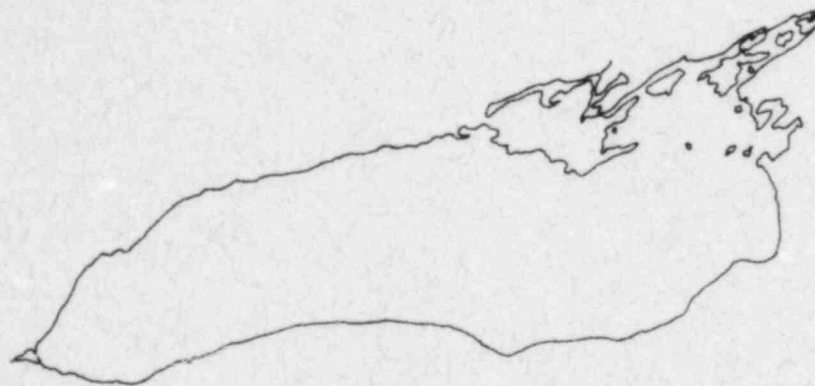


Niagara Mohawk Power Corporation



May 1984

**Nine Mile Point Nuclear Station  
1983  
SPDES Annual Biological Monitoring Report**



ECOLOGICAL ANALYSTS, INC.

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NINE MILE POINT NUCLEAR STATION  
1983 SPDES ANNUAL  
BIOLOGICAL MONITORING REPORT  
SPDES PERMIT NO. NY 000 1015  
SECTION IV.C

Prepared for

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## 1. INTRODUCTION

The Nine Mile Point Nuclear Station Unit 1 is solely owned and operated by Niagara Mohawk Power Corporation. The station is located on a 900-acre site in Oswego County, New York, and is approximately 6.8 miles north-northeast of the City of Oswego. The power conversion system utilizes a 1,850-megawatt thermal boiling water reactor (BWR) designed and manufactured by the General Electric Corporation, and a 620,000-Kilowatt (net) turbine-generator. Nine Mile Point Unit 1 has been operational since December 1969. The station is a critical, integral part of the New York State Master Energy Plan and, with the exception of installed hydroelectric capacity, the station is the most cost efficient source of electric energy within Niagara Mohawk's service area.

Nine Mile Point Unit 1 utilizes a once-through, non-contact cooling water system to dissipate thermal energy from the main condensers and auxiliary cooling systems. Cooling water is drawn from Lake Ontario by means of two main circulating water pumps rated at  $946.25 \text{ m}^3$  (250,000 gallons) per minute and two service water pumps which operate at approximately  $68.13 \text{ m}^3$  (18,000 gallons) per minute (total). Usually, one service water pump is operating except during the mid-summer months.

The lake intake structure is an open-sided hexagonal concrete structure located in approximately 5.5 meters (18 feet) of water and approximately 259 meters (850 feet) from the existing shoreline. The lake discharge structure is of a design that is similar to the intake structure. This structure is hexagonal with open-sided ports and is located approximately 102 meters (335 feet) from the shoreline and 2.6 meters (8.5 feet) below the surface (lowest expected lake level).

Aquatic organisms, detritus, and other debris enter with the water pumped from the vicinity of the submerged intake structure. Organisms, detritus, and debris flow through trash racks, which are used for removing large items, such as logs, and are impinged on traveling screens, which are used for screening out smaller materials. Periodically, the traveling screens are rotated and washed to remove any accumulation of impinged organisms or other material into a sluiceway which empties into an impingement collection basket. The aquatic organisms impinged at Nine Mile Point Unit 1 have been monitored yearly since 1972 in order to estimate species abundance and composition.

This report presents the results of aquatic ecological studies conducted by Ecological Analysts, Inc. (EA) during 1983 as required by the State Pollutant Discharge Elimination System (SPDES) Permit No. NY 000 1015 Section IV (dated 1 July 1983) covering the Niagara Mohawk Power Corporation's (NMPC) Nine Mile Point Nuclear Station Unit 1.

Impingement catches (Section IV.B) were monitored on a frequency of 4-20 samples per month from January through December 1983 (a total of 78 samples in 1983).

Impingement sampling at Nine Mile Point Unit 1 in 1983 resulted in the collection of 32 taxa; 29 fish species or other taxa, one amphibian species (tadpoles), and two invertebrate species (clam and crayfish). Alewife was the most numerous (42,910) comprising 87 percent of the total catch. Alewife, rainbow smelt, and sculpins accounted for 97 percent (47,672) of all fish collected (49,300).

## 2. METHODS AND MATERIALS

### 2.1 SCHEDULE (PERMIT SECTION IV.B.1)

In accordance with the permit requirements, 78 impingement collections were scheduled between 1 January and 31 December 1983. Samples were collected over a 24-hour period on randomly selected days (Table 2-1). Randomly selected sample dates were scheduled such that no more than ten (10) days occurred between samples. Table 2-2 lists the scheduled sampling dates. On seven dates in the year, samples were rescheduled to accommodate operational or equipment problems (Appendix A).

### 2.2 SAMPLING PROCEDURE (PERMIT SECTION IV.B.2,3,4,5)

Samples were initiated around 1300 hours of the sampling day. At the beginning of the sample collection period, the traveling screens were rotated and washed for five minutes. The collection basket, with a 9.5-mm (3/8-in.) stretch mesh liner, was then positioned at the end of the sluiceway. The collection basket remained in place for the duration of the sample, unless high impingement or debris loads required that it be emptied, in which case it was removed, emptied, and repositioned.

At the end of the 24-hour period, the traveling screens were rotated and washed for five minutes. The impinged organisms were washed into the collection basket; the basket was removed and emptied.

Plant operational data were obtained for each sample date to document cooling water flow rates, intake and discharge temperatures, and power production (Appendix B).

A subsampling routine was utilized for occasions when high impingement rates or high debris loads were encountered. The subsampling technique was based on volume, and the total 24-hour catch was estimated using the formula:

$$\text{Estimated No. of Fish in Total Sample} = \frac{\text{Volume of Total Sample} \times \text{No. of Fish in Aliquot}}{\text{Volume of Subsample}}$$

The volume of the total sample was determined by repeatedly filling a volumetrically graduated container, recording the values, and adding them. The total volume was thoroughly mixed by hand or with a shovel and spread out evenly over a flat surface. An aliquot(s) of the total sample was randomly selected and this portion of the sample was removed and measured to determine its volume. During 1983, subsamples constituted at least 25 percent by volume of the total sample. The fish in the subsample were then processed according to regular laboratory procedures (Section 2.3).

### 2.3 LABORATORY PROCESSING (PERMIT SECTION IV.B.4)

After the impingement sample was collected it was returned to the laboratory and all organisms were sorted, identified, and enumerated. Identification was made to the lowest possible taxonomic level, which was usually species. For the convenience of the reader, common names are used in the text; however, a

TABLE 2-1 IMPINGEMENT SAMPLING INTENSITY AS REQUIRED BY THE SPDES  
PERMIT FOR NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

	<u>Number of Sampling Days per Month<sup>(a)</sup></u>
January	4
February	4
March	4
April	16
May	20
June	4
July	4
August	6
September	4
October	4
November	4
December	<u>4</u>
	78

a. Days assigned within each month were selected randomly using random numbers tables (Rand Corporation 1955).

TABLE 2-2 IMPINGEMENT SAMPLING DATES FOR WINE MILE POINT NUCLEAR STATION UNIT 1, 1983

Scheduled Sampling Date	Sampling Results	Scheduled Sampling Date	Sampling Results	Scheduled Sampling Date	Sampling Results
05 JAN	C	01 MAY	C	03 AUG	C
10 JAN	C	02 MAY	C	10 AUG	C
19 JAN	C	03 MAY	C	16 AUG	C
26 JAN	C	04 MAY	C	18 AUG	C
01 FEB	C	05 MAY	C	19 AUG	C
09 FEB	C	06 MAY	C	29 AUG	C
17 FEB	C	07 MAY	C		
27 FEB	C	11 MAY	C	06 SEP	C
		13 MAY	C	13 SEP	C
08 MAR	C	16 MAY	C	20 SEP	C
		17 MAY	R&C		
		Completed on 20 MAY		26 SEP	C
14 MAR	C	18 MAY	R&C		
		Completed on 27 MAY			
24 MAR	C	20 MAY	C	02 OCT	C
30 MAR	R&C	21 MAY	C		
Completed on 31 MAR		22 MAY	C	11 OCT	C
05 APR	C	23 MAY	C	17 OCT	C
06 APR	R&C	24 MAY	R&C	26 OCT	C
Completed on 11 APR		Completed on 28 MAY			
07 APR	C	25 MAY	C		
08 APR	C	28 MAY	C	04 NOV	C
09 APR	C	30 MAY	C	14 NOV	C
11 APR	C			21 NOV	C
14 APR	C	07 JUN	C	28 NOV	C
16 APR	C	14 JUN	C		
17 APR	C	20 JUN	C	07 DEC	R&C
		28 JUN	C	Completed on 12 DEC	
20 APR	C			15 DEC	
21 APR	R&C			19 DEC	
Completed on 26 APR					
22 APR	C	06 JUL	C	28 DEC	
23 APR	C	13 JUL	C		
26 APR	C	19 JUL	C		
27 APR	C	29 JUL	C		
28 APR	C				

C = completed sample.

R&C = sample rescheduled and completed on a different date within the confines of a random numbers table and any remaining available dates in the month.

list of common and their associated scientific names are included in Appendix C. For each taxa collected, the total number and total weight were determined.

In addition, individual lengths and individual weights were recorded for a maximum of 40 specimens per species per impingement sample as required by the Environmental Technical Specifications (Nuclear Regulatory Commission [NRC]). In July, the standard operating procedure was revised to comply with the SPDES permit requirements, since the NRC Environmental Technical Specifications were amended to delete non-radiological monitoring. Specimens (to a maximum of 25 individuals) of the following species were analyzed for length and weight: white perch, alewife, rainbow smelt, smallmouth bass, yellow perch, and each species of salmonid. Any other species present in the collections were enumerated and weighed to obtain a total count and total weight for each taxa.

