NINE MILE POINT NUCLEAR STATION - UNIT 1 SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT JANUARY - JUNE 1994

NIAGARA MOHAWK POWER CORPORATION



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NINE MILE POINT NUCLEAR STATION - UNIT 1

JANUARY - JUNE 1994

SUPPLEMENTAL INFORMATION

Facility: Nine Mile Point Unit #1

Licensee: Niagara Mohawk Power Corporation

1. <u>TECHNICAL SPECIFICATION LIMITS</u>

- A) FISSION AND ACTIVATION GASES
 - 1. The dose rate limit of noble gases from the site to areas at and beyond the site boundary shall be less than or equal to 500 mrems/year to the total body and less than or equal to 3000 mrems/year to the skin.
 - 2. The air dose due to noble gases released in gaseous effluents from the Nine Mile Point 1 Station to areas at and beyond the site boundary shall be limited during any calendar quarter to less than or equal to 5 milliroentgen for gamma radiation and less than or equal to 10 mrads for beta radiation, and during any calendar year to less than or equal to 10 milliroentgen for gamma radiation and less than or equal to 20 mrads for beta radiation.

B&C) TRITIUM, IODINES AND PARTICULATES, HALF LIVES > 8 DAYS

- 1. The dose rate limit of Iodine-131, Iodine-133, Tritium and all radionuclides in particulate form with half-lives greater than eight days, released to the environs as part of the gaseous wastes from the site, shall be less than or equal to 1500 mrems/year to any organ.
- 2. The dose to a member of the public from Iodine-131, Iodine-133, Tritium and all radionuclides in particulate form with half lives greater than eight days as part of gaseous effluents released from the Nine Mile Point 1 Station to areas at and beyond the site boundary shall be limited during any calendar quarter to less than or equal to 7.5 mrems to any organ and, during any calendar year to less than or equal to 15 mrems to any organ.

D) LIQUID EFFLUENTS

- 1. The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gas, the concentration shall be limited to 2E-04 microcuries/ml total activity.
- 2. The dose or dose commitment to a member of the public from radioactive materials in liquid effluents released from Nine Mile Point Unit 1 to unrestricted areas shall be limited during any calendar quarter to less than or equal to 1.5 mrems to the total body and to less than or equal to 5 mrems to any organ, and during any calendar year to less than or equal to 3 mrems to the total body and to less than or equal to 10 mrems to any organ.







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MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

Described below are the methods used to measure or approximate the total radioactivity and radionuclide composition in effluents.

A) FISSION AND ACTIVATION GASES

Noble gas effluent activity is determined by on-line gamma spectroscopic monitoring (intrinsic germanium crystal) or gross activity monitoring (calibrated against gamma isotopic analysis of a 4.0L Marinelli grab sample) of an isokinetic stack sample stream.

B) IODINES

Iodine effluent activity is determined by gamma spectroscopic analysis (at least weekly) of charcoal cartridges sampled from an isokinetic stack sample stream.

C) PARTICULATES

Activity released from main stack is determined by gamma spectroscopic analysis (at least weekly) of particulate filters sampled from an isokinetic sample stream.

For emergency condenser vent releases, effluent curie quantities are estimated based on the isotopic distribution in the Condensate Storage Tank and the Emergency Condenser shell. Actual isotopic concentrations are found via gamma spectroscopy. Initial release rates of Sr-89, Sr-90 and Fe-55 are estimated by applying scaling factors to release rates of gamma emitters. For emergency condenser vent releases, the activity of Tritium released during normal operation or during batch releases is conservatively estimated by multiplying recent condensate storage tank H-3 activity by assumed steaming rates out the vents.

D) TRITIUM

Tritium effluent activity is estimated by liquid scintillation or gas proportional counting of monthly samples taken with an air sparging/water trap apparatus.

E) LIQUID EFFLUENTS

Isotopic analysis of a representative sample of each batch and composite analysis of non-gamma emitters.

F) SOLID EFFLUENTS

Isotopic contents of waste shipments are determined by gamma spectroscopy, gross alpha and water content analyses of a representative sample of each batch. Scaling factors established from primary composite sample analyses conducted off-site are applied, where appropriate, to find estimated concentration of non-gamma emitters. For low activity trash shipments, curie content is estimated by dose rate measurement and application of appropriate scaling factors.





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ATTACHMENT 1 Summary Data

Unit 1 <u>X</u> Ur	nit 2		Reporting Period January - June 1994
Liquid Effluents:			•
	10CFR20, Appendix B, Table II, Column 2		< c
	Average MPC (Qtr. 1) = N/A Average MPC (Qtr. 2) = N/A	L.	
	Average Energy (Fission and Activation gases - I detected during the first quarter 1994.	Viev)	There were no fission and activation gases
	Qtr. 1 : $E_Y = 0.00E + 00$ Qtr. 2 : $E_Y = 7.41E - 02$	Ē	= 0.00E + 00 = 1.62E - 01
Liquid: There w	vere no liquid releases during the reporting period.		· · · · · · · · · · · · · · · · · · ·
	Number of batch releases	:	
	Total time period for batch releases (hrs)	:	<u>_N/A_</u>
	Maximum time period for a batch release (hrs)	:	<u>N/A</u>
	Average time period for a batch release (hrs)	:	<u>N/A</u>
	Minimum time period for a batch release (hrs)	:	<u>_N/A_</u>
	Total volume of water used to dilute the liquid effluent during release period (L)	:	<u>.N/A_</u>
	Total volume of water available to dilute the liquid effluent during reporting period (L)	:	_2,58E+11_
UNIT 1 (ONLY)	•		
Gaseous (Emerg	ency Condenser Vent): There were no releases fro	om th	e operation of the emergency condenser vent.
	Number of batch releases	:	_0_
	Total time period for batch releases (hrs)	:	<u>_N/A_</u>
	Maximum time period for a batch release (hrs)	:	<u>N/A</u>
	Average time period for a batch release (hrs)	:	<u>N/A</u>
	Minimum time period for a batch release (hrs)	:	<u>N/A</u> .
Gaseous (Primar	y Containment Purge):		
	Number of batch releases	:	_ <u>1_</u> .
	Total time period for batch releases (hrs)	:	<u>8.00E+00</u>
	Maximum time period for a batch release (hrs)	:	<u>8,00E+00</u>
	Average time period for a batch release (hrs)	:	8.00E+00_
	Minimum time period for a batch release (hrs)	:	8.00E+00_



