0.002	0.070±0.004
21	5-29-79	0.050±0.006	0.051±0.006	0.055±0.005	0.057±0.005	0.057±0.005	0.046±0.004	0.050±0.003	0.048±0.003	0.045±0.003
22	6-4-79	0.131±0.010	0.112±0.010	0.131±0.008	0.133±0.009	0.115±0.008	0.113±0.006	0.131±0.005	0.105±0.005	0.106±0.005
23	6-11-79	0.066±0.007	0.074±0.008	0.053±0.006	0.068±0.006	0.065±0.006	0.070±0.005	0.062±0.004	0.059±0.004	0.061±0.004
24	6-18-79	0.132±0.009	0.135±0.010	0.132±0.008	0.141±0.009	0.132±0.008	0.096±0.005	0.079±0.004	0.080±0.004	0.111±0.005
25	6-25-79	0.120±0.009	0.090±0.008	0.076±0.006	0.105±0.008	0.108±0.007	0.100±0.005	0.126±0.005	0.093±0.004	0.099±0.004
26	7-2-79	0.072±0.007	0.059±0.007	0.073±0.006	0.069±0.007	0.060±0.006	0.041±0.004	0.063±0.004	0.055±0.003	0.060±0.004

- Sample Lost

* Pump Inoperative

TABLE 9 (CONT.)
NMP - JAF SITE
ENVIRONMENTAL AIRBORNE PARTICULATE SAMPLES - ON SITE STATIONS
Gross Beta Activity - $pCi/m^3 \pm 2\sigma$

		LOCATION								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
27	7-9-79	0.155±0.010	0.148±0.010	0.215±0.010	0.167±0.009	0.202±0.009	0.141±0.006	0.190±0.006	0.157±0.006	0.158±0.006
28	7-16-79	0.127±0.009	0.106±0.008	0.142±0.008	0.111±0.008	0.138±0.007	0.049±0.004	0.102±0.004	0.025±0.002	0.088±0.004
29	7-23-79	0.162±0.010	0.148±0.010	0.188±0.009	0.112±0.008	0.171±0.008	0.081±0.004	0.138±0.005	0.020±0.002	0.064±0.003
30	7-30-79	0.161±0.010	0.138±0.010	0.181±0.009	0.131±0.009	0.174±0.009	0.093±0.006	0.271±0.008	0.157±0.006	0.182±0.007
31	8-6-79	0.083±0.008	0.068±0.008	0.080±0.007	0.074±0.006	0.090±0.006	0.074±0.005	0.047±0.003	0.050±0.003	0.067±0.004
32	8-13-79	0.103±0.008	0.085±0.008	0.107±0.007	0.102±0.007	0.123±0.007	0.100±0.005	0.136±0.005	0.105±0.005	0.082±0.004
33	8-20-79	0.061±0.008	0.041±0.006	0.057±0.005	0.041±0.004	0.063±0.005	0.061±0.005	0.062±0.004	0.031±0.002	0.037±0.003
34	8-27-79	0.064±0.006	0.038±0.006	0.076±0.006	0.066±0.004	0.132±0.007	0.035±0.003	0.083±0.004	0.014±0.002	0.055±0.003
35	9-3-79	0.058±0.006	0.050±0.005	0.061±0.005	0.051±0.004	0.073±0.005	0.057±0.004	0.039±0.003	0.046±0.003	0.042±0.003
36	9-10-79	0.077±0.007	0.029±0.006	0.022±0.003	0.023±0.003	0.029±0.004	0.094±0.005	0.046±0.004	0.068±0.004	0.052±0.003
37	9-17-79	0.070±0.006	0.062±0.005	0.073±0.006	0.088±0.006	0.088±0.006	0.049±0.004	0.068±0.004	0.059±0.003	0.023±0.002
38	9-24-79	0.082±0.007	0.079±0.006	0.091±0.006	0.079±0.006	0.096±0.006	0.021±0.003	0.081±0.004	0.027±0.003	0.071±0.004
39	10-1-79	0.028±0.005	0.026±0.003	0.030±0.004	0.034±0.004	0.038±0.004	0.033±0.004	0.012±0.001	0.024±0.002	0.012±0.002
40	10-8-79	0.021±0.004	0.024±0.003	0.023±0.004	0.022±0.003	0.020±0.003	0.025±0.003	0.019±0.002	0.008±0.002	0.003±0.001
41	10-15-79	0.020±0.005	0.016±0.003	0.022±0.003	0.016±0.003	0.021±0.003	0.019±0.003	0.006±0.001	0.005±0.001	0.006±0.001
42	10-22-79	0.053±0.007	0.030±0.004	0.041±0.004	0.036±0.004	0.041±0.004	0.016±0.003	0.027±0.003	0.031±0.003	0.010±0.002
43	10-29-79	0.028±0.005	0.023±0.004	0.024±0.005	0.024±0.004	0.024±0.004	0.026±0.003	0.004±0.001	0.007±0.001	0.008±0.002
44	11-5-79	0.031±0.005	0.033±0.004	0.037±0.006	0.036±0.004	0.036±0.004	0.028±0.003	0.029±0.002	0.030±0.002	0.009±0.001
45	11-13-79	0.052±0.006	0.051±0.005	0.063±0.007	0.061±0.004	0.074±0.005	0.055±0.004	0.072±0.004	0.055±0.003	0.021±0.002
46	11-19-79	0.105±0.009	0.118±0.007	0.150±0.012	0.121±0.007	0.114±0.007	0.086±0.005	0.081±0.004	0.099±0.005	0.037±0.003
47	11-26-79	0.056±0.007	0.061±0.006	0.069±0.007	0.063±0.005	0.062±0.005	0.066±0.004	0.058±0.003	0.011±0.002	0.016±0.002
48	12-3-79	0.032±0.005	0.029±0.004	0.038±0.006	0.040±0.004	0.028±0.004	0.014±0.002	0.050±0.004	0.038±0.003	0.019±0.002
49	12-10-79	0.024±0.005	0.024±0.004	0.026±0.003	0.029±0.003	0.028±0.004	0.029±0.003	0.008±0.001	0.029±0.003	0.027±0.003
50	12-17-79	0.031±0.004	0.030±0.004	0.036±0.004	0.029±0.004	0.036±0.004	0.013±0.002	0.039±0.003	0.037±0.003	0.042±0.004
51	12-26-79	0.029±0.004	0.076±0.005	0.052±0.004	0.037±0.004	0.037±0.004	0.028±0.003	0.033±0.002	0.030±0.002	0.009±0.001
52	12-31-79	0.021±0.005	0.022±0.004	0.025±0.004	0.023±0.003	0.023±0.004	0.007±0.002	0.018±0.002	0.021±0.002	0.005±0.001