Total lengths were measured to the nearest millimeter; weights were measured to the nearest 0.1 gram for specimens less than 10 grams, to the nearest 1.0 gram for specimens between 10 and 2,000 grams, and to the nearest 25 grams for specimens over 2,000 grams based on the precision of the scales used for measurement. Any unusual conditions, abnormalities, or presence of fish tags were noted on the data sheets.

#### 2.4. WATER QUALITY DETERMINATIONS (PERMIT SECTION IV.B.5)

At the onset and completion of each impingement sample, intake and discharge temperatures ( $\pm 0.5$  C) were determined from a bucket of water retrieved at both locations.

#### 2.5 DATA PRESENTATION (PERMIT SECTION IV.C.3)

Data are presented according to the requirements set forth in the SPDES permit Section IV.C.3.

Monthly "mean" is equal to the total number of fish impinged by species on all sampling days in a given month divided by the total number of sampling days.

Annual "mean" is equal to the total number of fish impinged by species on all sampling days in the year divided by the total number of sampling days in the year.

Total estimated impingement for each month was calculated using the formula:

$$D = \frac{c}{v} (x)$$

where

D = total estimated impingement

c = the number of fish collected during the sampling period

v = the volume of cooling water used during the sampling period

x = the total monthly volume of cooling water used.

The annual impingement estimate was then calculated by adding the 12 monthly impingement estimates.



## 2.6 COLLECTION EFFICIENCY (PERMIT SECTION IV.B.6)

To assess the efficiency of the traveling screens in removing impinged organisms from the circulating water intake system, a collection efficiency study will be conducted at the Nine Mile Point Unit 1 in 1984. In compliance with Section IV.B.6 of the SPDES permit, an efficiency study has been prepared and was accepted by the New York State Department of Environmental Conservation on 9 January 1984.

### 3. RESULTS

#### 3.1 IMPINGEMENT ABUNDANCE AND COMPOSITION (PERMIT SECTION IV.C.3)

Impingement sampling at Nine Mile Point Unit 1 during 1983 resulted in the collection of 32 taxa. Twenty-nine fish species or other taxa, one amphibian (tadpoles), and two invertebrate species (crayfish and clam) were identified (Table 3-1). Alewife was the most numerous species comprising 87 percent of the total catch. Alewife, together with rainbow smelt and the sculpin family (*Cottus* sp.), accounted for 97 percent of all the taxa collected. No single species was caught in all 12 months. Alewife and rainbow smelt were caught in 11 months of 1983.

During January and a portion of February, the main circulating water pumps were shut down at Nine Mile Point Unit 1. Few fish were impinged during that time. April was the month of peak impingement in 1983 at Nine Mile Point Unit 1. Alewife dominated the spring impingement collections, comprising 90 percent of the total catch during April, May, and June. Rainbow smelt ranked second in abundance during April, May, and June, accounting for 7 percent of the total catch for those months. Rainbow smelt dominated the catch in August (60 percent) and September, with 77 percent of the total catch. White perch were found in the impingement samples at Nine Mile Point Unit 1 in 9 of the 12 months. December was the month of peak abundance for white perch. Yellow perch and smallmouth bass were collected in small numbers or as individuals throughout the year. Salmonids were collected in May, June, and July. Seven of the eight fish collected were chinook salmon; the eighth was a rainbow trout.

Generally, greater impingement collections occurred during the spring months as fish species (particularly alewife and rainbow smelt) migrated inshore to spawn. Impingement rates decreased as the fish finished spawning and moved offshore. Impingement rates increased again in the late summer and fall as young of the year were impinged as a result of cooler lake temperatures and high velocity westerly winds.

The mean daily impingement rate (Table 3-2) was highest for the month of April and is reflective of a greater catch of alewife (larger than 30 percent of the entire month's collection) caught in a single 24-hour period. Existing meteorological conditions at the time of collection (10-20 knot west winds) may have affected the rate of impingement. Previous samples at Nine Mile Point (Ecological Analysts, Inc. 1982, 1983) have indicated that rates of impingement are affected by specific weather conditions such as high winds from the northwest or west and corresponding high waves often associated with the winds.

Impingement rates based on flow (Table 3-3) are slightly lower since the number of fish collected is expressed by volume (number per million cubic meters) of circulating water pumped. Outage conditions and changes in the volume of water pumped during day-to-day plant operations would account for some of the variation in rates of impingement between the two methods of data expression. The high rate of fish (alewife) impinged for the volume of water pumped during the month of March may have been influenced by meteorological conditions existing for a few days prior to a sample collected on 31 March. For that sample, 73 percent of the month's catch of alewife was collected.

TABLE 3-1 ACTUAL MONTHLY IMPINGEMENT COLLECTION, WINE HOLE POINT NUCLEAR STATION UNIT 1, 1983

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Total
No. of Samples	4	4	4	16	20	4	4	6	4	4	4	4	78
<hr/>													
Species													
Alewife	---	3	1,107	33,210	3,955	2,337	1,053	225	26	849	61	84	42,910
Rainbow smelt	---	55	81	523	1,657	817	2	477	165	10	36	176	3,999
Sculpin family	---	57	6	141	437	53	5	17	3	9	4	31	763
White perch	---	3	12	66	65	10	1	4	---	1	---	186	348
Tessellated darter	---	4	3	---	204	40	---	9	1	1	---	2	264
Gizzard shad	---	1	---	1	---	---	1	1	---	---	22	210	236
Trout perch	---	2	---	4	105	81	20	3	---	---	---	4	219
Spottail shiner	---	1	2	6	42	70	28	9	8	---	2	24	192
Crayfish	---	30	3	24	16	2	2	16	---	2	7	18	120
Threespine stickleback	---	---	---	2	---	---	---	---	---	1	1	50	54
Yellow perch	---	2	1	2	8	5	2	2	5	---	1	15	43
Smallmouth bass	1	5	---	4	5	1	---	12	1	---	---	3	32
Rock bass	---	1	---	1	3	6	---	8	---	---	1	5	25
Stonecat	---	---	1	---	2	2	3	9	2	2	1	1	23
American eel	---	---	---	---	1	---	1	3	---	---	---	15	20
White sucker	---	---	---	---	2	---	1	4	2	---	1	---	10
Chinook salmon	---	---	---	---	3	4	1	---	---	---	---	---	8
Clim	---	3	---	---	---	---	---	---	1	1	---	1	6
Emerald shiner	---	---	---	---	2	1	---	---	---	---	---	---	3
White bass	---	---	---	3	---	---	---	---	---	---	---	---	3
Bluesill	---	---	---	---	---	1	---	---	---	---	1	1	3
Unidentified fish(damaged)	1	---	---	---	---	---	---	---	---	1	1	---	3
Blacknose dace	---	---	---	---	2	---	---	---	---	---	---	---	2
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	2	2
Burbot	---	---	---	1	---	---	---	1	---	---	---	---	2
Pumpkinseed	---	---	---	---	---	---	---	---	---	2	---	---	2
Tadpoles	---	---	---	---	---	---	2	---	---	---	---	---	2
Rainbow trout	---	---	---	---	1	---	---	---	---	---	---	---	1
Northern pike	---	---	---	---	---	---	---	---	---	---	---	1	1
Shiner family	---	---	---	---	1	---	---	---	---	---	---	---	1
Bluntnose minnow	---	---	---	---	1	---	---	---	---	---	---	---	1
Brown bullhead	---	---	---	---	---	---	1	---	---	---	---	---	1
Black crappie	---	---	---	---	---	---	---	1	---	---	---	---	1
Total	2	167	1,216	33,988	6,512	3,430	1,123	801	214	879	139	829	49,300

NOTE: Dashes (---) indicate no catches made.

TABLE 3-2. MEAN DAILY IMPINGEMENT RATE BY SPECIES AT NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

	Annual												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Mean
No. of Samples	4	4	4	16	20	4	4	6	4	4	4	4	78
Species													
Alewife	---	0.75	276.75	2,075.63	197.75	584.25	263.25	37.50	6.50	212.25	15.25	21.00	550.13
Rainbow smelt	---	13.75	20.25	32.69	82.85	204.25	0.50	79.50	41.25	2.50	9.00	44.00	51.27
Sculpin family	---	14.25	1.50	8.81	21.85	13.25	1.25	2.83	0.75	2.25	1.00	7.75	9.78
White perch	---	0.75	3.00	4.13	3.25	2.50	0.25	0.67	---	0.25	---	46.50	4.46
Tessellated darter	---	1.00	0.75	---	10.20	10.00	---	1.50	0.25	0.25	---	0.50	3.38
Gizzard shad	---	0.25	---	0.06	---	---	0.25	0.17	---	---	5.50	52.50	3.03
Trout perch	---	0.50	---	0.25	5.25	20.25	5.00	0.50	---	---	---	1.00	2.81
Spottail shiner	---	0.25	0.50	0.38	2.10	17.50	7.00	1.50	2.00	---	0.50	6.00	2.46
Crayfish	---	7.50	0.75	1.50	0.80	0.50	0.50	2.67	---	0.50	1.75	4.50	1.54
Threespine stickleback	---	---	---	0.13	---	---	---	---	---	0.25	0.25	12.50	0.69
Yellow perch	---	0.50	0.25	0.13	0.40	1.25	0.50	0.33	1.25	---	0.25	3.75	0.55
Smallmouth bass	0.25	1.25	---	0.25	0.25	0.25	---	2.00	0.25	---	---	0.75	0.41
Rock bass	---	0.25	---	0.06	0.15	1.50	---	1.33	---	---	0.25	1.25	0.32
Stonecat	---	---	0.25	---	0.10	0.50	0.75	1.50	0.50	0.50	0.25	0.25	0.29
American eel	---	---	---	---	0.05	---	0.25	0.50	---	---	---	3.75	0.26
White sucker	---	---	---	---	0.10	---	0.25	0.67	0.50	---	0.25	---	0.13
Chinook salmon	---	---	---	---	0.15	1.00	0.25	---	---	---	---	---	0.10
Clam	---	0.75	---	---	---	---	---	---	0.25	0.25	---	0.25	0.08
Emerald shiner	---	---	---	---	0.10	0.25	---	---	---	---	---	---	0.04
White bass	---	---	---	0.19	---	---	---	---	---	---	---	---	0.04
Bluesill	---	---	---	---	---	0.25	---	---	---	---	0.25	0.25	0.04
Unidentified fish(damaged)	0.25	---	---	---	---	---	---	---	---	0.25	0.25	---	0.04
Blacknose dace	---	---	---	---	0.10	---	---	---	---	---	---	---	0.03
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	0.50	0.03
Burbot	---	---	---	0.06	---	---	---	0.17	---	---	---	---	0.03
Pumpkinseed	---	---	---	---	---	---	---	---	---	0.50	---	---	0.03
Tadpoles	---	---	---	---	---	---	0.50	---	---	---	---	---	0.03
Rainbow trout	---	---	---	---	0.05	---	---	---	---	---	---	---	0.01
Northern pike	---	---	---	---	---	---	---	---	---	---	---	0.25	0.01
Shiner family	---	---	---	---	0.05	---	---	---	---	---	---	---	0.01
Bluntnose minnow	---	---	---	---	0.05	---	---	---	---	---	---	---	0.01
Brown bullhead	---	---	---	---	---	---	0.25	---	---	---	---	---	0.01
Black crappie	---	---	---	---	---	---	---	0.17	---	---	---	---	0.01
Total	0.50	41.75	304.00	2,124.27	325.60	857.50	280.75	133.51	53.50	219.75	34.75	207.25	632.05

NOTE: Dashes indicate no catches made.