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ATTACHMENT 1 Summary Data

Un	it 1 <u>X</u> Unit 2 <u> </u>		Reporting Period January - June 1994					
АЬ	Abnormal Releases: There were no abnormal releases during the reporting period.							
Α.	Liquids:							
	Number of releases							
	Total activity released	<u>N/A</u> Ci	· · · · · · · · · · · · · · · · · · ·					
в.	Gaseous:							
Γ	Number of releases							
Γ	Total activity released	<u>N/A</u> Ci						

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Unit 1 <u>X</u> Unit 2 <u></u>

Reporting Period January - June 1994

	GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES, ELEVATED AND GROUND LEVEL						
				<u>1*</u> QUARTER	2 nd QUARTER	EST. TOTAL ERROR, %	
Α.	Fission & Activ 1. 2.	ation Gases ¹ Total release Average release rate	Ci µCi/sec		<u>2.69E+00</u> <u>3.42E-01</u>	5.00E+01	
в.	<u>lodines</u> ¹ 1. 2.	Total iodine-131 Average release rate for period	Ci µCi/sec		<u>3.48E-05</u> <u>4.43E-06</u>	3.00E+01	
c.	<u>Particulates</u> ² 1. 2. 3.	Particulates with half-lives >8 days Average release rate for period Gross alpha radioactivity	Ci µCi/sec Ci	<u>1.44E04</u> <u>1.85E05</u> <u>2.82E05</u>	<u>5.15E-04</u> <u>6.55E-05</u> <u>5.09E-05</u>	3.00E+01 2.50E+01	
D.	<u>Tritium</u> ² 1. 2.	Total release Average release rate for period	Ci µCi/sec	<u>5.77E+00</u> <u>7.42E-01</u>	<u>1.77E+01</u> 2.25E+00	5.00E+01	
Ε.	Percent of Tech Fission and Act Percent of Qua Percent of Qua Percent of Ann Percent of Ann Percent of Who Percent of Skin	n <u>Spec Limits</u> <u>ivation Gases</u> ¹ rterly Gamma Air Dose Limit (5 mrem) rterly Beta Air Dose Limit (10 mrem) ual Gamma Air Dose Limit to Date (10 mrem) ual Beta Air Dose Limit to Date (20 mrem) de Body Dose Rate Limit (500 mrem/yr) Dose Rate Limit (3000 mrem/yr)	% % % %	** ** **	3.48E-03 2.71E-03 1.74E-03 1.36E-03 8.82E-05 3.37E-05		
	<u>Tritium, lodines</u> (with half-lives Percent of Qua Percent of Anne Percent of Orga	e, and Particulates ² greater than 8 days) rterly Dose Limit (7.5 mrem) ual Dose Limit (15 mrem) an Dose Rate Limit (1500 mrem/yr)	% % %	<u>5.60E-02</u> 2.81E-02 1.14E-03	<u>9.86E-02</u> 7.44E-02 1.98E-03		

Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk. A lower limit of detection of $1.00E-04 \mu$ Ci/ml for required noble gases, $1.00E-11 \mu$ Ci/ml for required particulates, $1.00E-12 \mu$ Ci/ml for required lodines, and $1.00E-06 \mu$ Ci/ml for Tritium, as required by Technical Specifications, has been verified.

² Tritium, Iron-55, and Strontium results were not received from the off-site vendor at the time of this report. These numbers include estimates, and actual numbers will be provided in the next Semi-Annual Report.



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Unit 1 X_ Unit 2 ___

Reporting Period January - June 1994

GASEOUS EFFLUENTS - ELEVATED RELEASE					
······································		CONTINUO	US MODE ³		
Nuclides Released		<u>1"</u> QUARTER	<u>2nd</u> QUARTER		
1. Fission Gases ¹ Argon-41 Krypton-85 Krypton-85m Krypton-87 Krypton-88 Xenon-127 Xenon-133 Xenon-135 Xenon-135 Xenon-135 Xenon-137 Xenon-138		: : : : : : : : : : :	<u>1.58E-01</u> <u></u> <u>2.14E+00</u> <u>2.95E-01</u> <u></u>		
2. <u>lodines</u> ¹ Iodine-131 Iodine-133 Iodine-135	Ci Ci Ci	:::	<u>3,48E-05</u> 9.12E-04		
3. Particulates ^{1,2} Strontium-89 Strontium-90 Cesium-134 Cosium-137 Cobalt-60 Cobalt-58 Manganese-54 Barium-Lanthanum-140 Antimony-125 Niobium-95 Cerium-141 Cerium-144 Iron-59 Cesium-136 Chromium-51 Zinc-65 Iron-55 Molybdenum-99	000000000000000000000000000000000000000	2.48E-05 1.19E-04 	2.53E-04 2.83E-05 6.03E-05 1.68E-04 		
4. <u>Tritium</u> ²	Ci	<u>1.78E+00</u>	<u>1.30E+01</u>		

¹ Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk. A lower limit of detection of 1.00E-04 μ Ci/ml for required noble gases, 1.00E-11 μ Ci/ml for required particulates, 1.00E-12 μ Ci/ml for required lodines, and 1.00E-06 μ Ci/ml for Tritium, as required by Technical Specifications, has been verified.