TABLE 10

CONCENTRATIONS OF GAMMA EMITTERS IN MONTHLY COMPOSITES OF NMP-JAF AIR PARTICULATE SAMPLES

Results in Units of 10^{-3} pCi/m^3 ± 2 sigma

NUCLIDES	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
			OFF-SITE COMPOSITE			
Be-7	83±8	84±8	100±10	110±11	86±10	85±12
Co-60	<1.2	0.5±0.3	<1.6	<1.0	<1.1	1.4±0.4
Cs-137	0.8±0.4	0.8±0.3	1.1±0.5	1.4±0.5	2.0±0.6	1.2±0.7
Ce-141	1.4±0.4	<0.4	<0.9	<0.9	<1.6	<1.2
Ce-144	2.6±1.5	2.5±1.1	5.0±1.9	5.4±1.8	<3.5	<3.4
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
			ON-SITE COMPOSITE			
Be-7	52±5	51±5	77±8	66±8	62±6	120±12
Mn-54	0.2±0.2	0.11±0.09	<0.5	<0.4	<0.3	<0.5
Co-60	0.7±0.2	0.3±0.1	0.6±0.3	<0.6	<0.6	<0.9
Ru-103	0.3±0.2	<0.1	<0.4	<0.4	<0.3	<0.3
Ru-106	<1.6	1.0±1.0	<3.2	<3.4	<3.4	<3.3
Cs-137	0.4±0.2	0.3±0.1	0.8±0.3	0.7±0.3	0.8±0.3	1.5±0.3
Ce-141	0.8±0.3	<0.2	<0.5	<0.9	<0.4	<0.6
Ce-144	2.2±1.0	1.7±0.6	3.6±1.0	2.3±1.1	4.0±0.8	5.3±1.1
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

TABLE 10A

CONCENTRATIONS OF GAMMA EMITTERS IN MONTHLY COMPOSITES OF NMP - JAF
AIR PARTICULATE SAMPLES

Results in Units of 10^{-3} pCi/m^3 ± 2 sigma

NUCLIDES	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
					OFF-SITE COMPOSITE A-1				
Be-7	110±11	99±15	380±38	120±12	83±11	82±11	61±11	95±14	110±14
Ru-106	<6.3	<5.0	13±8	<6.5	<6.6	<6.5	<6.6	<8.3	<7.9
Cs-137	1.4±0.7	1.8±0.8	4.7±1.4	1.4±0.7	<0.9	<0.9	<1.1	<1.1	<0.8
Ce-144	7.2±2.2	6.3±2.8	18±6	4.3±2.1	<5.0	<4.9	<5.0	<3.4	<4.8
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
					OFF-SITE COMPOSITE A-2				
Be-7	110±12	50±15	120±16	110±12	89±13	63±10	66±12	70±12	89±11
Cs-137	1.2±0.7	<1.2	1.6±0.9	<1.2	<1.4	<0.8	<1.1	<0.9	<1.2
Ce-144	5.4±2.8	<5.1	<4.9	<5.0	<5.0	<3.3	<5.0	<3.4	<3.2
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
					ON-SITE COMPOSITE B-1				
Be-7	120±12	85±13	120±17	76±11	70±8	79±8	57±9	90±11	100±10
Cs-137	1.7±0.5	1.2±0.6	1.7±0.9	0.9±0.5	<0.8	<0.6	<0.6	<0.8	<0.6
Ce-144	5.6±1.8	7.7±4.2	9.0±4.2	3.9±2.6	<3.3	<3.3	<1.7	<1.7	<3.2
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
					ON-SITE COMPOSITE B-2				
Be-7	47±5	55±6	150±15	88±9	73±7	52±5	37±5	55±6	73±7
Cs-137	0.7±0.3	0.6±0.3	2.0±0.5	1.1±0.3	0.6±0.3	<0.3	<0.3	<0.3	0.6±0.3
Ce-144	<1.6	2.4±1.4	6.9±1.6	2.6±0.9	<1.7	<1.1	<1.4	<1.7	<1.6
Others	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

TABLE 11
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY OFF-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location					
WEEK	DATE	C	D_1	D_2	E	F	G
1	1-9-79	<3.68e-02	<2.69e-02	--	<3.68e-02	<4.14e-02	<4.07e-02
2	1-16-79	<2.05e-02	<2.03e-02	<1.71e-02	<1.65e-02	<2.25e-02	<1.97e-02
3	1-23-79	<2.81e-02	<2.18e-02	<2.17e-02	<1.73e-02	<2.21e-02	<2.47e-02
4	1-30-79	<1.82e-02	<2.01e-02	<2.12e-02	<2.01e-02	<2.41e-02	<2.76e-02
5	2-6-79	<1.70e-02	<1.95e-02	<2.29e-02	<1.73e-02	<2.26e-02	<2.55e-02
6	2-13-79	<2.08e-02	<1.82e-02	<2.06e-02	<1.69e-02	<3.00e-02	<2.82e-02
7	2-20-79	<2.04e-02	<2.34e-02	<2.13e-02	<1.71e-02	<2.35e-02	<2.88e-02
8	2-27-79	<1.77e-02	<2.40e-02	<2.39e-02	<2.29e-02	<3.05e-02	<2.25e-02
9	3-6-79	<1.97e-02	<1.76e-02	<1.95e-02	<1.49e-02	<2.65e-02	<2.89e-02
10	3-13-79	<1.88e-02	<1.91e-02	<1.73e-02	<2.02e-02	<2.49e-02	<2.43e-02
11	3-20-79	<2.32e-02	<2.24e-02	<2.31e-02	<2.21e-02	<2.96e-02	<2.63e-02
12	3-27-79	<2.00e-02	<2.15e-02	<1.76e-02	<1.90e-02	<2.41e-02	<2.68e-02
13	4-3-79	<1.86e-02	<1.95e-02	<1.73e-02	<2.15e-02	<2.44e-02	<3.21e-02
14	4-10-79	<2.28e-02	<9.55e-03	<2.04e-02	<2.08e-02	<2.86e-02	<2.83e-02
15	4-17-79	<2.25e-02	<2.01e-02	<2.19e-02	<2.01e-02	<2.96e-02	<3.24e-02
16	4-24-79	<2.27e-02	<2.32e-02	<2.12e-02	<2.28e-02	<3.73e-02	<3.67e-02
17	5-1-79	<2.53e-02	<2.12e-02	<1.77e-02	<2.76e-02	<2.57e-02	<2.13e-02
18	5-8-79	<1.98e-02	<2.50e-02	<2.60e-02	<1.95e-02	<2.80e-02	<3.16e-02
19	5-15-79	<1.29e-02	<1.92e-02	<1.93e-02	<1.84e-02	<2.62e-02	* *
20	5-22-79	<1.92e-02	<2.32e-02	<2.43e-02	<1.26e-02	<2.43e-02	* *
21	5-30-79	<1.60e-02	<1.97e-02	<1.81e-02	<1.76e-02	<1.92e-02	* *
22	6-5-79	<2.73e-02	<2.70e-02	<2.14e-02	<2.59e-02	<2.75e-02	* *
23	6-12-79	<2.34e-02	<2.21e-02	<2.36e-02	<2.03e-02	<2.57e-02	* *
24	6-19-79	<2.37e-02	<2.39e-02	<2.17e-02	<1.61e-02	<2.31e-02	<2.18e-01
25	6-26-79	<2.06e-02	<2.42e-02	<2.69e-02	<2.03e-02	<2.83e-02	<3.19e-02
26	7-3-79	<2.35e-02	<1.95e-02	<2.56e-02	<2.58e-02	<2.15e-02	<2.47e-02