TABLE 3-3 MONTHLY IMPINGEMENT RATE<sup>a</sup> BASED ON FLOW AT NINE MILE POINT NUCLEAR STATION UNIT 1, 1993

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Total
No. of Samples	4	4	4	16	20	4	4	6	4	4	4	4	78
Flow (MCM)	0.107	1.485	0.133	22.146	18.798	5.814	6.026	9.049	6.096	6.051	5.737	5.637	87.079
<b>Species</b>													
Alewife	---	2.020	8,323.308	1,499.594	210.395	401.961	174.743	24.865	4.265	140.307	10.633	14.902	NA
Rainbow smelt	---	37.037	609.023	23.616	88.148	140.523	0.332	52.713	27.067	1.653	6.275	31.222	NA
Sculpin family	---	38.384	45.113	6.367	23.247	9.116	0.830	1.879	0.492	1.487	0.697	5.499	NA
White perch	---	2.020	90.226	2.980	3.458	1.720	0.166	0.442	---	0.165	---	32.996	NA
Tessellated darter	---	2.694	22.556	---	10.852	6.880	---	0.995	0.164	0.165	---	0.355	NA
Gizzard shad	---	0.673	---	0.045	---	---	0.166	0.111	---	---	3.835	37.254	NA
Trout perch	---	1.347	---	0.181	5.586	13.932	3.319	0.332	---	---	---	0.710	NA
Spottail shiner	---	0.673	15.038	0.271	2.234	12.040	4.647	0.995	1.312	---	0.349	4.258	NA
Crayfish	---	20.202	22.556	1.084	0.851	0.344	0.332	1.768	---	0.331	1.220	3.193	NA
Threespine stickleback	---	---	---	0.090	---	---	---	---	---	0.165	0.174	8.870	NA
Yellow perch	---	1.347	7.519	0.090	0.426	0.860	0.332	0.221	0.820	---	0.174	2.661	NA
Smallmouth bass	9.346	3.367	---	0.181	0.266	0.172	---	1.326	0.164	---	---	0.532	NA
Rock bass	---	0.673	---	0.045	0.160	1.032	---	0.884	---	---	0.174	0.887	NA
Stonecat	---	---	7.519	---	0.106	0.344	0.498	0.995	0.328	0.331	0.174	0.177	NA
American eel	---	---	---	---	0.053	---	0.166	0.332	---	---	---	2.661	NA
White sucker	---	---	---	---	0.106	---	0.166	0.442	0.328	---	0.174	---	NA
Chinook salmon	---	---	---	---	0.160	0.688	0.166	---	---	---	---	---	NA
Clam	---	2.020	---	---	---	---	---	---	0.164	0.165	---	0.177	NA
Emerald shiner	---	---	---	---	0.106	0.172	---	---	---	---	---	---	NA
White bass	---	---	---	0.135	---	---	---	---	---	---	---	---	NA
Bluegill	---	---	---	---	---	0.172	---	---	---	---	0.174	0.177	NA
Unidentified (damaged)	9.346	---	---	---	---	---	---	---	---	0.165	0.174	---	NA
Blacknose dace	---	---	---	---	0.106	---	---	---	---	---	---	---	NA
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	0.355	NA
Burbot	---	---	---	0.045	---	---	---	0.111	---	---	---	---	NA
Pumpkinseed	---	---	---	---	---	---	---	---	---	0.331	---	---	NA
Tadpoles	---	---	---	---	---	---	0.332	---	---	---	---	---	NA
Rainbow trout	---	---	---	---	0.053	---	---	---	---	---	---	---	NA
Northern pike	---	---	---	---	---	---	---	---	---	---	---	0.177	NA
Shiner family	---	---	---	---	0.053	---	---	---	---	---	---	---	NA
Bluntnose minnow	---	---	---	---	0.053	---	---	---	---	---	---	---	NA
Brown bullhead	---	---	---	---	---	---	0.166	---	---	---	---	---	NA
Black crappie	---	---	---	---	---	---	---	0.111	---	---	---	---	NA
Total	18.692	112.457	9,142.858	1,534.724	346.419	589.956	186.361	88.522	35.104	145.265	24.227	147.063	

a. Number of fish impinged per million cubic meters (MCM).

NOTE: NA = not applicable.

Dashes (---) indicate no catches made.



The estimated number of aquatic organisms impinged at Nine Mile Point Unit 1 (based on daily average rate) was 138,910 (Table 3-4). The estimate of impinged organisms based on flow was 140,930 (Table 3-5). The differences in the two estimates may be attributed to the two bases from which the estimations were made and the influence of plant operating conditions and weather on the data collected.

### 3.2 LENGTH DISTRIBUTIONS (PERMIT SECTION IV.B.4)

Length frequency distributions are given for seven representative important species (RIS): alewife, rainbow smelt, smallmouth bass, white perch, yellow perch, and two species of salmonids (chinook salmon and rainbow trout) (Tables 3-6 a-f). Alewife collected in the spring and summer at Nine Mile Point Unit 1 were subadult to adult fish; young-of-the-year alewife were collected in late summer (August and September) and fall (October and November). In August and September, 51 and 84 percent respectively, of all alewife collected were young of the year. Collections of young-of-the-year alewife peaked in October with 94 percent of the total alewife catch.

Adult and subadult rainbow smelt were collected in April, May, and June. Young-of-the-year smelt were found in collections made in late summer (August) and fall (October, November). Of the rainbow smelt collected in August, 94 percent were young of the year. This percentage increased in September to 98 percent and then decreased slightly through October (96 percent) and November when 95 percent of all rainbow smelt impinged were young of the year.

White perch were found in the collections primarily as young of the year and subadults. Young-of-the-year white perch were found in the samples collected in April, May, and December.

Yellow perch were collected mostly as adults or subadults. They were not collected in large numbers, rather they were collected as individuals or in small numbers in 10 months of 1983.

Smallmouth bass were collected in small numbers throughout the year. Young-of-the-year smallmouth bass were found in the impingement collections made in the spring and summer.

All but one of the chinook salmon collected were young of the year. The young-of-the-year chinook salmon were all collected in May and June 1983. The adult was in a sample collected in July. One rainbow trout was also collected in 1983 and was an adult.

### 3.3 BIOMASS (PERMIT SECTION IV.B.4)

Total biomass collected in the 1983 impingement samples at Nine Mile Point Unit 1 was 1,316,437 grams (1,316 kilograms). Alewife comprised 91 percent of the total biomass. Gizzard shad (4 percent) and rainbow smelt (2 percent) were second and third in rank by weight (Table 3-7).

The estimated biomass (based on flow) was 3,450,586 grams (3,451 kilograms) of which 2,764,552 grams (80 percent) was estimated as the weight of alewife (Table 3-8).



TABLE 3-4. ESTIMATED MONTHLY IMPINGEMENT BASED ON DAILY AVERAGE RATE AT NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Totals
No. of Samples	4	4	4	16	20	4	4	6	4	4	4	4	78
<hr/>													
Species													
Alewife	---	21	8,579	62,269	6,130	17,528	8,161	1,163	195	6,580	456	651	111,733
Rainbow smelt	---	385	628	981	2,568	6,128	16	2,465	1,238	78	270	1,364	16,121
Sculpin family	---	399	47	264	677	398	39	88	23	70	30	240	2,275
White perch	---	21	93	124	101	75	8	21	---	8	---	1,442	1,893
Gizzard shad	---	7	---	2	---	---	8	5	---	---	165	1,628	1,815
Tessellated darter	---	28	23	---	316	300	---	47	8	8	---	16	746
Trout perch	---	14	---	8	163	608	155	16	---	---	---	31	995
Spottail shiner	---	7	16	11	65	525	217	47	60	---	15	186	1,149
Crayfish	---	210	23	45	25	15	16	83	---	16	53	140	626
Threespine stickleback	---	---	---	4	---	---	---	---	---	8	8	388	408
Yellow perch	---	14	8	4	12	38	16	10	38	---	8	116	264
Smallmouth bass	8	35	---	8	8	8	---	62	8	---	---	23	160
Rock bass	---	7	---	2	5	45	---	41	---	---	8	39	147
Stonecat	---	---	8	---	3	15	23	47	15	16	8	8	143
American eel	---	---	---	---	2	---	8	16	---	---	---	116	142
White sucker	---	---	---	---	3	---	8	21	15	---	8	---	55
Chinook salmon	---	---	---	---	5	30	8	---	---	---	---	---	43
Clam	---	21	---	---	---	---	---	---	8	8	---	8	45
Emerald shiner	---	---	---	---	3	8	---	---	---	---	---	---	11
White bass	---	---	---	6	---	---	---	---	---	---	---	---	6
Bluesill	---	---	---	---	---	8	---	---	---	---	8	8	24
Unidentified (damaged)	8	---	---	---	---	---	---	---	---	8	8	---	24
Blacknose dace	---	---	---	---	3	---	---	---	---	---	---	---	3
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	16	16
Burbot	---	---	---	2	---	---	---	5	---	---	---	---	7
Pumpkinseed	---	---	---	---	---	---	---	---	---	16	---	---	16
Tadpoles	---	---	---	---	---	---	16	---	---	---	---	---	16
Rainbow trout	---	---	---	---	2	---	---	---	---	---	---	---	2
Northern pike	---	---	---	---	---	---	---	---	---	---	---	8	8
Shiner (family)	---	---	---	---	2	---	---	---	---	---	---	---	2
Bluntnose minnow	---	---	---	---	2	---	---	---	---	---	---	---	2
Brown bullhead	---	---	---	---	---	---	8	---	---	---	---	---	8
Black crappie	---	---	---	---	---	---	---	5	---	---	---	---	5
Total	16	1,169	9,425	63,730	10,095	25,729	8,707	4,142	1,608	6,816	1,045	6,428	138,910

NOTE: Dashes (---) indicate no catches made.