² Tritium, Iron-55, and Strontium results were not received from the off-site vendor at the time of this report. These numbers include estimates, and actual numbers will be included in the next Semi-Annual Report.

³ No batch mode release occurred during the reporting period.



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Unit 2 ____

Reporting Period January - June 1994

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

There were no releases via the emergency condenser vent operation. Only leakage from the vents results in an assumed release based on the concentrations in the condensate storage tanks and condenser shell.

		CONTINUO	US MODE	ВАТСН	MODE
Nuclides Released		<u>1"</u> OUARTER	2 nd QUARTER	<u>1"</u> QUARTER	<u>2"</u> QUARTER
1. Fission Gases ¹ Argon-41 Krypton-85 Krypton-85m Krypton-87 Krypton-88 Xenon-133 Xenon-135 Xenon-135 Xenon-137 Xenon-137 Xenon-138 Xenon-127	0000000000000000	: : : : : : : : : :	9.53E-02	No Releases No Releases	No Releases No Releases
2. <u>lodines</u> ¹ lodine-131 lodine-133 lodine-135	Ci Ci Ci	**	: : :	No Releases No Releases No Releases	No Releases No Releases No Releases
3. <u>Particulates1</u> Strontium-89 Strontium-90 Cesium-134 Cesium-137 Cobalt-60 Cobalt-59 Manganese-54 Barium-Lanthanum-140 Antimony-125 Niobium-95 Cerium-141 Cerium-144 Iron-59 Cesium-136 Chromium-51 Zinc-65 Iron-55 Molybdenum-99	0000000000000000000000000	* * * * * * * * * *	7.16E-07 8.95E-08 1.79E-07 2.61E-06 2.52E-07 	No Releases No Releases	No Releases No Releases
4. <u>Tritium</u>	Ci	<u>3.99E+00</u>	<u>4.71E+00</u>	No Releases	No Releases

Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk. A lower limit of detection of $1.00E - 04 \mu$ Ci/ml for required noble gases, $1.00E - 11 \mu$ Ci/ml for required particulates, $1.00E - 12 \mu$ Ci/ml for required lodines, and $1.00E - 06 \mu$ Ci/ml for Tritium, as required by Technical Specifications, has been verified.





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Reporting Period January - June 1994

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LIQUID EFFLUENTS	- SUMMATION	OF ALL RELEASES

			<u>1"</u> QUARTER	<u>2^{ml}</u> <u>QUARTER</u>	EST. TOTAL
Α.	Fission & Activation Products 1. Total release (not including Tritium, gases, alpha) 2. Average diluted concentration during reporting period	Ci µCi/ml	No Releases No Releases	No Releases No Releases	5.00E+01
в.	<u>Tritium</u> 1. Total release 2. Average diluted concentration during reporting period	Ci µCi/ml	No Releases No Releases	No Releases No Releases	5.00E+01
c.	<u>Dissolved and Entrained Gases</u> 1. Total release 2. Average diluted concentration during reporting period	Ci µCi/ml	No Releases No Releases	No Releases No Releases	5.00E+01
D.	<u>Gross Alpha Radioactivity</u> 1. Total release	Ci	' No Releases	No Releases	5.00E+01
E.	<u>Volumes</u> Prior to dilution Volume of dilution water used during release period Volume of dilution water available during reporting period 	Liters Liters Liters	No Releases No Releases <u>1.29E+11</u>	No Releases No Releases <u>1.29E + 11</u>	5.00E+01 5.00E+01 5.00E+01
F.	Percent of Technical Specification Limits Percent of Quarterly Whole Body Dose Limit (1.5 mrem) Percent of Quarterly Organ Dose Limit (5 mrem) Percent of Annual Whole Body Dose Limit to Date (3 mrem) Percent of Annual Organ Dose Limit to Date (10 mrem) Percent of 10CFR20 Concentration Limit Percent of Dissolved or Entrained Noble Gas Limit (2.00E-04 μCi/ml)	% % % % %	No Releases No Releases No Releases No Releases No Releases No Releases	No Releases No Releases No Releases No Releases No Releases No Releases	

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Unit 1 <u>X</u> Unit 2 ____

Reporting Period January - June 1994

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LIQUID EFFLUENTS RELEASED				
		ВАТСН	MODE	
,		<u>_1*</u>	2~	
Nuclides Released		QUARTER	QUARTER	
Strontium-89	Ci	No Releases	No Releases	
Strontium-90	Cì	No Releases	No Releases	
Cesium-134	Ci	No Releases	No Releases	
Cesium-137	Ci	No Releases	No Releases	
lodine-131	Ci	No Releases	No Releases	
Cobalt-58	Ci	No Releases	No Releases	
Cobalt-60	Ci	No Releases	No Releases	
iron-59	Ci	No Releases	No Releases	
Zinc-65	Ci	No Releases	No Releases	
Manganese-54	Ci	No Releases	No Releases	
Chromium-51	Ci	No Releases	No Releases	
Zirconium-Niobium-95	Ci	No Releases	No Releases	
Molybdenum-99	Ci	No Releases	No Releases	
Fechnetium-99m	Ci	No Releases	No Releases	
3arium-Lanthanum-140	Ci	No Releases	No Releases	
Cerium-141	Ci	No Releases	No Releases	
Tungsten-187	Ci	No Releases	No Releases	
Arsenic-76	Ci	No Releases	No Releases	
lodine-133	Ci	No Releases	No Releases	
ron-55	Ci	No Releases	No Releases	
Noptunium-239	Cì	No Releases	No Releases	
Praseodymium-144	Ci	No Releases	No Releases	
lodine-135	Ci	No Releases	No Releases	
Dissolved or Entrained Gases	Ci	No Releases	No Releases	
Tritium	Ci	No Releases	No Releases	

