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FORWARDING ADDENDUM TO SUBJECT FACILITY'S ANNUAL ENVIRON OPERATING REPT FOR  
THE PERIOD OF JAN 1, 1977 - DEC 31, 1977 CONSISTING OF SR-89 & SR-90 DATA FOR  
AQUATIC SAMPLES COLLECTED IN NOV & DEC 1977 & SYNOPSIS OF NON-RADIOLOGICAL  
AQUATIC SAMPLES MISSED FOR *REASONS OTHER THAN INCLEMENT WEATHER*

PLANT NAME: NINE MILE PT - UNIT 1

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

May 3, 1978

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 an addendum to the Annual Environmental Operating Report for the period of January 1, 1977 through December 31, 1977.

The addendum includes Sr-89 and Sr-90 data for aquatic samples collected in November and December 1977 (Attachment I). Also included is a synopsis of non-radiological aquatic samples that were missed for reasons other than inclement weather (Attachment II). The Aquatic Ecology Studies 1977 Data Report was submitted on February 28, 1977, under separate cover.

Very truly yours,

ORIGINAL SIGNED BY R.R. SCHNEIDER

R.R. Schneider  
Vice President -  
Electric Production

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ATTACHMENT I

The following supplemental data is provided (Sr-89, Sr-90):

<u>Page</u>	<u>Table</u>	<u>Medium</u>	<u>Collection Date</u>
19	3	Bottom Sediments	12/77
20	4	Mollusks	11/77
20	4	Gammarus	11/77, 12/77
21-23	5	Fish	11/77, 12/77
24	6	Inlet Canal	4th Qtr.
50	19	Soil	11/77







TABLE 3

## GAMMA ISOTOPIC ANALYSIS OF PERIPHYTON

Collection Site	Collection Date	pCi/g (Wet Weight)						
		Cs-134	Cs-137	Co-60	Mn-54	Ce-144	Zr-Nb-95	Others*
OSWW	09/15/77	<0.08	<0.08	<0.08	<0.08	0.53 ± 0.09	0.22 ± 0.04	<0.08
NMPP	09/15/77	<0.08	<0.08	0.16 ± 0.04	<0.08	<0.40	0.50 ± 0.08	<0.08
JAF	09/15/77	<0.08	0.13 ± 0.03	<0.08	<0.08	<0.50	0.19 ± 0.05	<0.08
OSWW	12/07/77 <sup>(1)</sup>	<1.00	<1.00	<1.00	<1.00	<8.00	<1.00	<0.08
NMPP	11/10/77	<0.08	0.09 ± 0.03	<0.08	<0.08	0.57 ± 0.13	0.16 ± 0.05	<0.08
NMPP	12/08/77	<0.08	0.34 ± 0.06	1.20 ± 0.20	0.32 ± 0.06	2.00 ± 0.20	0.86 ± 0.12	<0.08
JAF	11/10/77	<0.06	0.14 ± 0.05	<0.08	<0.08	<0.40	<0.08	<1.00
JAF	12/08/77	<0.13	1.40 ± 0.20	0.43 ± 0.14	<0.13	<2.00	<0.38	<0.26

(1) 2 attempts made however sufficient sample could not be obtained to obtain lower MDL

## Sr-89 AND Sr-90 AND GAMMA ISOTOPIC ANALYSIS OF BOTTOM SEDIMENT

Collection Site	Collection Date	pCi/g (dry)					
		Sr-89	Sr-90	Gamma Emitters		Co-60	Others*
				Cs-134	Cs-137		
JAF	09/15/77	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
OSWW (Control)	09/15/77	<0.15	<0.15	<0.15	0.62 ± .14	0.32 ± 0.13	<0.15
NMPP	09/15/77	<0.15	<0.15	<0.15	0.31 ± .10	0.27 ± 0.12	<0.15
NMPP	12/08/77	<0.15	<0.15	0.80 ± 0.13	4.10 ± 0.40	0.72 ± 0.18	<0.15
JAF	12/08/77	<0.15	<0.15	0.73 ± 0.13	2.40 ± 0.20	0.58 ± 0.17	<0.15
OSWW (Control)	12/07/77	<0.04	0.052 ± 0.08	<0.15	0.73 ± 0.24	<0.15	<0.15

\*The spectrum is computer scanned from ~20 to ~2000 KeV. Specifically included are Ce-144, Ba-La-140, Cs-137, Zr-Nb-95, Co-58, Co-60, Mn-54, Zn-65. Naturally occurring gamma emitters such as K-40 and Ra daughters are frequently detected but not listed here.