TABLE 3-5. ESTIMATED MONTHLY IMPINGEMENT BASED ON FLOW AT NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Totals
No. of Samples	4	4	4	16	20	4	4	6	4	4	4	4	78
Flow Sampled (MCM)	0.107	1.485	0.133	22.146	18.798	5.814	6.026	9.049	6.096	6.051	5.737	5.637	87.079
Tot. Monthly Flow (MCM)	1.632	11.875	1.344	41.109	32.336	42.059	46.460	46.772	45.588	45.685	41.868	41.933	398.661
Species													
Alewife	---	24	11,179	61,646	6,804	16,907	8,118	1,163	195	6,410	455	625	113,526
Rainbow smelt	---	440	818	971	2,852	5,910	15	2,465	1,234	75	263	1,309	16,352
Sculpin family	---	456	61	262	752	383	39	88	22	68	29	231	2,391
White perch	---	24	121	123	112	72	8	21	---	8	---	1,384	1,873
Gizzard shad	---	8	---	2	---	---	8	5	---	---	161	1,562	1,746
Tessellated darter	---	32	30	---	351	298	---	46	7	8	---	15	787
Trout perch	---	16	---	7	181	536	154	15	---	---	---	30	939
Spottail shiner	---	8	20	11	72	506	216	46	60	---	15	179	1,133
Crayfish	---	240	30	47	28	15	15	83	---	15	51	134	658
Threespine stickleback	---	---	---	4	---	---	---	---	---	8	7	372	391
Yellow perch	---	16	10	4	14	36	15	10	37	---	7	112	261
Smallmouth bass	15	40	---	7	9	7	---	62	7	---	---	22	169
Rock bass	---	8	---	2	5	43	---	41	---	---	7	37	143
Stonecat	---	---	10	---	3	15	23	46	15	15	7	7	141
American eel	---	---	---	---	2	---	8	15	---	---	---	112	137
White sucker	---	---	---	---	3	---	8	21	15	---	7	---	54
Chinook salmon	---	---	---	---	5	29	8	---	---	---	---	---	42
Clam	---	24	---	---	---	---	---	---	7	8	---	---	39
Emerald shiner	---	---	---	---	3	7	---	---	---	---	---	---	10
White bass	---	---	---	6	---	---	---	---	---	---	---	---	6
Bluesill	---	---	---	---	---	7	---	---	---	---	7	7	21
Unidentified (damaged)	15	---	---	---	---	---	---	---	---	8	7	---	30
Blacknose dace	---	---	---	---	3	---	---	---	---	---	---	---	3
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	15	15
Burbot	---	---	---	2	---	---	---	5	---	---	---	---	7
Pumpkinseed	---	---	---	---	---	---	---	---	---	15	---	---	15
Tadpoles	---	---	---	---	---	---	15	---	---	---	---	---	15
Rainbow trout	---	---	---	---	2	---	---	---	---	---	---	---	2
Northern pike	---	---	---	---	---	---	---	---	---	---	---	7	7
Shiner family	---	---	---	---	2	---	---	---	---	---	---	---	2
Bluntnose minnow	---	---	---	---	2	---	---	---	---	---	---	---	2
Brown bullhead	---	---	---	---	---	---	8	---	---	---	---	---	8
Black crappie	---	---	---	---	---	---	---	5	---	---	---	---	5
Total	30	1,336	12,279	63,094	11,205	24,771	8,658	4,137	1,599	6,638	1,023	6,160	140,930

NOTE: Dashes (---) indicate no catches made.

TABLE 3-6a LENGTH DISTRIBUTION OF SELECT REPRESENTATIVE IMPORTANT SPECIES IMPINGED AT  
WINE MILE POINT NUCLEAR STATION UNIT 1, 1983

ALEWEE

Centimeters (cm)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Interval Total
3.0 - 4.9	0	0	1	0	0	0	0	25	3	3	0	0	32
5.0 - 6.9	0	0	1	0	1	0	0	17	6	17	6	0	48
7.0 - 8.9	0	1	3	9	54	2	0	0	0	9	4	0	82
9.0 - 10.9	0	0	1	1	16	1	0	1	0	0	0	0	20
11.0 - 12.9	0	0	0	5	3	2	0	0	0	0	0	0	10
13.0 - 14.9	0	0	7	44	45	12	11	4	0	0	1	0	124
15.0 - 16.9	0	0	30	239	200	79	61	21	2	0	4	4	640
17.0 - 18.9	0	0	41	324	250	61	82	24	1	1	6	14	804
19.0 - 20.9	0	0	2	18	11	3	6	2	1	0	1	3	47
21.0 - 22.9	0	0	0	0	1	0	0	0	0	0	0	0	1
23.0 - 24.9	0	0	0	0	0	0	0	0	0	0	0	0	0
25.0 - 26.9	0	0	0	0	0	0	0	0	0	0	0	0	0
27.0 - 28.9	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Measured	0	1	86	640	581	160	160	95	13	30	22	21	1,809
Mean Length	0.0	8.0	16.2	16.7	15.8	16.4	17.0	11.2	9.0	6.7	12.4	17.6	15.8
Length Range (MIN)	0.0	8.0	4.5	7.4	6.4	8.7	14.3	2.9	4.2	3.7	5.5	15.5	2.9
(MAX)	0.0	8.0	19.2	20.6	21.0	19.8	20.0	19.4	19.2	17.7	19.3	19.8	21.0

TABLE 3-6b LENGTH DISTRIBUTION OF SELECT REPRESENTATIVE IMPORTANT SPECIES IMPINGED AT  
WINE MILE POINT NUCLEAR STATION UNIT 1, 1983

RAINBOW SMELT

Centimeters (cm)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Interval Total
3.0 - 4.9	0	0	0	0	0	0	0	50	19	0	0	0	69
5.0 - 6.9	0	1	6	16	37	6	0	0	8	5	14	0	93
7.0 - 8.9	0	5	20	50	184	80	0	26	0	0	4	4	373
9.0 - 10.9	0	4	14	60	84	42	0	7	1	0	0	0	212
11.0 - 12.9	0	15	15	49	37	16	2	2	0	0	1	20	157
13.0 - 14.9	0	7	12	95	64	11	0	1	0	0	0	10	200
15.0 - 16.9	0	1	7	84	43	4	0	1	0	0	0	8	148
17.0 - 18.9	0	0	4	33	20	1	0	0	0	0	0	4	62
19.0 - 20.9	0	1	1	6	7	0	0	0	0	0	0	1	16
21.0 - 22.9	0	0	0	4	3	0	0	0	0	0	0	0	8
23.0 - 24.9	0	0	0	1	0	0	0	0	0	0	0	0	1
25.0 - 26.9	0	0	0	0	0	0	0	0	0	0	0	0	0
27.0 - 28.9	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Measured	0	34	79	398	479	160	2	37	28	5	19	48	1,339
Mean Length	0.0	11.6	11.1	12.9	10.6	9.4	11.2	6.2	4.9	5.9	6.6	13.5	10.8
Length Range (MIN)	0.0	6.2	5.6	5.4	5.2	6.3	11.1	3.4	3.8	5.4	5.3	7.1	3.4
(MAX)	0.0	19.0	19.6	24.2	22.5	17.5	11.2	15.6	10.8	6.7	12.7	22.9	24.2

TABLE 3-6c LENGTH DISTRIBUTION OF SELECT REPRESENTATIVE IMPORTANT SPECIES IMPINGED AT  
NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

WHITE PERCH

Centimeters (cm)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Interval Total
3.0 - 4.9	0	0	0	1	0	0	0	0	0	0	0	1	2
5.0 - 6.9	0	1	1	11	5	0	0	0	0	0	0	8	26
7.0 - 8.9	0	2	6	24	28	5	0	0	0	0	0	30	95
9.0 - 10.9	0	0	4	20	12	0	0	0	0	0	0	6	42
11.0 - 12.9	0	0	1	2	0	0	0	0	0	0	0	3	6
13.0 - 14.9	0	0	0	0	1	0	0	0	0	0	0	1	2
15.0 - 16.9	0	0	0	0	1	0	0	0	0	0	0	1	2
17.0 - 18.9	0	0	0	1	0	0	0	0	0	0	0	1	2
19.0 - 20.9	0	0	0	0	1	0	0	0	0	0	0	1	2
21.0 - 22.9	0	0	0	1	3	0	1	1	0	0	0	0	6
23.0 - 24.9	0	0	0	2	5	1	0	3	0	0	0	0	11
25.0 - 26.9	0	0	0	0	4	1	0	0	0	0	0	0	5
27.0 - 28.9	0	0	0	3	2	0	0	0	0	0	0	0	5
29.0 - 30.9	0	0	0	1	3	0	0	0	0	0	0	0	4
Total Measured	0	3	12	66	65	7	1	4	0	0	0	52	210
Mean Length	0.0	6.8	8.7	10.3	13.1	12.8	21.0	23.3	0.0	0.0	0.0	8.7	11.0
Length Range (MIN)	0.0	5.7	6.8	4.9	5.7	7.8	21.0	22.5	0.0	0.0	0.0	4.9	4.9
(MAX)	0.0	7.6	11.0	29.5	30.5	25.7	21.0	24.0	0.0	0.0	0.0	20.7	30.5

TABLE 3-6d LENGTH DISTRIBUTION OF SELECT REPRESENTATIVE IMPORTANT SPECIES IMPINGED AT  
NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