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Unit 1	_X_ Unit 2				Report	ing Period <u>Janu</u>	ary - June 1994	
		SOLID WAS	TE AND IRRADI	ATED FUEL SH	IPMENTS			
A.1	ТҮРЕ		<u>Volume</u> (m³)		<u>Activity</u> ¹ (Ci)			
			<u>Class</u>		i	<u>Class</u>	-	
-		A	В	С	A	В	С	
1.	Spent Resin	<u>1.75E+01</u>	<u>1.29E+01</u>	<u>o</u>	<u>3.25E+01</u>	<u>1.58E+02</u>	<u>0</u>	
	Filter Sludge	<u>4.84E+00</u>	<u>1.03E+01</u>	<u>0</u>	<u>1.68E+01</u>	<u>9.67E+01</u>	<u>0</u>	
	Concentrated Waste Evaporator Bottoms	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
	Total	<u>2.23E+01</u>	<u>2.32E+01</u>	<u>0</u>	<u>4.93E+01</u>	<u>2.55E+02</u>	<u>0</u>	
						_	_	
2.	Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	<u>5.03E+00</u>	<u>0</u>	<u>0</u>	<u>1.51E+00</u>	<u>o</u>	<u>o</u>	
						-		
3	Irradiated Components							
	musiatou componisita	<u>0</u>	<u>1.64E+00</u>	<u>1.64E+00</u>	<u>0</u>	<u>4.18E+03</u>	<u>1.52E+04</u>	
			-					

The estimated total error is 5.00E+01%.



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			ording Ferrod Ja	nuary - June 1994
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A.1	ТҮРЕ	<u>Container</u>	<u>Package</u>	Solidification Agent
1.	Spent Resin	HIC	Type A	None
	Filter Sludge	HIC	Type A	<u>Cement</u>
	Concentrated Waste	<u>_N/A</u> _	<u>N/A</u>	<u>N/A</u>
2.	Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	<u>Steel-Liner</u>	Түре А	<u>None</u>
з.	Irradiated Components	Steel-Liner	Type B	None

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Unit	t 1 <u>X</u> Unit 2 <u> </u>	Reporting Period <u>January - June 1994</u>					
	SOLID WASTE AND IRRADIATED FUEL SHIPMENTS						
A.2	ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TY	PE OF WASTE)					
a.	. Spent Resins, Filter Sludges, Concentrated Waste:						
	Nuclide	Percent					
(1)	Co-60	5.27E+01					
(2)	Cs-137	1.71E+01					
(3)	Fe-55	1.13E+01					
(4)	Mn-54	9.79E+00					
(5)	Cs-134	4.05E+00					
(6)	Fe-59	1.47E+00					
(7)	Other	3.59E+00					
b.	Dry Compressible Waste, Dry Non-Compressible Waste (C	contaminated Equipment):					
	<u>Nuclide</u>	Percent					
la	Co-60	5.32F+01					
12	Mn:54	1.805+01					
121	Cr.51	1.002+01					
	Cr-51	1.102 + 01					
		1.052+01					
(5)	F6-35	2.052+00					
(6)	Fe-59	1.948+00					
(7)	Co-58	1.91E+00					
(8)	Other	1.40E+00					
	Irradiated Components:						
Ľ		· · · · · · · · · · · · · · · · · · ·					
1	Nuclide	Percent					
(1)	Fe-55	5.12E+01					
(2)	Co-60	3.98E+01					
(3)	Mn+54	6.61E+00					
(4)	Ni-63	2.39E+00					
(5)	Other	<1.00E+00					
<u> </u>							
ď.	Other: There were no shipments.						
	Nuclide	<u>Percent</u>					



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Unit 1 <u>X</u> Unit 2		Reporting Period <u>January - June 19</u>
	SOLID WASTE AND IRRADIATED FUEL SHIPMEN	ITS
A.3. SOLID WASTE DISPOSI	ION	
Number_of_Shipment	<u>Mode of Transportation</u>	Destination
<u>_13_</u>	Truck	Barnwell, SC
B. IRRADIATED FUEL SHIP There were no shipment	AENTS (DISPOSITION)	
Number_of_Shipment	Mode of Transportation	Destination
0	N/A	N/A