TABLE 4

STRONTIUM 89 AND 90, GAMMA ISOTOPIC ANALYSIS OF MOLLUSKS

<u>Collection Date</u>	<u>Collection Site</u>	<u>pCi/g (Wet)</u>		
		<u>Sr-89</u>	<u>Sr-90</u>	<u>Gamma Emitters*</u>
09/15/77	FitzPatrick	< 0.04	0.11 ± 0.02	< 0.26
9/15/77	Nine Mile Point	< 0.04	0.11 ± 0.03	< 0.26
9/27/77	Oswego (Control)	< 0.04	0.08 ± 0.01	< 0.26
11/16/77	FitzPatrick	0.3(a)	0.3(a)	< 0.26
11/16/77	Nine Mile Point	0.04	0.07 0.02	0.23± 0.11
11/16/77	Oswego (Control)	0.04	0.38 0.04	< 0.26

STRONTIUM 89 AND 90, GAMMA ISOTOPIC ANALYSIS OF GAMMARUS

<u>Collection Date</u>	<u>Collection Site</u>	<u>pCi/g (Wet)</u>		
		<u>Sr-89</u>	<u>Sr-90</u>	<u>Gamma Emitters*</u>
08/11/77	Nine Mile Point	< 0.04	0.077 ± .036	< 0.08
08/11/77	FitzPatrick	< 0.05	< 0.05	< 0.08
08/11/77	Oswego (Control)	< 0.10(a)	0.32 ± .16	< 0.24(a)
11/10/77	Nine Mile Point	0.2	0.73 .24	< 0.34(a)
11/21/77	FitzPatrick	0.4(a)	0.4(a)	< 0.46(a)
12/21/77	Oswego (Control)	0.3(a)	0.3(a)	< 0.60(a)

(a) Insufficient sample for more sensitive analysis.

\*The spectrum is computer scanned from ~20 to ~2000 KeV. Specifically included are Ce-144, Ba-La-140, Cs-134, Cs-137, Zr-Nb-95, Co-58, Co-60, Mn-54, Zn-65. Naturally occurring gamma emitters such as K-40 and Ra daughters are frequently detected but not listed here.







TABLE 5

## STRONTIUM 89 AND 90, GAMMA ISOTOPIC ANALYSIS OF FISH SAMPLES

## OSWEGO

Collection Date	Sample Type	pCi/g(wet)						
		Sr-89	Sr-90	Cs-134	Cs-137	Zn-65	Fe-59	Other Gamma*
08/25/77	yellow perch	<0.04	0.016 ± .015	<0.13	<0.13	<0.26	<0.26	<0.13
08/15/77	white perch	<0.04	0.120 ± .050	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	catfish	<0.04	0.090 ± .039	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	shiners	<0.04	0.036 ± .014	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	sm. mouth bass	<0.04	0.070 ± .019	<0.13	0.13 ± .04	<0.26	<0.26	<0.13
08/25/77	sunfish	<0.04	0.092 ± .012	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	shad	<0.04	0.078 ± 0.16	<0.13	<0.13	<0.26	<0.26	<0.13
12/20/77	brown bullhead	<0.04	0.140 ± 0.02	<0.13	<0.13	<0.26	<0.26	<0.13
12/20/77	northern pike	<0.04	0.050 ± 0.015	<0.13	<0.13	<0.26	<0.26	<0.13
12/20/77	gizzard shad	<0.04	0.063 ± 0.019	<0.13	<0.13	<0.26	<0.26	<0.13
12/20/77	yellow perch	<0.04	0.030 ± 0.020	<0.13	<0.13	<0.26	<0.26	<0.13
11/04/77	white sucker	<0.04	0.026 ± 0.013	<0.13	<0.13	<0.26	<0.26	<0.13
11/04/77	white bass	<0.04	<0.04(a)	<0.13	<0.13	<0.26	<0.26	<0.13
11/04/77	spottail shiner	<0.05(a)	0.090 ± 0.060	<0.13	<0.13	<0.26	<0.26	<0.13
11/04/77	rainbow smelt	<0.04	<0.06(a)	<0.13	<0.13	<0.26	<0.26	<0.13
11/04/77	white perch	<0.04	0.056 ± 0.023	<0.13	<0.13	<0.26	<0.26	<0.13
11/17/77	yellow perch	<0.04	0.068 ± 0.022	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	yellow perch	<0.04	0.089 ± 0.036	<0.13	<0.13	<0.26	<0.26	<0.13

\*The spectrum is computer scanned from ~20 to ~2000 KeV. Specifically included are Ce-144, Ba-La-140, Cs-134, Cs-137, Zr-Nb-95, Co-58, Co-60, Mn-54, Zn-65. Naturally occurring gamma emitters such as K-40 and Ra daughters are frequently detected but not listed here.

(a) Insufficient samples for more sensitive analysis.







TABLE 5 (CONT.)