YELLOW PERCH

Centimeters (cm)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Interval Total
3.0 - 4.9	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0 - 6.9	0	0	0	0	0	0	0	0	0	0	0	0	0
7.0 - 8.9	0	0	0	1	0	0	0	0	0	0	0	0	1
9.0 - 10.9	0	0	0	0	0	0	0	0	0	0	0	0	0
11.0 - 12.9	0	0	0	0	0	1	0	0	0	0	0	0	1
13.0 - 14.9	0	0	0	0	0	0	0	0	0	0	0	2	2
15.0 - 16.9	0	0	0	0	1	1	0	0	0	0	0	4	6
17.0 - 18.9	0	0	0	0	2	1	0	1	1	0	1	1	7
19.0 - 20.9	0	1	0	1	0	0	1	0	0	0	0	3	6
21.0 - 22.9	0	0	1	0	2	1	0	0	0	0	0	3	7
23.0 - 24.9	0	1	0	0	3	0	0	0	1	0	0	1	6
25.0 - 26.9	0	0	0	0	0	1	1	1	1	0	0	0	4
27.0 - 28.9	0	0	0	0	0	0	0	0	1	0	0	1	2
29.0 - 30.9	0	0	0	0	0	0	0	0	0	0	0	0	0
31.0 - 32.9	0	0	0	0	0	0	0	0	1	0	0	0	1
Total Measured	0	2	1	2	8	5	2	2	5	0	1	15	43
Mean Length	0.0	21.9	22.3	13.9	21.0	18.6	23.2	21.1	25.6	0.0	18.8	19.3	20.5
Length Range (MIN)	0.0	19.2	22.3	8.6	16.5	12.3	19.9	17.1	18.0	0.0	18.8	14.0	8.6
(MAX)	0.0	24.6	22.3	19.3	24.2	25.2	24.5	25.0	32.1	0.0	18.8	28.5	32.1



TABLE 3-6e LENGTH DISTRIBUTION OF SELECT REPRESENTATIVE IMPORTANT SPECIES IMPAIRED AT  
NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

SMALLMOUTH BASS

Centimeters (cm)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Interval Total
3.0 - 4.9	0	0	0	0	0	0	0	1	0	0	0	0	1
5.0 - 6.9	1	1	0	2	0	0	0	2	0	0	0	0	6
7.0 - 8.9	0	4	0	2	4	0	0	1	1	0	0	0	12
9.0 - 10.9	0	0	0	0	0	0	0	0	0	0	0	1	1
11.0 - 12.9	0	0	0	0	0	0	0	0	0	0	0	2	2
13.0 - 14.9	0	0	0	0	0	0	0	0	0	0	0	0	0
15.0 - 16.9	0	0	0	0	0	0	0	0	0	0	0	0	0
17.0 - 18.9	0	0	0	0	0	0	0	0	0	0	0	0	0
19.0 - 20.9	0	0	0	0	0	0	0	0	0	0	0	0	0
21.0 - 22.9	0	0	0	0	0	0	0	0	0	0	0	0	0
23.0 - 24.9	0	0	0	0	0	0	0	0	0	0	0	0	0
25.0 - 26.9	0	0	0	0	0	0	0	0	0	0	0	0	0
27.0 - 28.9	0	0	0	0	0	0	0	0	0	0	0	0	0
29.0 - 30.9	0	0	0	0	0	0	0	0	0	0	0	0	0
31.0 - 32.9	0	0	0	0	1	0	0	0	0	0	0	0	1
33.0 - 34.9	0	0	0	0	0	1	0	0	0	0	0	0	1
35.0 - 36.9	0	0	0	0	0	0	0	0	0	0	0	0	0
37.0 - 38.9	0	0	0	0	0	0	0	1	0	0	0	0	1
Total Measured	1	5	0	4	5	1	0	5	1	0	0	3	25
Mean Length	5.1	7.4	0.0	7.3	12.8	34.3	0.0	12.1	7.5	0.0	0.0	11.0	10.9
Length Range (MIN)	6.1	5.4	0.0	6.4	7.5	34.3	0.0	4.6	7.5	0.0	0.0	10.3	4.6
(MAX)	6.1	8.5	0.0	8.5	31.8	34.3	0.0	37.0	7.5	0.0	0.0	11.5	37.0

TABLE 3-6<sup>a</sup> LENGTH DISTRIBUTION OF SELECT REPRESENTATIVE IMPORTANT SPECIES IMAGED AT  
NINE MILE POINT NUCLEAR STATION, JULY 1, 1983.

[illegible]

TABLE 3-7. BIOMASS OF IMPINGED ORGANISMS COLLECTED AT WINE MILE POINT NUCLEAR STATION UNIT 1, 1983.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Totals
No. of Samples	4	4	4	16	20	4	4	6	4	4	4	4	78
Species													
Alewife	---	12	11,952	997,850	97,212	54,025	24,150	2,566	200	1,601	1,382	2,134	1,193,084
Rainbow smelt	---	476	761	7,142	10,699	2,843	16	951	76	6	109	1,782	24,861
Sculpin family	---	200	17	602	1,554	169	14	54	5	20	13	98	2,746
White perch	---	12	96	2,897	5,512	1,370	106	967	---	9	---	1,676	12,645
Gizzard shad	---	1,601	---	10	---	---	34	53	---	---	2,065	43,050	46,813
Tessellated darter	---	3	1	---	477	68	---	8	2	4	---	5	568
Trout perch	---	13	---	30	1,193	898	227	50	---	---	---	17	2,428
Spottail shiner	---	1	9	49	444	721	292	74	16	---	14	142	1,762
Crayfish	---	43	13	151	122	12	28	41	---	6	10	67	493
Threespine stickleback	---	---	---	2	---	---	---	---	---	2	1	62	67
Yellow perch	---	335	108	81	987	417	272	212	1,203	---	82	1,649	5,346
Smallmouth bass	3	29	---	22	506	610	---	625	6	---	---	59	1,860
Rock bass	---	31	---	<1*	285	452	---	1,735	---	---	4	1,232	3,740
Stonecat	---	---	1	---	138	261	218	500	98	119	88	93	1,516
American eel	---	---	---	---	102	---	5	243	---	---	---	5,600	5,950
White sucker	---	---	---	---	1,866	---	1,222	2,438	1,612	---	807	---	7,945
Chinook salmon	---	---	---	---	8	13	164	---	---	---	---	---	185
Emerald shiner	---	---	---	---	9	4	---	---	---	---	---	---	13
White bass	---	---	---	97	---	---	---	---	---	---	---	---	97
Bluesill	---	---	---	---	---	9	---	---	---	---	17	51	77
Clam	---	3	---	---	---	---	---	---	<1*	10	---	8	21
Blacknose dace	---	---	---	---	5	---	---	---	---	---	---	---	5
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	13	13
Burbot	---	---	---	1,376	---	---	---	571	---	---	---	---	1,947
Pumpkinseed	---	---	---	---	---	---	---	---	---	108	---	---	108
Tadpoles	---	---	---	---	---	---	9	---	---	---	---	---	9
Rainbow trout	---	---	---	---	1,624	---	---	---	---	---	---	---	1,624
Northern pike	---	---	---	---	---	---	---	---	---	---	---	131	131
Shiner family	---	---	---	---	1	---	---	---	---	---	---	---	1
Bluntnose minnow	---	---	---	---	2	---	---	---	---	---	---	---	2
Brown bullhead	---	---	---	---	---	---	327	---	---	---	---	---	327
Black crappie	---	---	---	---	---	---	---	7	---	---	---	---	7
Unidentified (damaged)	37	---	---	---	---	---	---	---	---	<1*	10	---	47
Total	40	2,759	12,958	1,010,309	122,746	61,872	27,084	11,095	3,219	1,885	4,602	57,869	1,316,438

\* If weight designated as <1 and was less than 0.5 grams, it was not added into the total.

NOTE: Dashes (---) indicate no catches made.

TABLE 3-8. ESTIMATED MONTHLY BIOMASS OF COLLECTED TAXA AT NINE MILE POINT NUCLEAR STATION UNIT 1, 1983

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Totals
No. of Samples Flow Sampled (MCM)	4	4	4	16	20	4	4	6	4	4	4	4	78
Flow Sampled (MCM)	0.107	1.485	0.133	22.146	18.798	5.814	6.026	9.049	6.096	6.051	5.737	5.637	87.079
Total Monthly Flow (MCM)	1.632	11.875	1.344	41.109	32.336	42.059	46.460	46.772	45.588	45.685	41.868	41.933	398.661
<b>Species</b>													
Alewife	---	96	120,698	1,846,710	167,228	390,831	186,179	13,265	1,499	12,087	10,085	15,874	2,764,552
Rainbow smelt	---	3,806	7,683	13,218	18,405	20,567	123	4,918	565	46	796	13,256	83,383
Sculpin family	---	1,600	176	1,115	2,672	1,223	106	280	35	149	95	729	8,180
White perch	---	96	969	5,360	9,481	9,913	817	4,998	---	64	---	12,467	44,165
Gizzard shad	---	12,801	---	18	---	---	262	274	---	---	15,069	320,240	348,664
Tessellated darter	---	21	12	---	821	489	---	41	18	29	---	39	1,470
Trout perch	---	104	---	55	2,152	6,496	1,750	258	---	---	---	125	10,940
Spottail shiner	---	9	89	91	764	5,216	2,247	380	120	---	102	1,056	10,074
Crayfish	---	344	135	279	210	84	213	214	---	45	74	498	2,096
Threespine stickleback	---	---	---	4	---	---	---	---	---	12	9	460	485
Yellow perch	---	2,679	1,091	150	1,698	3,017	2,097	1,096	8,997	---	598	12,267	33,690
Smallmouth bass	52	232	---	41	871	4,413	---	3,233	44	---	---	439	9,325
Rock bass	---	248	---	1	490	3,270	---	8,968	---	---	31	9,165	22,173
Stonecat	---	---	13	---	237	1,888	1,681	2,584	734	898	642	692	9,369
American eel	---	---	---	---	175	---	41	1,256	---	---	---	41,657	43,129
White sucker	---	---	---	---	3,210	---	9,421	12,602	12,056	---	5,889	---	43,178
Chinook salmon	---	---	---	---	13	92	1,264	---	---	---	---	---	1,369
Emerald shiner	---	---	---	---	16	27	---	---	---	---	---	---	43
White bass	---	---	---	179	---	---	---	---	---	---	---	---	179
Bluegill	---	---	---	---	---	61	---	---	---	---	124	379	564
Clam	---	22	---	---	---	---	---	---	5	75	---	---	102
Blacknose dace	---	---	---	---	9	---	---	---	---	---	---	---	9
Longnose dace	---	---	---	---	---	---	---	---	---	---	---	97	97
Burbot	---	---	---	2,547	---	---	---	2,951	---	---	---	---	5,498
Pumpkinseed	---	---	---	---	---	---	---	---	---	812	---	---	812
Tadpoles	---	---	---	---	---	---	69	---	---	---	---	---	69
Rainbow trout	---	---	---	---	2,794	---	---	---	---	---	---	---	2,794
Northern pike	---	---	---	---	---	---	---	---	---	---	---	974	974
Shiner family	---	---	---	---	1	---	---	---	---	---	---	---	1
Bluntnose minnow	---	---	---	---	3	---	---	---	---	---	---	---	3
Brown bullhead	---	---	---	---	---	---	2,521	---	---	---	---	---	2,521
Black crappie	---	---	---	---	---	---	---	37	---	---	---	---	37
Unidentified (damaged)	566	---	---	---	---	---	---	---	---	5	70	---	641
Total	618	22,058	130,466	1,869,768	211,250	447,587	208,791	57,355	24,073	14,222	33,584	430,414	3,450,586