*Pump Off - TV Interference Test

**Vandalism

TABLE II (CONT.)
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY OFF-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location					
WEEK	DATE	C	D_1	D_2	E	F	G
27	7-10-79	<2.52e-02	<2.68e-02	<1.90e-02	<2.59e-02	<2.64e-02	<2.69e-02
28	7-17-79	<2.38e-02	<2.36e-02	<2.32e-02	<2.34e-02	<2.38e-02	<2.82e-02
29	7-24-79	<2.86e-02	<2.38e-02	<2.72e-02	<2.75e-02	<3.49e-02	<3.37e-02
30	7-31-79	<1.82e-02	<2.26e-02	<2.25e-02	<1.92e-02	<2.61e-02	<2.52e-02
31	8-7-79	<2.60e-02	<2.37e-02	<2.42e-02	<2.31e-02	<3.28e-02	<2.57e-02
32	8-14-79	<1.93e-02	<2.35e-02	<2.70e-02	<1.66e-02	<2.79e-02	<3.00e-02
33	8-21-79	<1.80e-02	<1.83e-02	<1.99e-02	<1.88e-02	<2.69e-02	<2.39e-02
34	8-28-79	<1.98e-02	<2.46e-02	<2.17e-02	<1.82e-02	<2.89e-02	<2.77e-02
35	9-4-79	<2.11e-02	<2.05e-02	<1.66e-02	<1.89e-02	<2.55e-02	<2.11e-02
36	9-11-79	<1.92e-02	<2.51e-02	<2.02e-02	<1.97e-02	<2.74e-02	**
37	9-18-79	<2.12e-02	<1.83e-02	<2.49e-02	<1.94e-02	<2.51e-02	**
38	9-25-79	<2.08e-02	<1.97e-02	<1.90e-02	<2.52e-02	<3.07e-02	<2.82e-02
39	10-2-79	<2.23e-02	<2.40e-02	<2.24e-02	<2.26e-02	<2.77e-02	<2.71e-02
40	10-9-79	<2.07e-02	<1.73e-02	<1.62e-02	<2.05e-02	<2.86e-02	<2.34e-02
41	10-16-79	<1.72e-02	<2.48e-02	<1.68e-02	<2.43e-02	<2.67e-02	<3.10e-02
42	10-23-79	<1.37e-02	<1.91e-02	<1.72e-02	<1.90e-02	<2.42e-02	<2.32e-02
43	10-30-79	<2.04e-02	<2.38e-02	<2.07e-02	<1.78e-02	<1.99e-02	<2.49e-02
44	11-6-79	<2.22e-02	<2.04e-02	<2.00e-02	<1.84e-02	<1.79e-02	<1.86e-02
45	11-14-79	<1.99e-02	<2.02e-02	<2.05e-02	<1.19e-02	<1.61e-02	<2.16e-02
46	11-21-79	<2.35e-02	<2.01e-02	<3.33e-02	<1.79e-02	<2.50e-02	<3.17e-02
47	11-27-79	<2.55e-02	<2.99e-02	<1.98e-02	<2.05e-02	<1.91e-02	<3.03e-02
48	12-4-79	<2.23e-02	<2.60e-02	<2.07e-02	<2.16e-02	<2.16e-02	<2.64e-02
49	12-11-79	<3.02e-02	<2.23e-02	<1.83e-02	<2.38e-02	<2.04e-02	<2.13e-02
50	12-18-79	<2.28e-02	<1.93e-02	<2.05e-02	<2.26e-02	<1.84e-02	<1.95e-02
51	12-26-79	<1.80e-02	<2.08e-02	<1.59e-02	<1.90e-02	<1.47e-02	<1.44e-02
52	12-31-79	<3.58e-02	<7.09e-02	<2.15e-02	<2.64e-02	<3.11e-02	<2.76e-02