## STRONTIUM 89 AND 90, GAMMA ISOTOPIC ANALYSIS OF FISH SAMPLES

FITZPATRICK

Collection Date	Sample Type	pCi/g(wet)						
		Sr-89	Sr-90	Cs-134	Cs-137	Zn-65	Fe-59	Other Gamma*
08/25/77	Chinook salmon	<0.04	<0.01	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.095 ± .018	<0.13	0.19 ± .09	<0.26	<0.26	<0.13
08/25/77	Coho salmon	<0.04	0.041 ± .014	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.081 ± .021	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	Chinook salmon	<0.04	<0.012	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.042 ± .012	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	Chinook salmon	<0.04	0.047 ± .013	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.051 ± .015	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.17 ± .050	sample lost in processing				
08/25/77	yellow perch	<0.04	0.18 ± .040	<0.13	0.79 ± .20	<0.26	<0.26	<0.13
11/03/77	gizzard shad	<0.04	0.04 ± .040	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	spottail shiner	<0.04	0.10 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/17/77	white perch	<0.04	0.08 ± .033	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	white sucker	0.05 ± .02	0.05 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	rainbow smelt	<0.04	0.05 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	splake	<0.04	0.03 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	yellow perch	<0.04	0.11 ± .030	<0.13	<0.13	<0.26	<0.26	<0.13

\*The spectrum is computer scanned from ~20 to ~2000 KeV. Specifically included are Ce-144, Ba-La-140, Cs-134, Cs-137, Zr-Nb-95, Co-58, Co-60, Mn-54, Zn-65. Naturally occurring gamma emitters such as K-40 and Ra daughters are frequently detected but not listed here.







TABLE 5 (CONT.)

## STRONTIUM 89 AND 90, GAMMA ISOTOPIC ANALYSIS OF FISH SAMPLES

## NINE MILE POINT

Collection Date	Sample Type	pCi/g (wet)						
		Sr-89	Sr-90	Cs-134	Cs-137	Zn-65	Fe-59	Other Gamma*
08/25/77	white perch	<0.04	0.063 ± .012	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.050 ± .011	<0.13	0.21 ± .07	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.042 ± .016	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.042 ± .010	<0.13	0.19 ± .05	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.086 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.240 ± .050	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.090 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.057 ± .015	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.039 ± .013	0.17 ± .04	0.34 ± .07	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.040 ± .010	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	white perch	<0.04	0.029 ± .017	<0.13	<0.13	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.063 ± .015	<0.13	0.13 ± .06	<0.26	<0.26	<0.13
08/25/77	yellow perch	<0.04	0.059 ± .014	<0.13	0.17 ± .06	<0.26	<0.26	<0.13
08/25/77	white perch	0.03 ± .03	0.040 ± .040	<0.13	0.30 ± .10	<0.26	<0.26	<0.13
11/03/77	gizzard shad	<0.04	0.050 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/03/77	spottail shiner	<0.04	0.080 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/03/77	rainbow smelt	<0.04	0.030 ± .010	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	stonecat	<0.04	0.080 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	alewife	0.03 ± .02	<0.02	<0.13	<0.13	<0.26	<0.26	<0.13
11/21/77	white sucker	<0.04	0.140 ± .020	<0.13	<0.13	<0.26	<0.26	<0.13

\*The spectrum is computer scanned from ~20 to ~2000 KeV. Specifically included are Ce-144, Ba-La-140, Cs-134, Cs-137, Zr-Nb-95, Co-58, Co-60, Mn-54, Zn-65. Naturally occurring gamma emitters such as K-40 and Ra daughters are frequently detected but not listed here.