NOTE: Totals may not equal sum at column or row due to rounding.  
Dashes (---) indicate no catches made.

### 3.4 WATER QUALITY (PERMIT SECTION IV.B.5)

Intake and discharge temperatures were measured at the beginning and end of each impingement sample. Intake temperatures were taken from the plant operational log and were also measured in the intake canal (in front of the trash bars). Discharge temperatures were measured in the discharge canal.

Intake temperatures recorded at Nine Mile Point Unit 1 ranged from a minimum of 0.0 C on 25 December to a maximum of 24.6 C on 9 August. Discharge temperatures (when the plant was operating near generating capacity during June - December) on sampling days varied from a low of 6.9 C on 7 December to a high of 41.1 C on 9 August.

#### REFERENCES

Ecological Analysts, Inc. 1982. 1981 Nine Mile Point Aquatic Ecology Studies.  
Prepared for Niagara Mohawk Power Corporation and Power Authority of the  
State of New York.

Ecological Analysts, Inc. 1983. 1982 Nine Mile Point Aquatic Ecology Studies.  
Prepared for Niagara Mohawk Power Corporation and Power Authority of the  
State of New York.

United States Atomic Energy Commission. January 1974. Final Environmental  
Statement Related to the Operation of Nine Mile Point Nuclear Station Unit 1.  
Docket No. 50-220.



APPENDIX A

EXCEPTIONS TO STANDARD OPERATING PROCEDURES

EXCEPTIONS TO STANDARD OPERATING PROCEDURES  
FOR IMPINGEMENT AT NINE MILE POINT NUCLEAR STATION UNIT 1

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30 MAR 1983      Void Impingement Sample - Traveling screen No. 12 was not functioning at the onset of the 30 March 1983 impingement sample. During the collection period, the screen was repaired and rotated. This introduced fish into the sample that were impinged previous to the start of the sample. The sample was rescheduled and completed on 31 March 1983.

6 APR 1983      Loss of Impingement Sample - During the collection period, high volumes of detritus caused the sample to overflow the impingement basket. An undetermined amount of sample was lost. The sample was rescheduled and completed on 11 April 1983.

21 APR 1983      Loss of Impingement Sample - During the collection period, high winds and waves brought large quantities of detritus into the cooling water intake. The sample overflowed the impingement basket and an undetermined amount of sample was lost. The sample was rescheduled and completed on 26 April 1983.

17 MAY 1983      Loss of Impingement Sample - During the collection period, high volumes of detritus caused the sample to overflow the impingement basket. An undetermined amount of sample was lost. The sample was rescheduled and completed on 20 May 1983.

18 MAY 1983      Loss of Impingement Sample - During the collection period, high volumes of detritus caused the sample to overflow the impingement basket. An undetermined amount of sample was lost. The sample was rescheduled and completed on 27 May 1983.

24 MAY 1983      Loss of Impingement Sample - During the collection period, high volumes of detritus caused the sample to overflow the impingement basket. An undetermined amount of sample was lost. The sample was rescheduled and completed on 28 May 1983.

7 DEC 1983      Loss of Impingement Sample - During the collection period, high winds and waves brought large quantities of detritus into the cooling water intake. The collection basket overflowed and an undetermined amount of sample was lost. The sample was rescheduled and completed on 12 December 1983.

NOTE: No impingement samples were missed during the 1983 sampling season. Whenever possible, samples were rescheduled using randomly selected days as required by the Environmental Technical Specifications, where applicable.

APPENDIX B

PLANT OPERATING CONDITIONS  
(PERMIT SECTION IV.C.9)

APPENDIX B PLANT OPERATING CONDITIONS AT NINE MILE POINT UNIT 1 NUCLEAR STATION DURING 1983

STATION: Nine Mile Point

MONTH: January 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C) Intake Discharge	
1	0	1	35,972.6	0	NA1	NA1
2	0	1	35,972.6	0	NA	NA
3	0	1	35,972.6	0	NA	NA
4	0	1	51,778.8	0	NA	NA
5	0	1	51,778.8	0	NA	NA
6	0	1	51,778.8	0	NA	NA
7	0	1	51,778.8	0	NA	NA
8	0	1	51,778.8	0	NA	NA
9	0	1	51,778.8	0	NA	NA
10	0	1	51,778.8	0	NA	NA
11	0	1	51,778.8	0	NA	NA
12	0	1	51,778.8	0	NA	NA
13	0	1	51,778.8	0	NA	NA
14	0	1	51,778.8	0	NA	NA
15	0	1	51,778.8	0	NA	NA
16	0	1	51,778.8	0	NA	NA
17	0	1	51,778.8	0	NA	NA
18	0	1	51,778.8	0	NA	NA
19	0	1	51,778.8	0	NA	NA
20	0	1	51,778.8	0	NA	NA
21	0	1	51,778.8	0	NA	NA
22	0	1	51,778.8	0	NA	NA
23	0	1	51,778.8	0	NA	NA
24	0	1	61,044.5	0	NA	NA
25	0	1	61,044.5	0	NA	NA
26	0	1	61,044.5	0	NA	NA
27	0	1	61,044.5	0	NA	NA
28	0	1	61,044.5	0	NA	NA
29	0	1	61,044.5	0	NA	NA
30	0	1	61,044.5	0	NA	NA
31	0	1	61,044.5	0	NA	NA

STATION: Nine Mile Point

MONTH: February 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C) Intake Discharge	
1	0	1	30,522.2	0	NA	NA
2	0	1	30,522.2	0	NA	NA
3	0	1	30,522.2	0	NA	NA
4	0	1	27,252.0	0	NA	NA
5	0	1	27,252.0	0	NA	NA
6	0	1	27,252.0	0	NA	NA
7	0	1	27,252.0	0	NA	NA
8	0/2	1	305,222.4	0	NA	NA
9	2	1	708,552.0	0	NA	NA
10	2	1	712,912.3	0	NA	NA
11	2	1	709,097.0	0	NA	NA
12	2	1	711,822.2	0	NA	NA
13	2	1	711,822.2	0	NA	NA
14	2	1	711,822.2	0	NA	NA
15	2	1	711,822.2	0	NA	NA
16	2/0	1	413,685.4	0	NA	NA
17	0	1	33,792.5	0	NA	NA
18	0	1	33,792.5	0	NA	NA
19	0	1	33,792.5	0	NA	NA
20	0/2	1	179,863.2	0	NA	NA
21	2	1	715,092.5	0	NA	NA
22	2	1	715,092.5	0	NA	NA
23	2	1	715,092.5	0	NA	NA
24	2	1	715,092.5	0	NA	NA
25	2	1	709,097.0	0	NA	NA
26	2	1	709,097.0	0	NA	NA
27	2	1	709,097.0	0	NA	NA
28	2	1	709,097.0	0	NA	NA

STATION: Nine Mile PointMONTH: March 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of -----Water Pumped-----	Mean Electrical -----Output (MWe)-----	Temperatures (C) Intake Discharge	
1	2/0	1	27,797.0	0	NA	NA
2	0	1	27,797.0	0	NA	NA
3	0	1	27,797.0	0	NA	NA
4	0	1	27,797.0	0	NA	NA
5	0	1	27,797.0	0	NA	NA
6	0	1	27,797.0	0	NA	NA
7	0	1	27,797.0	0	NA	NA
8	0	1	27,797.0	0	NA	NA
9	0	1	27,797.0	0	NA	NA
10	0	1	11,990.9	0	NA	NA
11	0	1	28,342.1	0	NA	NA
12	0	1	57,229.2	0	NA	NA
13	0	1	57,229.2	0	NA	NA
14	0	1	57,229.2	0	NA	NA
15	0	1	57,229.2	0	NA	NA
16	0	1	57,229.2	0	NA	NA
17	0	1	57,229.2	0	NA	NA
18	0	1	57,229.2	0	NA	NA
19	0	1	57,229.2	0	NA	NA
20	0	1	57,229.2	0	NA	NA
21	0	1	57,229.2	0	NA	NA
22	0	1	57,229.2	0	NA	NA
23	0	1	57,229.2	0	NA	NA
24	0	1	57,229.2	0	NA	NA
25	0	1	44,148.2	0	NA	NA
26	0	1	44,148.2	0	NA	NA
27	0	1	44,148.2	0	NA	NA
28	0	1	44,148.2	0	NA	NA
29	0	1	44,148.2	0	NA	NA
30	0	1	44,148.2	0	NA	NA
31	0	1	44,148.2	0	NA	NA