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	SOLID WASTE AND IRRADIATED FUEL	L SHIPMENTS ¹		
	ITE TO VENDORS FOR PROCESSING A	ND SUBSFOLIENT	RURIAI	
Below is a summary of Dry A ALARON, AMERICAN ECOLO	ctive Waste that was shipped off-site fo GY RECYCLE CENTER, INC., and/or SCI	r processing and t ENTIFIC ECOLOG	ourial by vendor (Y GROUP) during	facilities (i. 1 January -
June 1994. These totals we	e reported separately from "10CFR61 S	olid Waste Shippe	d for Burial" sinc	e (a) waste
classification and burial was p	erformed by the vendors, and (b) Techn colid waste (as defined by 1005P61) of	hical Specification	6.9.1 requires re	porting of
information provided in this se	ection, therefore, is in addition to that re	equired by the Tec	hnical Specificati	ions. The
following data represents the trash that was processed prio	actual shipments made from the off-site r to buriel	vendors of our n	on-compacted co	ommingled
1 TYPE OF WASTE - noncomp	cted comminated track chinned to Oak			
Ridge, TN for processing prior	to burial at Barnwell, SC	Burial Volume	Activity	Est. Tota
		<u>(m³)</u>	<u>(Ci)</u>	Error, 9
		2.06E+01	<u>1.49E-01</u>	5.00+0
C.2. ESTIMATE OF MAJOR	NUCLIDE COMPOSITION			
<u>Nuclide</u>	Percent			
(1) Co-60	6.14E+01			
(2) Cs-137	1.93E+01			
(3) Mn-54 (4) Cr-51	4.53E+00			
(5) Co-58	2.89E+00			
(6) Fe-59	1.45E+00			
(7) Other	1.33E+00	·		
C.3. SOLID WASTE DISPOS	TION ^{2 ,} '			
Number of Shipments	Mode of Transportation		Destinatio	<u>n</u>
37	Truck		Barnwall S	-
<u></u>	<u></u>	٠	_Bantweit, S	<u>.</u>
1 turn			• • • • • •	
 June results were not received provided as necessary in the n 	From the off-site vendor at the time of ext Semi-Annual Report.	this report. An up	dated attachme	nt will be
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		SOLID WASTE AND IRRAD	IATED FUEL SHIPMENTS				
D. SEWAGE WASTES SHIPPED TO A TREATMENT FACILITY FOR PROCESSING AND BURIAL							
Below is a s sanitary trea to a landfill.	summary of the sews atment facility and tr This is a site releas	age sludge and sanitary infl ransferred to a municipal se se, and therefore includes ti	uent sand and grit which was wage treatment facility, for s ne results from Unit 2 activitie	removed from the sit ubsequent drying and s, also.			
D.1. TYPE	OF WASTE						
		Burial Volume (L)	Activity (Ci)				
Sewage S	iludge There were r	no shipments with detectab	le quantities of plant-related n	uclides.			
Sanitary	Influent						
Sand and	l Grit	3.41E+02	2.04E-08				
D.2. ESTIN	IATE OF MAJOR NU	ICLIDE COMPOSITION					
<u>Nuclide</u>	Percent						
Co-60	1.00E+02						
D.3. SOLID	WASTE DISPOSITI	ON					
<u>Number o</u>	f Shipments Mo	de of Transportation	Destination				
*		*	Landfill				
* There v tank tru number is our is	vas one shipment of uck from NMP to the r of shipments to the ptention that the ma	i sanitary influent sand and o treatment facility. The nu o ultimate destination (i.e. 16 varial will be transformed to	grit with quantified Co-60 tha mber of shipments sent from indfill). Wastes are mixed with	t was sent by vendor NMP does not reflect h other sludge, dried,			



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Unit 1 X Unit 2

Reporting Period January - June 1994

SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL

There was one revision to the Unit 1 ODCM during the reporting period. Copies of revisions 13 and 14 are attached and below is a summary of changes presented to and approved by the Station Operations Review Committee in June 1994. The summary also includes a justification for each change.

Change Summary

- 1) Page 69 An editorial change is made to locations 4/34 on Figure 5.1-2 (memo from B.S. Zacharek to E.D. Thomas, dated January 6, 1994). The map revision (Figure 5.1-2) corrects an air sampling and an environmental TLD location which were not properly transferred during conversion to CAD. Calculations or deposition (D/Q) parameters are not impacted.
- 2) Page 16 A change to section 3.2, "Dose and Dose Rate Determinations" is made to clarify that for ground level releases from the Emergency Condenser Vent, without tube leakage, a condensate storage tank and emergency condenser shell isotopic distribution is to be used. This clarification improves the accuracy of dose calculations by applying correct isotopic distributions to the evaluation. No changes are made to the calculational methodology, with the exception of which isotopic distribution to apply. Without this clarification, an overly conservative off-gas isotopic distribution would have been applied (Reference, NRC Assessment of ODCM, April 1994).





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Unit 2 _

Unit 1 <u>X</u>

Reporting Period January - June 1994

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SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM

There were no changes to the Process Control Program during the reporting period.





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ATTACHMENT 9

Reporting Period January - June 1994

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SUMMARY OF INOPERABLE MONITORS

Monitor

Dates of Inoperability

Cause and Corrective Actions

There were no inoperable monitors for a period greater than 30 days during the reporting period.