TABLE 6  
LAKE WATER SAMPLES

INLET CANAL

Monthly Composite - Gross Beta - pCi/l				<u>Location</u>	<u>Date</u>	Quarterly Composite - pCi/l		
<u>Date</u>	<u>NMP-1</u>	<u>JAF</u>	<u>OSWP</u>			<u>H-3</u>	<u>Sr-89</u>	<u>Sr-90</u>
1/77	27.3 ± 11.5	2.5 ± 20.7	2.9 ± 10.1	NMP-1	1st qtr/77	410 ± 90	<5.0	1.0 ± 1.0
2/77	1.7 ± 8.8	6.2 ± 8.1	20.2 ± 12.9	JAF	1st qtr/77	<400	<2.0	<2.0
3/77	21.0 ± 24.2	5.6 ± 7.5	2.6 ± 24.0	OSWP	1st qtr/77	370 ± 90	<5.0	1.0 ± 1.0
4/77	26.6 ± 30.4	8.0 ± 3.0	2.5 ± 29.8	NMP-1	2nd qtr/77	400 ± 350	<5.0	<2.0
5/77	0.00 ± 30.8	8.1 ± 3.0	0.0 ± 28.9	JAF	2nd qtr/77	<400	<6.0	<5.0
6/77	87.0 ± 27.0	6.7 ± 2.8	49.3 ± 26.2	OSWP	2nd qtr/77	530 ± 350	<5.0	<2.0
7/77	9.4 ± 3.3	21.0 ± 6.1	9.2 ± 9.1	NMP	3rd qtr/77	470 ± 120	<5.0	<2.0
8/77	1.0 ± 5.4	8.6 ± 5.9	3.0 ± 5.5	JAF	3rd qtr/77	530 ± 120	<5.0	<2.0
9/77	8.9 ± 5.8	66.8 ± 10.3	8.3 ± 6.0	OSWP	3rd qtr/77	430 ± 120	<5.0	<2.0
10/77	9.3 ± 5.0	20.4 ± 7.3	5.9 ± 5.5	NMP-1	4th qtr/77	510 ± 90	<5.0	<2.0
11/77	4.0 ± 5.6	4.8 ± 5.0	0.00 ± 5.0	JAF	4th qtr/77	380 ± 90	<5.0	<2.0
12/77	4.7 ± 4.5	4.7 ± 4.6	5.3 ± 5.5	OSWP	4th qtr/77	300 ± 90	<5.0	<2.0







TABLE 19  
Sr-90 AND GAMMA ISOTOPIC ANALYSIS  
OF SOIL SAMPLES

<u>Collection Site</u>	<u>Collection Date</u>	<u>Sr-90</u>	<u>pCi/g (dry)</u>	
			<u>Cs-137</u>	<u>Other Gamma*</u>
Alternate to D2 ON SITE	11/15/77	0.50 ± 0.05	1.7 ± 0.3	<0.15
NMPC sta. G ON SITE	11/15/77	0.17 ± 0.04	2.0 ± 0.3	<0.15
NMPC sta. F ON SITE	11/15/77	< 0.15	0.3 ± 0.1	<0.15
NMPC sta. E ON SITE	11/15/77	0.37 ± 0.04	0.7 ± 0.2	<0.15
NMPC sta. K ON SITE	11/15/77	< 0.15	0.3 ± 0.1	<0.15
NMPC sta. J ON SITE	11/15/77	0.48 ± 0.10	0.9 ± 0.2	<0.15
alternate to D1 ON SITE	11/15/77	0.65 ± 0.07	1.7 ± 0.3	<0.15
NMPC sta. H ON SITE	11/15/77	< 0.15	0.9 ± 0.1	<0.15
NMPC sta. I ON SITE	11/15/77	0.25 ± 0.05	0.8 ± 0.2	<0.15
NMPC sta. G OFF SITE	11/16/77	< 0.15	2.0 ± 0.4	<0.15
NMPC sta. F OFF SITE	11/16/77	0.24 ± 0.03	1.3 ± 0.3	<0.15
NMPC sta. E OFF SITE	11/16/77	0.29 ± 0.03	0.8 ± 0.2	<0.15
NMPC sta. D2 OFF SITE	11/16/77	0.23 ± 0.04	1.3 ± 0.3	<0.15
NMPC sta. D1 OFF SITE	11/16/77	0.14 ± 0.02	0.9 ± 0.2	<0.15
NMPC Sta. C OFF SITE	11/16/77	0.13 ± 0.02	0.7 ± 0.2	<0.15

\*The spectrum is computer scanned from ~20 to ~2000 KeV. Specifically included are Ce-144, Ba-La-134, Cs-134, Cs-137, Zr-Nb-95, Co-58, Co-60, Mn-54, Zn-65. Naturally occurring gamma emitters such as K-40 and Ra daughters are frequently detected but not listed here.







## ATTACHMENT II

The following aquatic samples (non-radiological) were missed or destroyed due to circumstances other than inclement weather:

1. Ichthyoplankton - August 8-9, 1977 15 Samples

Cause: Sample tows (5 minutes) during heavy zooplankton bloom resulted in greatly increased sample densities. The preservative (as per procedure) was not sufficient and the samples "soured" in transit to laboratory.

Corrective Action:

Revised procedure to allow for shorter tow times as conditions dictate.

2. Phytoplankton - June 1977 NMPE Transect #41 1 Sample

Cause: Malfunction of submarine photometer. There was no spare available at time of sampling.

Corrective Action:

Two photometers are now available for the 1978 season.

3. Water Quality - Dissolved Oxygen Fitz Transect 20' Contour 1 Sample

Cause: Procedure violation.

Corrective Action:

Sampling Procedure in itself was sufficient and revision is not warranted. As this particular analysis is an insitu analysis, the weekly field sample success report will be revised to include specific reference to insitu water quality analysis. This change in reporting procedure will allow for resampling within the specified frequency.