STATION: Nine Mile PointMONTH: April 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of -----Water Pumped-----	Mean Electrical -----Output (MWe)-----	Temperatures (C) Intake Discharge	
1	0/2	1	1,419,829.2	0	NA	NA
2	2	1	1,419,829.2	0	NA	NA
3	2	1	1,419,829.2	0	NA	NA
4	2	1	1,419,829.2	0	NA	NA
5	2	1	1,419,829.2	0	NA	NA
6	2	1	1,419,829.2	0	NA	NA
7	2	1	1,419,829.2	0	NA	NA
8	2	1	1,419,829.2	0	NA	NA
9	2	1	1,419,829.2	0	NA	NA
10	2	1	1,419,829.2	0	NA	NA
11	2	1	1,419,829.2	0	NA	NA
12	2	1	1,419,829.2	0	NA	NA
13	2	1	1,419,829.2	0	NA	NA
14	2	1	1,419,829.2	0	NA	NA
15	2	1	1,419,829.2	0	NA	NA
16	2	1	1,422,009.4	0	NA	NA
17	2	1	1,422,009.4	0	NA	NA
18	2	1	1,422,009.4	0	NA	NA
19	2	1	1,404,023.0	0	NA	NA
20	2	1	1,404,023.0	0	NA	NA
21	2	1	1,409,473.4	0	NA	NA
22	2	1	1,409,473.4	0	NA	NA
23	2	1	1,409,473.4	0	NA	NA
24	2	1	1,409,473.4	0	NA	NA
25	2	1	1,409,473.4	0	NA	NA
26	2	1	1,409,473.4	0	NA	NA
27	2	1	1,409,473.4	0	NA	NA
28	2/1	1	1,376,771.0	0	NA	NA
29	1/2	1	898,225.9	0	NA	NA
30	2/0	1	472,549.7	0	NA	NA

STATION: Nine Mile Point

MONTH: May 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C)	
					Intake	Discharge
1	0	1	46,873.4	0	NA	NA
2	0	1	46,873.4	0	NA	NA
3	0	1	46,873.4	0	NA	NA
4	0	1	46,873.4	0	NA	NA
5	0	1	46,873.4	0	NA	NA
6	0	1	46,873.4	0	NA	NA
7	0	1	46,873.4	0	NA	NA
8	0	1	46,873.4	0	NA	NA
9	0/2	1	652,412.9	0	NA	NA
10	2	1	1,409,473.4	0	NA	NA
11	2	1	1,409,473.4	0	NA	NA
12	2	1	1,409,473.4	0	NA	NA
13	2	1	1,431,275.0	0	NA	NA
14	2	1	1,431,275.0	0	NA	NA
15	2	1	1,431,275.0	0	NA	NA
16	2	1	1,431,275.0	0	NA	NA
17	2	1	1,431,275.0	0	NA	NA
18	2	1	1,431,275.0	0	NA	NA
19	2	1	1,431,275.0	0	NA	NA
20	2	1	1,431,275.0	0	NA	NA
21	2	1	1,431,275.0	0	NA	NA
22	2	1	1,431,275.0	0	NA	NA
23	2	1	1,429,639.9	0	NA	NA
24	2	1	1,429,639.9	0	NA	NA
25	2	1	1,429,639.9	0	NA	NA
26	2	1	1,429,639.9	0	NA	NA
27	2	1	1,434,545.3	0	NA	NA
28	2	1	1,434,545.3	0	NA	NA
29	2	1	1,434,545.3	0	NA	NA
30	2	1	1,434,545.3	0	NA	NA
31	2	1	1,434,545.3	0	NA	NA

STATION: Nine Mile Point

MONTH: June 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C)	
					Intake	Discharge
1	2	1	1,434,545.3	0	NA	NA
2	2	1	1,434,545.3	0	NA	NA
3	2	1	1,434,545.3	0	NA	NA
4	2	1	1,434,545.3	0	NA	NA
5	2	1	1,434,545.3	84	11.6	15.7
6	2	1	1,321,177.0	154	12.6	21.3
7	2	1	1,291,744.8	269	12.3	23.2
8	2	1	1,446,536.2	373	13.3	23.5
9	2	1	1,446,536.2	438	12.9	24.6
10	2	1	1,446,536.2	435	12.7	24.5
11	2	1	1,446,536.2	462	13.7	26.2
12	2	1	1,446,536.2	505	13.9	27.6
13	2	1	1,446,536.2	530	15.2	29.1
14	2	1	1,450,896.5	517	16.3	30.4
15	2	1	1,450,896.5	501	15.8	30.3
16	2	1	1,450,896.5	540	15.9	30.9
17	2	2	1,493,954.6	593	17.4	33.8
18	2	2	1,493,954.6	599	17.9	34.9
19	2	2	1,493,954.6	565	19.1	36.4
20	2	2	1,484,143.9	603	14.8	32.2
21	2	2	1,484,143.9	607	15.9	31.2
22	2	2	1,484,143.9	602	15.5	32.6
23	2	2	1,484,143.9	595	16.0	33.3
24	2	2	1,470,517.9	584	20.1	37.2
25	2	2	1,470,517.9	593	17.1	34.2
26	2	2	1,470,517.9	589	20.3	37.6
27	2	2	1,470,517.9	585	20.9	38.3
28	2	2	1,470,517.9	604	14.4	31.5
29	2	2	1,470,517.9	608	9.2	26.1
30	2	2	1,499,405.0	606	8.8	25.9



STATION: Wine Mile PointMONTH: July 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of -----Water Pumped-----	Mean Electrical -----Output (MWe)-----	Temperatures (C.)	
					Intake	Discharge
1	2	2	1,499,405.0	597	13.9	28.0
2	2	2	1,499,405.0	570	18.8	33.3
3	2	2	1,499,405.0	585	19.1	36.2
4	2	2	1,499,405.0	581	19.7	36.9
5	2	2	1,499,405.0	584	21.3	38.5
6	2	2	1,499,405.0	583	21.3	38.4
7	2	2	1,499,405.0	584	21.3	38.4
8	2	2	1,499,405.0	584	21.1	38.2
9	2	2	1,499,405.0	494	20.8	35.8
10	2	2	1,499,405.0	585	20.7	37.8
11	2	2	1,499,405.0	586	20.7	37.8
12	2	2	1,499,405.0	586	21.0	38.3
13	2	2	1,499,405.0	586	21.4	38.8
14	2	2	1,499,405.0	588	21.1	38.5
15	2	2	1,499,405.0	118	21.1	38.4
16	2	2	1,499,405.0	365	21.7	30.3
17	2	2	1,499,405.0	540	20.8	30.9
18	2	2	1,499,405.0	582	21.8	38.1
19	2	2	1,499,405.0	580	21.6	39.2
20	2	2	1,499,405.0	557	21.6	38.6
21	2	2	1,499,405.0	560	22.3	39.3
22	2	2	1,499,405.0	565	22.3	39.2
23	2	2	1,499,405.0	564	23.1	39.9
24	2	2	1,499,405.0	574	22.1	38.9
25	2	2	1,499,405.0	575	22.3	38.8
26	2	2	1,499,405.0	562	22.2	38.6
27	2	2	1,499,405.0	197	22.6	37.6
28	2	2	1,493,954.6	0	23.1	28.2
29	2	2	1,493,954.6	0	23.5	24.0
30	2	2	1,493,954.6	0	23.4	23.9
31	2	2	1,493,954.6	13.7	23.1	25.6

STATION: Wine Mile PointMONTH: August 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of -----Water Pumped-----	Mean Electrical -----Output (MWe)-----	Temperatures (C.)	
					Intake	Discharge
1	2	2	1,493,954.6	278	23.1	34.6
2	2	2	1,493,954.6	474	23.2	37.3
3	2	2	1,493,954.6	554	23.3	39.6
4	2	2	1,493,954.6	573	23.3	40.3
5	2	2	1,493,954.6	578	23.3	40.4
6	2	2	1,493,954.6	569	23.9	40.9
7	2	2	1,493,954.6	554	24.2	40.9
8	2	2	1,525,021.9	548	24.3	40.9
9	2	2	1,525,021.9	547	24.6	41.1
10	2	2	1,525,021.9	569	23.8	40.6
11	2	2	1,511,395.9	573	22.6	39.6
12	2	2	1,511,395.9	604	13.1	30.1
13	2	2	1,511,395.9	579	9.8	26.9
14	2	2	1,511,395.9	541	12.9	26.7
15	2	2	1,511,395.9	604	9.3	27.3
16	2	2	1,511,395.9	607	8.9	26.6
17	2	2	1,511,395.9	607	11.4	28.9
18	2	2	1,511,395.9	603	11.6	31.3
19	2	2	1,511,395.9	597	16.6	34.8
20	2	2	1,511,395.9	589	19.3	36.7
21	2	2	1,511,395.9	586	19.7	37.0
22	2	2	1,511,395.9	589	20.3	37.7
23	2	2	1,511,395.9	587	20.8	38.1
24	2	2	1,511,395.9	587	20.9	38.1
25	2	2	1,511,395.9	587	20.3	37.5
26	2	2	1,511,395.9	586	20.4	37.8
27	2	2	1,511,395.9	582	21.6	39.0
28	2	2	1,511,395.9	581	21.8	39.1
29	2	2	1,511,395.9	582	21.3	38.4
30	2	2	1,511,395.9	573	22.0	39.4
31	2	2	1,511,395.9	574	22.8	40.3

STATION: Wine Mile PointMONTH: September 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C)	
					Intake	Discharge
1	2	2	1,511,395.9	571	22.9	40.2
2	2	2	1,531,562.4	570	23.1	39.9
3	2	2	1,531,562.4	570	23.0	40.2
4	2	2	1,531,562.4	567	23.0	40.2
5	2	2	1,531,562.4	554	23.3	40.0
6	2	2	1,531,562.4	551	23.1	39.7
7	2	2	1,531,562.4	551	23.3	39.9
8	2	2	1,531,562.4	569	22.8	40.1
9	2	2	1,521,751.7	576	22.8	40.1
10	2	2	1,521,751.7	563	23.0	40.2
11	2	2	1,521,751.7	558	23.1	40.1
12	2	2	1,521,751.7	565	22.8	39.9
13	2	2	1,521,751.7	569	22.6	39.8
14	2	2	1,521,751.7	573	22.2	39.6
15	2	2	1,521,751.7	574	22.0	39.4
16	2	2	1,521,751.7	573	21.3	36.1
17	2	2	1,521,751.7	446	20.1	34.1
18	2	2	1,521,751.7	542	20.8	37.3
19	2	2	1,511,395.9	576	20.8	38.0
20	2	2	1,511,395.9	577	20.8	38.0
21	2	2	1,511,395.9	580	20.4	37.9
22	2	2	1,511,395.9	581	19.6	37.0
23	2	2	1,511,395.9	580	18.9	36.0
24	2	2	1,511,395.9	580	19.0	36.4
25	2	2	1,511,395.9	580	19.0	36.5
26	2	2	1,511,395.9	581	18.8	36.4
27	2	2	1,511,395.9	583	18.8	36.4
28	2	2	1,511,395.9	580	19.3	36.7
29	2	2	1,511,395.9	582	18.8	36.1
30	2	2	1,511,395.9	580	18.9	36.2