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Unit 1 X Unit 2 ___

Reporting Period January - June 1994

UPDATE OF RELEASE AND DOSE DATA FOR GASEOUS (ELEVATED AND GROUND LEVEL) AND LIQUID EFFLUENTS								
Update of data using actual 1993.	l results from t	the off-site ve	ndors for Strontium, Ti	ritium, an	d Iron-55 for the	fourth quarter of		
			GASEOUS <u>4th QUARTER</u>		LIQ <u>4* QU</u>	UID ARTER		
Nuclide ¹			Activity (Ci)		<u>Activi</u>	ty_(Ci)		
Sr-89			<u>2.28E-05</u>		No Re	leases		
Sr-90		ú	<u>••</u>	1	No Re	leases		
H-3			<u>6.15E+00</u>		No Re	leases		
Fe-55			<u>1.41E-05</u>		No Re	leases		
<u>Particulatos</u>		~			GASEOUS	LIQUID		
	1. Particula	tes with	Ci		<u>3.69E – 05</u>	<u>N/A</u>		
	half-lives 2. Average for perio	s >8 days release rate d	μ Ci/sec		<u>4.64E-06</u>	<u>N/A</u>		
<u>Tritium</u>								
	 Total rel Average for perio 	ease release rate d	Ci µCi/sec		<u>6.15E+00</u> 7.73E-01	N/A N/A		
<u>Tritium, lodines, and</u> <u>Particulates (with half- lives greater than 8</u> <u>days)</u>					GASEOUS	LIQUID		
1	1. Percent	of Quarterly	%		2.40E-03	N/A		
	2. Percent	of Annual	%		<u>9.92E-01</u>	(Quarteny)		
	3. Percent - Dose R (Gaseou - Dose L	of Organ ate Limit s)(Quarterly) imit (Liquid)	%		(Annual) 4.75E – 05 (Quarterly) <u>N/A</u> (Annual)	(Annual) <u>N/A</u> (Quarterly) <u>N/A</u> (Annual)		
	4. Percent Concent (Liquid)	of 10CFR20 ration Limit	%		<u>N/A</u>	<u>N/A</u>		
	5. Percent or Entrai Gas (Liq	of Dissolved ned Noble uid)	%		<u>N/A</u>	<u>N/A</u>		
			•					

² The dose is to the maximally exposed organ for gaseous effluents.

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¹ Concentrations less than the lower limit of detection, as required by Technical Specifications are indicated with a double asterisk.

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Unit 1 <u>X</u> Unit 2 ____

Reporting Period July - December 1993

	SOLID WAST	re and Irradi	ATED FUEL SH	IPMENTS		
A.1 TYPE	<u>Volume</u> (m³)				<u>Activity</u> ² (Ci)	
	<u>Class</u>			<u>Class</u>		
	. A	В	С	A	В	С
1. Spent Resin	<u>5.83E+00</u>	<u>0</u>	<u>0</u>	<u>6.06E+00</u>	<u>0</u>	<u>0</u>
Filter Sludge	<u>5.50E+00</u>	<u>0</u>	<u>0</u>	<u>1.40E+01</u>	<u>0</u>	<u>0</u>
Concentrated Waste, Eveporator Bottoms	<u>0</u>	<u>0</u>	<u>0</u>	<u>o</u>	<u>0</u>	<u>0</u>
Total	<u>1.13E+01</u>	<u>0</u>	<u>0</u>	<u>2.01E+01</u>	<u>o</u> .	<u>0</u>
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
						·····
3 Irradiated Components	There were no	irradiated comp	onents shipped	l for burial during	the reporting pe	riod.
	<u>0</u>	<u>0</u>	<u>0</u>	<u>o</u>	<u>0</u>	<u>0</u>

This Attachment 6 supersedes the information provided in the July - December 1993 Semi-Annual Radioactive Effluent Release Report for Nine Mile Point Nuclear Station Unit 1 and includes a change to the class A filter sludge activity as a result of an independent technical evaluation of the off-site vendor analyses performed by Niagara Mohawk Power Corporation.

The estimated total error is 5.00E+01%.



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Unit	1 <u>X</u> Unit 2	Report	ing Period <u>July</u>	- December 1993					
	SOLID WASTE AND IRRADIATED FUEL SHIPMENTS								
A.1	ТҮРЕ	<u>Container</u>	<u>Package</u>	Solidification <u>Agent</u>					
1.	Spent Resin	HIC	Type A	<u>None</u>					
	Filter Sludge	HIC	Туре А	Cement					
	Concentrated Waste	<u>_N/A_</u>	<u>_N/A</u>	<u>_N/A_</u>					
2.	Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	<u>_N/A_</u>	<u>_N/A_</u>	<u>_N/A_</u>					
3.	Irradiated Components	<u>_N/A_</u>	<u>_N/A</u>	<u>_N/A_</u>					

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¹ This page is included in the update for completeness. There are no changes to information previously reported in the July-December 1993 Semi-Annual Report.

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Unit 1 <u>X</u>	Unit 2	Reporting Period July - December 1993
	SOLID WASTE AND	IRRADIATED FUEL SHIPMENTS
A.2 ESTIN	MATE OF MAJOR NUCLIDE COMPOSITION (B	Y TYPE OF WASTE)
a. Spent F	Resins, Filter Sludges, Concentrated Waste:	
	Nuclide	Percent
(1) (2) (3) (4) (5) (6)	Co-60 Cs-137 Fe-55 Mn-54 Cs-134 Other	3.55E+01 3.07E+01 2.27E+01 6.54E+00 2.89E+00 1.67E+00
b. Dry Co	mpressible Waste, Dry Non-Compressible Was	ete (Contaminated Equipment): There were no shipments.
	<u>Nuclide</u>	Parcent
c. Irradiat	ed Components: There were no shipments.	
	<u>Nuclide</u>	<u>Percent</u>
d. Other:	There were no shipments.	
	<u>Nuclide</u>	Percent
¹ This Atta Release F composit Niagara N	chment 6 supersedes the information provided teport for Nine Mile Point Nuclear Station Unit ion for A.2.a as a result of an independent teo Nohawk Power Corporation.	d in the July - December 1993 Semi-Annual Radioactive Effluent 1 and includes a change in the percentages of the major nuclide chnical evaluation of the off-site vendor analyses performed by