**Vandalism

TABLE 12
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY ON-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
1	1-8-79	<4.83e-02	<4.23e-02	<3.08e-02	<2.73e-02	<3.05e-02	<3.04e-02	<1.35e-02	<1.09e-02	<1.09e-02
2	1-15-79	<2.98e-02	<2.66e-02	<1.77e-02	<1.56e-02	<2.09e-02	*	<8.43e-03	<9.31e-03	<1.51e-02
3	1-22-79	<3.74e-02	<3.15e-02	<2.17e-02	<3.14e-02	<2.44e-02	<1.57e-02	*	<1.14e-02	<1.47e-02
4	1-29-79	<2.65e-02	<3.13e-02	<1.98e-02	<2.10e-02	<2.02e-02	<1.90e-02	<9.34e-03	<8.32e-03	<9.23e-03
5	2-5-79	<2.97e-02	<2.89e-02	<2.35e-02	<2.39e-02	<2.08e-02	<1.74e-02	<8.33e-03	<8.96e-03	<9.74e-03
6	2-12-79	<2.91e-02	<2.76e-02	<1.56e-02	<2.37e-02	<1.63e-02	<1.39e-02	<1.37e-02	<8.19e-03	<9.75e-03
7	2-20-79	<3.00e-02	<2.79e-02	<2.62e-02	<3.13e-02	<2.05e-02	<2.27e-02	<1.41e-02	<9.41e-03	<8.94e-03
8	2-26-79	<3.98e-02	<3.25e-02	<2.59e-02	<3.52e-02	<2.67e-02	<2.32e-02	<1.18e-02	<9.26e-03	<8.76e-03
9	3-5-79	<2.47e-02	<2.86e-02	<2.27e-02	<2.46e-02	<2.29e-02	<1.61e-02	<1.13e-02	<1.09e-02	<7.45e-03
10	3-12-79	<2.16e-02	<2.55e-02	<1.34e-02	<2.16e-02	<1.98e-02	<1.96e-02	<1.06e-02	<9.80e-03	<1.11e-02
11	3-19-79	<2.55e-02	<3.00e-02	<1.89e-02	<1.46e-02	<2.22e-02	<1.60e-02	<1.74e-02	<9.29e-03	<1.69e-02
12	3-26-79	<2.66e-02	<3.57e-02	<1.78e-02	<2.60e-02	<2.39e-02	<2.06e-02	<7.64e-03	<9.34e-03	<1.85e-02
13	4-2-79	<2.64e-02	<3.03e-02	<2.31e-02	<2.88e-02	<2.11e-02	<1.65e-02	<2.15e-02	<1.19e-02	<9.96e-03
14	4-9-79	<1.82e-02	<3.36e-02	<2.12e-02	<2.64e-02	<2.54e-02	<2.22e-02	<1.17e-02	<9.28e-03	*
15	4-16-79	<3.20e-02	<3.34e-02	<2.13e-02	<1.61e-02	<2.61e-02	<1.77e-02	<9.03e-03	<9.47e-03	<9.31e-03
16	4-23-79	<3.02e-02	<3.90e-02	<2.20e-02	<3.05e-02	<2.08e-02	<1.25e-02	<9.75e-03	*	<1.22e-02
17	4-30-79	<3.19e-02	<2.86e-02	<1.99e-02	<2.53e-02	<2.24e-02	<1.50e-02	<1.07e-02	<8.46e-03	<1.31e-02
18	5-7-79	<2.62e-02	<2.82e-02	<1.99e-02	<2.23e-02	<2.23e-02	<1.37e-02	<1.12e-02	<9.23e-03	<7.79e-03
19	5-14-79	<2.53e-02	<3.03e-02	<2.40e-02	<2.68e-02	<2.09e-02	<1.34e-02	*	<1.11e-02	<8.54e-03
20	5-21-79	<2.44e-02	<3.01e-02	<2.11e-02	<1.84e-02	<1.92e-02	<1.41e-02	<8.40e-03	<9.82e-03	<8.55e-03
21	5-29-79	<2.20e-02	<3.14e-02	<1.77e-02	<1.93e-02	<1.70e-02	<1.44e-02	<7.33e-03	<8.86e-03	<8.22e-03
22	6-4-79	<3.36e-02	<3.67e-02	<2.43e-02	<2.92e-02	<2.54e-02	<1.82e-02	<1.18e-02	<9.81e-03	<1.40e-02
23	6-11-79	<2.65e-02	<3.28e-02	<1.92e-02	<2.86e-02	<2.23e-02	<1.22e-02	<8.44e-03	<1.02e-02	<1.13e-02
24	6-18-79	<2.33e-02	<2.91e-02	<2.21e-02	<2.76e-02	<2.43e-02	<1.15e-02	<9.30e-03	<9.95e-03	<1.05e-02
25	6-25-79	<2.77e-02	<3.09e-02	<2.29e-02	<2.34e-02	<2.23e-02	<1.29e-02	<1.03e-02	<9.02e-03	<1.02e-02
26	7-2-79	<3.46e-02	<4.27e-02	<2.25e-02	<3.57e-02	<2.01e-02	<1.55e-02	<9.95e-03	<1.05e-02	<9.98e-03

*Pump Inoperative

TABLE 12 (CONT.)
NMP-JAF SITE
ENVIRONMENTAL CHARCOAL CARTRIDGE ACTIVITY ON-SITE STATIONS
I-131 pCi/m^3 $4.66\sqrt{b}$

		Location								
WEEK	DATE	D_1	D_2	E	F	G	H	I	J	K
27	7-9-79	<3.03e-02	<2.53e-02	<2.64e-02	<2.13e-02	<2.02e-02	<1.58e-02	<1.10e-02	<1.15e-02	<1.11e-02
28	7-16-79	<2.61e-02	<3.58e-02	<1.95e-02	<2.73e-02	<2.26e-02	<1.30e-02	<9.92e-03	<1.13e-02	<1.05e-02
29	7-23-79	<2.32e-02	<3.66e-02	<2.72e-02	<2.95e-02	<2.40e-02	<1.05e-02	<1.00e-02	<8.73e-03	<6.88e-03
30	7-30-79	<2.84e-02	<3.45e-02	<2.47e-02	<2.79e-02	<2.94e-02	<1.86e-02	<9.56e-03	<1.06e-02	<1.03e-02
31	8-6-79	<3.54e-02	<4.34e-02	<2.52e-02	<2.22e-02	<2.76e-02	<1.78e-02	<1.13e-02	<8.99e-03	<9.76e-03
32	8-13-79	<2.57e-02	<2.66e-02	<2.06e-02	<2.01e-02	<1.83e-02	<1.47e-02	<9.62e-03	<9.80e-03	<7.08e-03
33	8-20-79	<3.63e-02	<2.85e-02	<2.00e-02	<1.81e-02	<1.73e-02	<1.09e-02	<1.06e-02	<1.10e-02	<9.98e-03
34	8-27-79	<2.62e-02	<2.93e-02	<2.15e-02	<1.73e-02	<1.99e-02	<1.48e-02	<1.26e-02	<1.19e-02	<9.49e-03
35	9-3-79	<1.65e-02	<2.60e-02	<2.24e-02	<1.57e-02	<1.85e-02	<1.66e-02	<7.79e-03	<8.67e-03	<8.93e-03
36	9-10-79	<2.41e-02	<2.42e-02	<1.95e-02	<1.41e-02	<1.78e-02	<1.44e-02	<9.60e-03	<9.66e-03	<8.59e-03
37	9-17-79	<2.93e-02	<2.03e-02	<1.81e-02	<2.43e-02	<1.84e-02	<1.55e-02	<1.25e-02	<1.00e-02	<7.50e-03
38	9-24-79	<2.31e-02	<2.06e-02	<2.10e-02	<1.74e-02	<2.01e-02	<1.64e-02	<1.08e-02	<1.40e-02	<5.70e-03
39	10-1-79	<3.45e-02	<2.33e-02	<2.62e-02	<1.86e-02	<2.21e-02	<1.94e-02	<9.60e-03	<1.05e-02	<8.68e-03
40	10-8-79	<2.97e-02	<1.80e-02	<1.82e-02	<1.43e-02	<1.67e-02	<1.04e-02	<8.43e-03	<1.65e-02	<8.78e-03
41	10-15-79	<2.83e-02	<1.87e-02	<1.77e-02	<2.14e-02	<1.85e-02	<1.16e-02	<8.86e-03	<9.48e-03	<8.75e-03
42	10-22-79	<2.59e-02	<2.24e-02	<1.38e-02	<1.63e-02	<1.52e-02	<1.54e-02	<9.43e-03	<9.80e-03	<8.39e-03
43	10-29-79	<2.61e-02	<1.94e-02	<2.73e-02	<3.81e-02	<1.82e-02	<1.73e-02	<7.46e-03	<9.24e-03	<6.10e-03
44	11-5-79	<3.13e-02	<1.64e-02	<3.60e-02	<1.52e-02	<1.50e-02	<1.34e-02	<1.02e-02	<1.17e-02	<8.10e-03
45	11-13-79	<2.59e-02	<2.01e-02	<2.94e-02	<1.47e-02	<1.42e-02	<1.44e-02	<8.08e-03	<8.92e-03	<6.81e-03
46	11-19-79	<3.39e-02	<3.35e-02	<3.43e-02	<1.99e-02	<1.87e-02	<1.79e-02	<1.14e-02	<1.32e-02	<8.01e-03
47	11-26-79	<3.41e-02	<2.30e-02	<3.29e-02	<1.88e-02	<1.45e-02	<1.58e-02	<9.32e-03	<1.48e-02	<5.26e-03
48	12-3-79	<3.23e-02	<2.07e-02	<3.39e-02	<1.84e-02	<2.23e-02	<1.34e-02	<1.33e-02	<1.19e-02	<8.10e-03
49	12-10-79	<3.07e-02	<2.24e-02	<8.35e-03	<1.52e-02	<1.91e-02	<1.11e-02	<1.09e-02	<1.11e-02	<1.02e-02
50	12-17-79	<2.91e-02	<1.89e-02	<2.30e-02	<1.98e-02	<2.23e-02	<8.43e-03	<1.49e-02	<1.29e-02	<1.12e-02
51	12-26-79	<2.36e-02	<1.54e-02	<1.96e-02	<1.57e-02	<9.75e-03	<1.16e-02	<7.68e-03	<9.97e-03	<6.31e-03
52	12-31-79	<4.59e-02	<2.49e-02	<3.40e-02	<2.23e-02	<2.57e-02	<1.77e-02	<1.27e-02	<1.42e-02	<1.21e-02