STATION: Wine Mile PointMONTH: October 1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C)	
					Intake	Discharge
1	2	2	1,511,395.9	578	18.6	35.9
2	2	2	1,511,395.9	581	18.9	36.4
3	2	2	1,511,395.9	586	18.7	36.3
4	2	2	1,511,395.9	561	18.8	35.0
5	2	2	1,511,395.9	591	18.5	35.6
6	2	2	1,511,395.9	593	17.9	35.4
7	2	2	1,498,860.0	593	17.6	35.2
8	2	2	1,498,860.0	593	18.0	33.8
9	2	2	1,498,860.0	495	17.7	31.8
10	2	2	1,498,860.0	586	16.8	34.1
11	2	2	1,498,860.0	599	16.4	33.8
12	2	2	1,498,860.0	605	14.0	31.4
13	2	1	1,451,986.6	600	13.8	31.3
14	2	1	1,451,986.6	597	15.1	32.8
15	2	1	1,451,986.6	602	14.9	32.4
16	2	1	1,451,986.6	600	15.7	33.2
17	2	1	1,451,986.6	600	15.7	33.3
18	2	1	1,455,801.8	599	15.8	33.4
19	2	1	1,457,437.0	601	15.4	32.9
20	2	1	1,454,166.7	602	13.8	31.3
21	2	1	1,454,166.7	604	13.9	31.3
22	2	1	1,454,166.7	604	13.3	30.8
23	2	1	1,454,166.7	603	11.9	29.4
24	2	1	1,454,166.7	603	12.8	30.3
25	2	1	1,454,166.7	604	11.2	28.7
26	2	1	1,454,166.7	603	12.3	30.0
27	2	1	1,454,166.7	601	12.8	30.4
28	2	1	1,454,166.7	604	11.5	29.2
29	2	1	1,454,166.7	608	11.6	29.1
30	2	1	1,454,166.7	606	12.3	29.9
31	2	1	1,454,166.7	606	11.2	28.7

STATION: Wine\_Mile\_PointMONTH: November\_1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C)	
					Intake	Discharge
1	2	1	1,443,265.9	605	10.7	28.3
2	2	1	1,443,265.9	605	10.9	28.4
3	2	1	1,445,991.1	605	11.4	28.8
4	2	1	1,445,991.1	607	11.3	28.8
5	2	1	1,443,265.9	438	10.6	23.8
6	2	1	1,443,265.9	522	10.6	25.6
7	2	1	1,443,265.9	582	10.4	27.1
8	2	1	1,443,265.9	605	10.9	28.3
9	2	1	1,443,265.9	603	10.9	28.4
10	2	1	1,443,265.9	606	10.4	27.9
11	2	1	1,443,265.9	608	10.7	28.1
12	2	1	1,443,265.9	608	11.0	28.3
13	2	1	1,443,265.9	606	9.5	26.9
14	2	1	1,445,991.1	603	9.4	26.7
15	2	1	1,445,991.1	515	9.0	23.6
16	2	1	1,445,991.1	422	8.3	21.1
17	2	1	1,445,991.1	436	8.3	22.9
18	2	1	1,443,265.9	436	7.5	20.5
19	2	1	1,443,265.9	554	8.4	23.1
20	2	1	1,443,265.9	584	8.2	25.2
21	2	1	1,443,265.9	609	8.2	25.6
22	2	1	1,443,265.9	608	7.6	24.9
23	2	1	1,443,265.9	610	8.1	25.4
24	2	1	1,443,265.9	610	8.3	25.8
25	2	1	1,443,265.9	612	7.0	24.5
26	2	1	1,443,265.9	611	6.1	23.5
27	2	1	1,443,265.9	610	7.1	24.3
28	2	1	1,441,630.8	611	7.2	24.6
29	2	1	1,443,265.9	611	6.8	24.2
30	2	1	1,443,265.9	613	5.6	22.6

STATION: Wine\_Mile\_PointMONTH: December\_1983

Date	No. of Circulating Water Pumps	No. of Service Water Pumps	Total Volume (m3) of Water Pumped	Mean Electrical Output (MWe)	Temperatures (C)	
					Intake	Discharge
1	2	1	1,438,905.6	613	4.2	20.7
2	2	1	1,438,905.6	597	4.4	21.0
3	2	1	1,441,630.8	444	5.6	18.6
4	2	1	1,441,630.8	560	6.2	22.4
5	2	1	1,441,630.8	607	6.6	23.5
6	2	1	1,443,265.9	609	6.3	14.9
7	2	1	1,443,265.9	613	4.8	6.9
8	2	1	1,443,265.9	613	3.6	20.8
9	2	1	1,438,905.6	611	4.3	22.0
10	2	1	1,438,905.6	613	4.1	21.8
11	2	1	1,438,905.6	612	4.8	22.6
12	2	1	1,438,905.6	611	5.5	22.5
13	2	1	1,439,995.7	613	4.3	22.1
14	2	1	1,439,995.7	613	3.9	21.5
15	2	1	1,443,265.9	613	5.3	23.1
16	2	1	1,443,265.9	613	3.5	21.2
17	2	1	1,371,320.6	612	2.2	21.7
18	2	1	1,241,056.1	611	2.3	22.3
19	2	1	1,255,772.2	613	2.7	22.7
20	2	1	1,269,943.2	610	2.6	22.7
21	2	1	1,269,943.2	597	4.8	23.9
22	2	1	1,285,749.4	609	2.8	22.3
23	2	1	1,256,862.2	609	0.9	20.9
24	2	1	1,256,862.2	516	0.0	16.4
25	2	1	1,256,862.2	606	0.0	19.2
26	2	1	1,256,862.2	610	0.0	20.0
27	2	1	1,241,146.2	611	0.2	20.4
28	2	1	1,287,749.4	613	1.5	21.8
29	2	1	1,241,781.3	614	0.2	20.2
30	2	1	1,214,349.1	607	0.3	20.0
31	2	1	1,185,462.0	592	0.2	20.7

1 On 20 March 1982, NMP Unit 1 went off line and continued to be off line into 1983. "NA" represents information not reported on NMP Unit 1 "401" monthly log.

APPENDIX C

SCIENTIFIC AND COMMON NAMES  
OF ALL TAXA COLLECTED IN 1983

SCIENTIFIC AND COMMON NAMES OF ALL TAXA COLLECTED IN 1983

<u>Scientific Name</u>	<u>Common Name</u>
<u>Alosa pseudoharengus</u>	Alewife
<u>Ambloplites rupestris</u>	Rock bass
<u>Anguilla rostrata</u>	American eel
<u>Catostomus commersoni</u>	White sucker
<u>Cottus spp.</u>	Sculpins
<u>Cyprinidae</u>	Shiners
<u>Dorosoma cepedianum</u>	Gizzard shad
<u>Etheostoma olmstedii</u>	Tessellated darter
<u>Esox lucius</u>	Northern pike
<u>Family Cambaridae</u>	Crayfish
<u>Gasterosteus aculeatus</u>	Threespine stickleback
<u>Ictalurus nebulosus</u>	Brown bullhead
<u>Lepomis gibbosus</u>	Pumpkinseed
<u>Lepomis macrochirus</u>	Bluegill
<u>Lota lota</u>	Burbot
<u>Micropterus dolomieu</u>	Smallmouth bass
<u>Mollusca</u>	Clam and clam shell
<u>Morone americana</u>	White perch
<u>Morone chrysops</u>	White bass
<u>Notropis atherinoides</u>	Emerald shiner
<u>Notropis hudsonius</u>	Spottail shiner
<u>Noturus flavus</u>	Stonecat
<u>Oncorhynchus tshawytscha</u>	Chinook salmon
<u>Osmerus mordax</u>	Rainbow smelt
<u>Perca flavescens</u>	Yellow perch
<u>Percopsis omiscomaycus</u>	Trout perch
<u>Pimephales notatus</u>	Bluntnose minnow
<u>Pomoxis nigromaculatus</u>	Black crappie
<u>Rana spp.</u>	Tadpole
<u>Rhinichthys atratulus</u>	Blacknose dace
<u>Rhinichthys cataractae</u>	Longnose dace
<u>Salmo gairdneri</u>	Rainbow trout

May 30, 1984

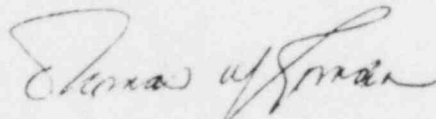
Dr. Edward G. Horn  
Chief, Bureau of Environmental  
Protection  
New York State Department of  
Environmental Conservation  
50 Wolf Road  
Albany, NY 12233

Dear Dr. Horn:

In accordance with section IV.c. of SPDES Permit No. NY-000-1015 for the Nine Mile Point Nuclear Station, enclosed is the 1983 Annual Biological Monitoring Report. This report concerns monitoring requirements for the Unit #1 facility.

Any questions concerning the enclosed report should be directed to Hugh J. Flanagan, at (315) 349-2428.

Sincerely,



Thomas W. Roman  
Station Superintendent  
Nine Mile Point Nuclear Station Unit #1

TWR/lo

cc: TJ Perkins  
HJ Flanagan  
JM Toennies  
CA Young  
FJ Grabowski  
B. Griffin (NYSDEC)  
W. Pearce (NYSDEC)  
E. Radle (NYSDEC)  
L. Flocke (NYSDEC)  
A. Geisendorfer (NYSDEC)  
Dr. Thomas E. Murley (USNRC-2 copies)  
Director, Office of NRR (USNRC-2 copies)✓

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