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A.3. SOLID WASTE DISPOSITION <u>Number of Shipmente</u> <u>Mede of Transportation</u> <u>Destination</u> <u>2</u> <u>Truck</u> <u>Barnwell, SC</u> B. IRRADIATED FUEL SHIPMENTS (DISPOSITION): There were no shipmente. <u>Number of Shipments</u> <u>Mode of Transportation</u> <u>Destination</u> <u>0</u> <u>N/A</u> <u>N/A</u> . 				sporting Ferrod July - Decemb
A.3. SOLID WASTE DISPOSITION		SOLI	D WASTE AND IRRADIATED FUEL SHIPMEN	its
Number of Shipments Made of Transportation Destination 2 Truck Barnwell, SC B. IRRADIATED FUEL SHIPMENTS (DISPOSITION): There were no shipments. Mode of Transportation Destination Q N/A N/A N/A	A.3.	SOLID WASTE DISPOSITION		
2. <u>Truck Barnwell, SC</u> B. IRRADIATED FUEL SHIPMENTS (DISPOSITION): There were no shipmente. <u>Number of Shipments Mode of Transportation Destination O N/A N/A To be page is included in the update for completeness. There are no changes to the information providently are to the in</u>		Number of Shipments	Mode of Transportation	Destination
B. IRRADIATED FUEL SHIPMENTS (DISPOSITION): There were no chipmente. <u>Number of Shipments</u> <u>Mede of Transportation</u> <u>Destination</u> <u>Q</u> <u>N/A</u> <u>N/A</u>		2	Truck	<u>Barnwell, SC</u>
B. IRRADIATED FUEL SHIPMENTS (DISPOSITION): There were no shipments. <u>Number of Shipments</u> <u>O</u> <u>NIA</u> <u>NIA</u> <u>NIA</u>				
There were no shipments. Mode of Transportation Destination Q N/A N/A	в.	IRRADIATED FUEL SHIPMENTS	(DISPOSITION):	
Number of Shipments Mode of Transportation Destination Q N/A N/A		There were no shipments.		
Q. N/A N/A		Number of Shipments	Mode of Transportation	Destination
¹ This page is included in the update for completeness. There are no changes to the information previously set		<u> </u>	<u>N/A</u>	<u>_N/A_</u>
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•				Reporti	ng Period <u>July -</u>	December 19
		SOLID WASTE AND IRRA	DIATED FUE	el shipments		
C. SOLI	D WASTE SHIPPED O	FF-SITE TO VENDORS FOR PRO	DCESSING A	ND SUBSEQUENT	BURIAL	
Beld ALA sep the defi is in ma	ow is a summary of D ARON, QUADREX, and parately from "10CFR6 vendors, and (b) Tecl ined by 10CFR61) shi n addition to that requ de from the off-site ve	ry Active Waste that was shipp d/or SCIENTIFIC ECOLOGY GRO 1 Solid Waste Shipped for Buria nnical Specification 6.9.1 require pped off-site during the reporting ired by the Technical Specification ondors of our non-compacted compared to the second	ed off-site fo UP) during J al" since (a) es reporting g period". T ions. The fo mmingled tra	or processing and b uly - December 19 waste classificatio of "information for he information pro llowing data repre ash that was proce	burial by vendor f <u>193</u> . These totals n and burial was each class of so wided in this sec sents the actual so assed prior to bur	acilities (i.e s were repor performed b lid waste (as tion, therefor shipments rial.
C.1. TYI con pro	PE OF WASTE - noncontaminated fuel pool economication of the second prior to burial	ompacted commingled trash and quipment shipped to Oak Ridge, at Barnwell, SC	TN for	Burial Volume (m³)	Activity (Ci)	Est. Tota <u>Error, %</u>
				<u>2.33E+01</u>	<u>5.94E-01</u>	<u>5.00+01</u>
C.2.	ESTIMATE OF MA	OR NUCLIDE COMPOSITION			·	<u> </u>
	Nuclide	Percent	1			
(1)	Co-60	6.17E+01				
(2)	Cs-137	2.09E+01				
(3) (4)	Mn-54 Co-58	8.09E+00				
(5)	Fe-55	1.83E+00				
(6)	Fe-59	1.58E+00				
(7)	Other	1.65E+00	1			
	Number of Shipmen	<u>ts Mode of Tr</u>	ansportation uck	L	<u>Destination</u> Barnwell, S	<u>n</u> . <u>C.</u>
	02					
	<u></u>					
	<u></u>					
	<u></u>					
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	<u>. UZ</u>					
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	<u>.</u>	·				
	<u></u>	·				
1 This Efflu Stat	Attachment 6 supers uent Release Report w tion Unit 1.	edes the information provided ir ith updated burial volume, activi	n the July - I ity, and num	December 1993 Se ber of shipments f	emi-Annual Radio for Nine Mile Poir	active nt Nuclear

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Unit 1 X Unit 2

Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

D. SEWAGE SLUDGE SHIPPED TO A TREATMENT FACILITY CENTER FOR PROCESSING AND BURIAL

There were no shipments of sewage sludge with detectable quantities of plant-related nuclides from NMP to the treatment facility during the reporting period.

This page is included in the update for completeness. There are no changes to the information previously reported in the July - December 1993 Semi-Annual Report.