*Pump Inoperative

TABLE 13
TLD's
DIRECT RADIATION MEASUREMENTS - QUARTERLY RESULTS
mRem/Quarter

STATION NUMBER	LOCATION	QUARTER 1st	2nd	3rd	4th
3	D1 on Site	25±1	17±5	16±4	*
4	D2 on Site	12±2	11±3	15±3	17±3
5	E on Site	11±1	10±1	14±1	14±1
6	F on Site	11±1	8±2	13±1	14±2
7	G on Site	9±1	8±2	15±5	13±1
8	C off Site	12±2	13±7	17±3	16±2
9	D1 off Site	10±1	9±2	14±1	14±3
10	D2 off Site	10±1	9±1	*±	13±2
11	E off Site	10±1	9±1	13±3	13±2
12	F off Site	9±0	9±2	13±3	15±2
13	G off Site	10±1	9±3	14±3	13±4
14	SW Oswego	10±1	15±1	13±3	16±2
15	Pole 66, W. Bound	9±1	8±2	13±2	12±4
16	Pole 51, W. Bound	10±1	8±1	15±3	13±4
17	Prog. Cen. E. Yard	12±0	11±3	18±4	16±2
18	Prog. Cen. Picnic	11±1	10±3	13±3	12±1
19	Pole 9, E. Bound	11±0	10±2	14±2	15±3
20	JAF Shore, W. Bound	22±1	26±7	21±3	33±3
21	Pole 67, E. Bound	11±1	11±4	18±4	18±4
22	Pole 53, E. Bound	9±1	8±1	13±1	12±1
23	H on Site	15±1	12±2	16±1	19±2
24	I on Site	11±2	8±2	14±2	12±2
25	J on Site	10±1	10±1	14±2	14±3
26	K on Site	10±2	9±3	14±3	13±1
27	Light Pole (N) JAF	65±3	53±6	41±4	72±13
28	Light Pole (E) JAF	218±20	272±14	131±18	188±39
29	N. Fence (E) JAF	126±19	117±19	83±10	100±2
30	N. Fence (NW) JAF	34±2	21±6	23±2	42±7
31	N. Fence (NW) NMP-1	43±2	56±6	42±9	53±7
32	N. Fence (W) NMP-1	28±3	34±7	27±4	29±3
33	NMP/JAF, Twin Pole (W) of JAF W. Fence	25±2	15±1	19±2	*
34	N of Unit 2 on Lake	15±1	16±3	18±2	21±1
35	E of Unit 2 on Stor. Bldg.	16±1	179±19	14±2	14±2
36	Pole Tower, FNM-13	11±1	11±2	14±1	15±4
37	Pole Tower, FNM-14	14±0	16±1	19±2	18±2
38	SE End of Shop on Fence NMP-1	16±2	14±1	19±1	23±2
39	NMP-1 ME Gate	352±11	389±66	401±39	445±47
40	NE Gate NMP-1	39±1	42±1	46±3	59±10
41	Paint Shop W. Unit 2	24±1	33±6	35±3	40±7
42	Turb. Bldg. (NW) Unit 2	56±16	83±12	77±16	98±4

* TLDs lost.

TABLE 14

CONTINUOUS RADIATION MONITORS* (GM)

mR/hr

1st HALF

LOCATION	PERIOD	mR/hr MIN.	mR/hr MAX.	mR/hr AVE.
C Off-Site	January	0.010	0.030	0.018
	February	0.012	0.023	0.018
	March	0.013	0.030	0.020
	April	0.015	0.030	0.022
	May	0.015	0.030	0.022
	June	0.018	0.032	0.021
D_1 On-Site	January	0.035	0.065	0.050
	February	0.035	0.080	0.050
	March	0.030	0.100	0.050
	April	0.030	0.120	0.040
	May	0.015	0.040	0.020
	June	0.010	0.030	0.012
D_2 On-Site	January	0.010	0.020	0.012
	February	0.025	0.035	0.050
	March	0.010	0.028	0.020
	April	0.028	0.060	0.040
	May	0.030	0.080	0.045
	June	0.012	0.040	0.020
E On-Site	January	0.015	0.025	0.025
	February	0.012	0.025	0.020
	March	0.015	0.050	0.025
	April	0.015	0.065	0.022
	May	0.018	0.040	0.020
	June	0.015	0.035	0.020
F On-Site	January	0.010	0.014	0.015
	February	0.010	0.035	0.015
	March	0.010	0.060	0.020
	April	0.010	0.045	0.018
	May	0.010	0.050	0.020
	June	0.010	0.028	0.020

*Detectors are 'bugged' to insure onscale readings.

TABLE 14 (Cont.)

CONTINUOUS RADIATION MONITOS* (GM)

mR/hr

1st HALF

LOCATION	PERIOD	mR/hr MIN.	mR/hr MAX.	mR/hr AVE.
G On-Site	January	0.010	0.025	0.015
	February	0.010	0.020	0.015
	March	0.010	0.020	0.015
	April	0.010	0.025	0.015
	May	0.010	0.018	0.025
	June	0.010	0.030	0.020
H On-Site	January	0.018	0.040	0.030
	February	0.019	0.040	0.025
	March	0.018	0.045	0.028
	April	0.020	0.045	0.030
	May	0.020	0.050	0.030
	June	0.020	0.050	0.035
I On-Site	January	0.010	0.018	0.012
	February	0.010	0.019	0.013
	March	0.010	0.020	0.013
	April	0.010	0.050	0.012
	May	0.010	0.020	0.012
	June	0.010	0.020	0.012
J On-Site	January	0.010	0.025	0.018
	February	0.010	0.020	0.015
	March	0.010	0.030	0.018
	April	0.010	0.030	0.020
	May	0.018	0.035	0.020
	June	0.010	0.420	0.020
K On-Site	January	0.010	0.020	0.015
	February	0.012	0.025	0.020
	March	0.012	0.030	0.018
	April	0.015	0.035	0.020
	May	0.015	0.030	0.020
	June	0.015	0.030	0.022

TABLE 14 (Cont.)

CONTINUOUS RADIATION MONITORS* (GM)

mR/hr

2nd HALF

LOCATION	PERIOD	mR/hr MIN.	MAX.	AVE.
C Off-Site	July	0.028	0.032	0.025
	August	0.017	0.034	0.025
	September	0.010	0.023	0.017
	October	0.010	0.050	0.021
	November	0.015	0.029	0.020
	December	0.015	0.028	0.018
D_1 On-Site	July	0.010	0.070	0.015
	August	0.010	0.027	0.015
	September	0.012	0.032	0.021
	October	0.017	0.045	0.035
	November	0.018	0.073	0.030
	December	0.018	0.073	0.040
D_2 On-Site	July	0.010	0.045	0.025
	August	0.010	0.035	0.020
	September	0.010	0.027	0.017
	October	0.011	0.030	0.019
	November	0.010	0.023	0.015
	December	0.011	0.023	0.015
E On-Site	July	0.015	0.040	0.020
	August	0.015	0.035	0.020
	September	0.015	0.038	0.020
	October	0.017	0.033	0.020
	November	0.015	0.035	0.020
	December	0.013	0.035	0.020
F On-Site	July	0.012	0.030	0.020
	August	0.010	0.028	0.020
	September	0.017	0.030	0.024
	October	0.017	0.033	0.023
	November	0.017	0.035	0.025
	December	0.015	0.035	0.021

*Detectors are 'bugged' to insure onscale readings.

TABLE 14 (Cont.)

CONTINUOUS RADIATION MONITORS* (GM)

mR/hr

2nd HALF

		mR/hr		
LOCATION	PERIOD	MIN.	MAX.	AVE.
G On-Site	July	0.015	0.032	0.022
	August	0.016	0.030	0.023
	September			
	October	0.012	0.029	0.015
	November	0.010	0.023	0.015
	December	0.015	0.023	0.018
H On-Site	July	0.020	0.055	0.045
	August	0.020	0.050	0.035
	September	0.020	0.050	0.035
	October	0.023	0.050	0.035
	November	0.023	0.050	0.030
	December	0.023	0.050	0.033
I On-Site	July	0.010	0.028	0.018
	August	0.010	0.029	0.017
	September	0.010	0.025	0.016
	October	0.010	0.027	0.013
	November	0.010	0.023	0.013
	December	0.010	0.023	0.013
J On-Site	July	0.010	0.060	0.025
	August	0.018	0.050	0.025
	September	0.015	0.040	0.030
	October	0.010	0.043	0.023
	November	0.015	0.040	0.025
	December	0.015	0.040	0.023
K On-Site	July	0.012	0.032	0.022
	August	0.010	0.035	0.020
	September	0.010	0.023	0.021
	October	0.010	0.025	0.015
	November	0.010	0.030	0.020
	December	0.012	0.030	0.020

TABLE 15

CONCENTRATIONS OF IODINE-131 IN MILK

Results in Units of pCi/l ± 2 sigma

STATION LOCATIONS*	5-01-79	6-05-79	7-05-79	8-01-79	9-04-79	10-01-79	11-05-79	12-04-79
4	<0.3	<0.3	<0.4	<0.6	<0.4	<0.5	<0.4	<0.4
13	<0.3	<0.4	<0.5	<0.3	<0.4	<0.5	<0.3	<0.4
14	<0.4	<0.3	<0.6	<0.3	<0.5	<0.4	<0.3	<0.3
16	<0.2	<0.3	<0.7	<0.4	<0.5	<0.5	<0.5	<0.3
25	<0.3	<0.3	<0.4	<0.3	<0.5	<0.6	<0.4	<0.4
8	<0.2(1)	<0.3	<0.4	<0.3	<0.3	<0.7	<0.4	<0.3

(1) Sampling date was 5-08-79.

TABLE 16

CONCENTRATIONS OF STRONTIUM-90 AND GAMMA EMITTERS IN MILK (MONTHLY SAMPLE)

Results in Units of pCi/l ± 2 sigma

STATION	NUCLIDES	5-01-79	6-05-79	7-05-79	8-01-79	9-04-79	10-01-79	11-05-79	12-04-79
Linda Clark	K-40	990±99	1100±110	1100±110	1100±110	1100±110	1600±160	1500±150	1400±140
	Cs-137	<3.1	5.1±2.0	<3.1	6.1±2.4	7.6±3.4	6.1±3.5	4.7±2.7	<4.7
	Sr-90	5.3±1.5	3.6±0.8	4.6±2.1	4.6±0.9	3.7±1.0	2.6±1.4	<3.7	<12(1)
Luther Hannum	K-40	990±99	1100±110	990±99	1100±110	1500±150	1600±160	1500±150	1600±160
	Cs-137	<3.1	<3.1	<3.1	<3.1	<4.7	<4.7	<4.7	<4.7
	Sr-90	5.0±2.1	4.3±1.0	5.3±0.9	5.3±1.6	-6.3±2.0	3.1±1.4	<4.4	4.6±0.8
Harold Hurlburt	K-40	990±99	1100±110	1100±110	1100±110	1500±150	1500±150	1500±150	1500±150
	Cs-137	<3.1	4.9±2.4	4.3±2.0	4.5±2.0	<4.7	<4.7	3.2±2.3	3.2±2.6
	Sr-90	3.0±2.6	3.3±0.7	3.4±0.9	4.7±3.3	2.1±0.9	3.2±0.8	<2.8	2.2±0.8
Robert Jones	K-40	980±98	1100±110	1100±110	960±96	1400±140	1500±150	1500±150	1500±150
	Cs-137	<3.1	7.7±2.2	6.4±1.9	4.4±2.1	7.0±3.2	<4.7	4.7±2.9	<6.2
	Sr-90	3.5±3.2	7.3±1.7	8.0±1.3	4.6±2.6	3.1±2.1	5.6±1.1	<2.2	29±11(2)
Charles Parkhurst	K-40	990±99	1100±110	1600±160	1300±130	1400±140	1600±160	1400±140	1500±150
	Cs-134	<3.2	<1.6	<3.2	<1.6	9.0±2.3	<3.3	<3.2	<3.2
	Cs-137	13±3	5.4±2.1	13±5	8.6±2.2	53±5	17±4	7.5±3.0	19±4
	Sr-90	5.2±1.6	7.5±0.8	8.5±1.2	5:0±1.1	4.7±1.2	5.1±3.2	<4.6	<17(1)

(1) High MDL due to low chemical yield.
(2) Result suspect due to low chemical yield; insufficient sample remaining for analysis.

TABLE 17

MILCH ANIMAL CENSUS

SPRING 1979

TOWN	NO. ON MAP	NO. MILCH ANIMALS
New Haven	1	30C
	4	55C
	10	40C
	30	2G
Mexico	2	40C
	5	29C
	6	50C
	23	64C
	9	16C
	14	60C
	12	45C
	15	2G
	17	34C
	19	33C
	20	46C
	22	38C
	24	1C
	21	6C
	26	40C
	29	20C
	31	30C
Richland	11	57C
Lycoming	25	25C
Hannibal	13	23C
Oswego	3	*
	7	13C
	8	26C
	16	39C
	18	5C
	27	30C
	28	4C

C = cows
G = goats
* = would not cooperate

TABLE 17 (Continued)

MILCH ANIMAL CENSUS

SUMMER 1979

TOWN	NO. ON MAP	NO. MILCH ANIMALS
New Haven	1	41C
	4	64C
	10	40C
	30	0
Mexico	2	36C
	5	0
	6	52C
	9	17C
	14	58C
	12	45C
	15	0
	17	35C
	19	42C
	20	45C
	22	40C
	23	*
	24	1C
	21	21C
	26	35C
	29	0
	31	29C
Richland	11	55C
Lycoming	25	25C
Hannibal	13	26C
Oswego	3	40C
	7	0
	8	26C
	16	39C
	18	2C
	27	16C
	28	8C

C = cows
G = goats
* = Numerous attempts were made to contact this person, all unsuccessful

TABLE 18

CONCENTRATIONS OF GAMMA EMITTERS IN VARIOUS FOOD PRODUCTS

Results in Units of pCi/g(wet) ± 2 sigma

SAMPLE LOCATIONS*	SAMPLE DATE	DESCRIPTION	Be-7	K-40	Cs-137	Ce-141
A	5-24-79	Lamb	<0.1	2.7±0.3	0.046±0.009	<0.02
L	5-25-79	Chicken	<0.07	2.5±0.3	<0.008	<0.01
J	5-25-79	Chicken	<0.07	1.8±0.2	<0.008	<0.02
I	5-25-79	Chicken	<0.07	2.4±0.2	0.014±0.007	<0.01
L	5-25-79	Eggs	<0.06	1.2±0.1	<0.006	<0.01
J	5-25-79	Eggs	<0.06	0.9±0.2	<0.008	<0.02
K	6-05-79	Eggs	<0.07	1.1±0.2	<0.008	<0.01
H	7-03-79	Pork	<0.1	2.1±0.3	0.02±0.01	<0.03
N	8-02-79	Beef	<0.09	2.7±0.3	0.028±0.008	<0.02
M	8-14-79	Green Beans	<0.06	2.3±0.2	<0.006	<0.01
D	8-14-79	Cabbage	<0.4	8.8±0.9	<0.03	<0.06
C	8-14-79	Lettuce	<0.4	3.4±0.6	<0.05	<0.04
C	8-14-79	Tomatoes	<0.02	2.0±0.2	<0.003	<0.007
D	8-14-79	Tomatoes	<0.02	2.3±0.2	<0.003	<0.004
M	8-14-79	Zucchini	<0.02	1.3±0.1	0.004±0.002	<0.005
S	10-10-79	Honey	<0.2	1.1±0.2	<0.02	<0.06
T	10-10-79	Cabbage	<0.2	3.8±0.4	<0.02	<0.03
P	10-10-79	Collard Greens	<1.0	3.7±0.9	<0.08	<0.2
Q	10-10-79	Swiss Chard	<0.3	4.9±0.6	<0.03	<0.07

TABLE 18 (cont.)

CONCENTRATIONS OF GAMMA EMITTERS IN VARIOUS FOOD PRODUCTS

Results in Units of pCi/g(wet) ± 2 sigma

SAMPLE	SAMPLE DATE	DESCRIPTION	Be-7	K-40	Cs-137	Ce-141
T	10-10-79	Squash	<0.07	1.9±0.2	<0.006	<0.01
Q	10-10-79	Tomatoes	<0.07	2.6±0.3	<0.005	<0.02
E	11-02-79	Beef	<0.3	1.9±0.3	<0.01	<0.08
B	11-02-79	Pork	<0.3	2.1±0.2	0.02±0.01	<0.08
L	11-19-79	Chicken	<0.1	2.5±0.3	<0.009	<0.05
L	11-27-79	Eggs	<0.1	0.9±0.1	<0.009	<0.04
O	11-27-79	Eggs	<0.1	1.2±0.2	<0.008	<0.04
F	12-05-79	Eggs	<0.1	1.2±0.2	<0.01	<0.04
D	12-12-79	Cabbage	<0.2	2.4±0.3	<0.02	<0.04
R	12-12-79	Cabbage	<0.1	3.0±0.4	<0.02	0.03±0.02
T	12-13-79	Cabbage	0.2±0.1	4.1±0.4	<0.03	<0.02
J	11-20-79	Chicken	<0.1	2.5±0.3	0.010±0.007	<0.05
K	11-26-79	Chicken	<0.2	2.2±0.2	<0.01	<0.05
T	12-13-79	Beef	<0.1	2.7±0.3	0.07±0.01	<0.03
G	12-17-79	Beef	<0.1	2.3±0.2	<0.01	0.03±0.02

TABLE 19

CONCENTRATIONS OF STRONTIUM-90 AND GAMMA EMITTERS IN SOIL

Results in Units of pCi/g(dry) ± 2 sigma

SAMPLE LOCATION	SAMPLE DATE	Sr-90	K-40	Cs-137	Ra-226	Th-232
4	11-16-79	0.031±0.005	15±2	0.79±0.08	0.6±0.1	0.5±0.2
13	11-19-79	0.055±0.006	9.6±1.1	1.3±0.1	0.57±0.07	0.5±0.1
14	11-12-79	0.016±0.016	13±1	1.3±0.1	0.8±0.1	0.7±0.1
16	11-13-79	0.045±0.005	15±2	0.69±0.07	0.57±0.07	0.5±0.1
25	11-16-79	0.041±0.005	13±1	0.72±0.09	0.7±0.1	0.4±0.1
8	11-16-79	0.033±0.006	13±1	1.0±0.1	0.77±0.08	0.7±0.2

TABLE 20

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS (PASTURE GRASS)

Results in Units of pCi/g(wet)

SAMPLE LOCATION	SAMPLE DATE	Be-7	K-40	Cs-137	Ra-226
4	11-16-79	3.9±1.0	3.7±0.9	<0.06	<0.2
13	11-19-79	4.8±0.9	3.4±1.0	0.11±0.06	<0.2
14	11-12-79	6.9±1.1	5.1±1.0	<0.09	<0.2
16	11-13-79	2.6±0.4	4.3±0.6	<0.03	<0.09
25	11-16-79	4.5±1.1	4.6±1.2	0.14±0.08	0.14±0.09
8	11-16-79	4.9±0.7	2.6±0.7	<0.06	<0.2

TABLE 21

CONCENTRATIONS OF IODINE-131 IN MILK

Results in Units of pCi/l ± 2 sigma

STATION	1-07-80	2-12-80	3-03-80
4	<0.4	<0.4	<0.3
13	<0.4	<0.3	<0.3
14	<0.4	<0.3	<0.3
16	<0.4	<0.3	<0.3
25	<0.3	<0.4	<0.3

TABLE 22

CONCENTRATIONS OF GAMMA EMITTERS IN MILK

Results in Units of pCi/l ± 2 sigma

STATION	NUCLIDES	1-07-80	2-12-80	3-03-80
4	K-40	1500±150	1400±140	1500±150
	Cs-137	6.4±3.3	<6.2	8.0±3.4
13	K-40	1400±140	1400±140	1600±160
	Cs-137	3.4±3.3	<4.7	<4.7
14	K-40	1400±140	1500±150	1500±150
	Cs-137	<4.7	<4.7	<4.7
16	K-40	1400±140	1500±150	1400±140
	Cs-137	<6.2	<4.7	<6.2
25	K-40	1700±170	1800±180	1800±180
	Cs-137	16±2	21±5	14±4

TABLE 23

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS

Results in Units of pCi/g(wet) ± 2 sigma

STATION	DESCRIPTION	DATE	Ra-226	Cs-137	K-40
4	Hay	1-07-80	.18±.13	.09±.06	13±2
	Grain		<.06	.04±.02	15±2
	Corn Silage		.06±.03	<.02	2.2±0.4
13	Hay		.18±.09	<.08	19±2
	Grain		.07±.03	<.03	2.4±0.4
	Corn Silage		<.03	.02±.02	2.3±0.3
14	Hay		<.16	<.06	20±2
	Grain		<.05	<.02	7.4±0.7
	Corn Silage		<.03	<.01	2.6±0.3
16	Hay		<.16	<.08	16±2
	Grain		<.05	.03±.02	7.2±0.7
	Corn Silage		<.03	<.01	1.3±0.2
25	Hay		<.12	.18±.06	7.1±1.0
	Grain		<.08	.04±.02	6.4±0.6

TABLE 23 (cont.)

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS

Results in Units of pCi/g(wet) ± 2 sigma

STATION	DESCRIPTION	DATE	Ra-226	Cs-137	K-40	Be-7
4	Hay	2-12-80	<.16	<.11	12±2	<1.1
	Grain		<.06	.03±.02	15±2	<.22
	Corn Silage		<.05	.05±.02	2.5±0.4	.25±.14
	Dry Corn		<.03	<.02	2.3±0.3	<.18
	Haylage		<.09	<.05	5.9±0.7	<.47
13	Hay		<.31	<.09	14±2	<.99
	Grain		<.06	<.03	2.6±0.4	<.25
	Corn Silage		<.03	<.02	2.5±0.3	<.19
14	Hay		<.31	<.09	20±2	<.86
	Grain		<.06	<.03	7.6±0.8	<.19
	Corn Silage		<.03	<.01	2.7±0.3	<.15
16	Hay		<.16	<.12	13±2	<1.1
	Grain		.07±.02	.03±.02	7.5±0.8	<.22
	Corn Silage		<.05	<.02	1.9±0.3	<.15
25	Hay		<.16	.15±.07	8.8±1.3	<.89
	Grain		<.11	<.03	8.0±0.8	<.23

TABLE 23 (cont.)

CONCENTRATIONS OF GAMMA EMITTERS IN FODDER CROPS

Results in Units of pCi/g(wet) ± 2 sigma

STATION	DESCRIPTION	DATE	Ra-226	Cs-137	K-40	Mn-54	Co-60
4	Hay	3-03-80	<.16	.17±.10	6.0±1.3	<.08	<.11
	Grain		<.05	<.03	15±2	<.02	<.03
	Corn Silage		<.06	.07±.02	2.6±0.4	.03±.02	.08±.02
	Haylage		<.08	<.05	7.4±0.7	<.03	<.05
13	Hay		<.16	<.11	14±2	<.10	<.09
	Grain		<.05	<.02	2.6±0.4	<.02	<.03
	Corn Silage		<.05	<.02	2.1±0.3	<.02	<.03
14	Hay		<.16	<.09	9.5±1.5	<.07	<.13
	Grain		<.06	<.03	8.6±0.9	<.03	<.03
	Corn Silage		<.05	<.02	2.6±0.3	<.02	<.03
16	Hay		<.16	<.08	24±2	<.07	<.09
	Grain		<.05	<.02	7.2±0.7	<.02	<.03
	Corn Silage		<.03	<.02	2.2±0.3	<.02	<.02
25	Hay		<.16	.13±.05	7.3±1.2	<.07	<.08
	Grain		<.06	<.03	8.0±0.8	<.02	<.03