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Unit 1 X Unit 2 ____

Reporting Period January - June 1993

1		SOLID WAS	TE AND IRRADI	ATED FUEL SH	IIPMENTS			
A.1	ТҮРЕ	<u>Volume</u> (m³)			Activity ² (Ci)			
			<u>Class</u>			Class		
		A	В	С	A	В	С	
1. S	ipent Resin	<u>4.79E+01</u>	<u>0</u>	<u>0</u>	<u>3.50E+02</u>	<u> </u>	<u>0</u>	
Fi	ilter Sludge	<u>0</u>	<u>1.65E+01</u>	<u>0</u>	<u>0</u>	- <u>2.27E+02</u>	<u>0</u>	
C B	Concentrated Waste Evaporator Nottoms	<u>0</u>	<u>1.10E+01</u>	<u>0</u>	<u>0</u>	<u>3.06E+01</u>	<u>0</u>	
т	otal	<u>4.79E+01</u>	<u>2.75E+01</u>	<u>0</u>	<u>3.50E+02</u>	<u>2.58E+02</u>	<u>0</u>	
2. D N ((Dry Compressible Waste, Dry Ion-Compressible Waste Contaminated Equipment)	<u>1.14E+01</u>	<u>0</u>	<u>0</u>	<u>4.06E+00</u>	<u>0</u>	<u>0</u>	
3 1/	rediated Components	There were no	irradiated comp	onents shipped	d for burial during	the reporting pe	riod.	
5 . II	radiated Components	<u>0</u>	<u>0</u>	<u>0</u>	<u>o</u>	<u>0</u>	<u>o</u>	

This Attachment 6 supersedes the information provided in the January - June 1993 Semi-Annual Radioactive Effluent Release Report for Nine Mile Point Nuclear Station Unit 1 and corrects an error in the Semi-Annual Report for the filter sludge classification and also includes a change to the class B filter sludge activity and class A D.A.W. activity as a result of an independent technical evaluation of the off-site vendor analyses performed by Niagara Mohawk Power Corporation.

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The estimated total error is 5.00E+01%.



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Unit	1 <u>X</u> Unit 2	Керс	orting Period <u>Ja</u>	nuary - June 1993
	SOLID WASTE AND IRRADIATED	FUEL SHIPMENTS		
A.1	ТҮРЕ	<u>Container</u>	Package	Solidification <u>Agent</u>
1.	Spent Resin	HIC	Type A	<u>None</u>
	Filter Sludge	HIC	Туре А	Cement
	Concentrated Waste	HIC	Туре А	_Cement_
2.	Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	<u>Steel-Liner</u>	Түре А	None
з.	Irradiated Components	<u>_N/A_</u>	<u>_N/A_</u>	<u>_N/A_</u>

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This Attachment 6 supersedes the information provided in the January - June 1993 Semi-Annual Radioactive Effluent Release Report with a correction to the package type for concentrated waste.

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Unit 1 <u>X</u>	Unit 2	Reporting Period January - June 199
	SOLID WASTE AND	IRRADIATED FUEL SHIPMENTS
A.2 EST	MATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)
a. Spent	Resins, Filter Sludges, Concentrated Waste:	
	Nuclide	Percent
(1)	Co-60	6.22E+01
2)	Fe-55	1.41E+01
3)	Mn-54	1.17E+01
4) 5)	Co-58	8.24E+00 1.08E±00
6)	Other	2.68E+00
Dry C	ompressible Waste, Dry Non-Compressible Wa	este (Contaminated Equipment):
	Nuclide	Percent
	Macinao	recent
1)	Co-60	5.31E+01
2)	Cs-137	2.47E+01
3)	Mn-54	1.14E+01
(4)	C0-58 E2 E0	6.10E+00
	F0-59 F0 FF	1.762+00
7)	F8+55 Other	
,	ottor	1.021 +00
. Irradia	ted Components: There were no shipments.	
	Nuclide	Percent
i. Other:	: There were no shipments.	
	Nuclide	Percent
	r	
		,
	•	
This A Releas A.2.a	Attachment 6 supersedes the information provi se Report for Nine Mile Point Nuclear Station U and percentages for A.2.b as a result of an in	ided in the January - June 1993 Semi-Annual Radioactive Effluent Jnit 1 and includes changes to the nuclide order and percentages fo dependent technical evaluation of the off-site vendor analyses
perfor	med by Niagara Mohawk Power Corporation.	



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	ASTE AND IRRADIATED FUEL SHIPMEN	TS
A.3. SOLID WASTE DISPOSITION		
Number of Shipments	Mode of Transportation	Destination
17	_Truck_	<u>Barnwell, S</u>
B. IRRADIATED FUEL SHIPMENTS (DISPO	SITION):	
There were no shipments.		
Number of Shipments	Mode of Transportation	<u>Destination</u>
<u> </u>	<u>N/A</u>	<u>_N/A</u>

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Unit 1 _2	K Unit 2			Reporting Period	January - June 1993
		SOLID WASTE AND IRRADIATI	ED FUEL SHIPMEN	rs	
C. SOLI Bel AL. sep anc eac pro rep pro	ID WASTE SHIPPED O ow is a summary of D ARON, QUADREX, and parately from "10CFR6 d burial was performed ch class of solid waste vided in this section, t presents the actual ship cessed prior to burial.	FF-SITE TO VENDORS FOR PROCESS ry Active Waste that was shipped off l/or SCIENTIFIC ECOLOGY GROUP) d 1 Solid Waste Shipped for Burial" (i.e by the vendors, and (b) Technical Sp (as defined by 10CFR61) shipped off herefore, is in addition to that require oments made from the off-site vendor	SING AND SUBSEQ -site for processing uring <u>January - Jur</u> ., Section A of Tab ecification 6.9.1 re -site during the rep d by the Technical s of our non-compe	UENT BURIAL and burial by ve <u>e 1993</u> . These ble 3A) since (a) orting period". T Specifications. acted commingled	andor facilities (i.e., totals were reported waste classification of "information for The information The following data d trash that was
C.1. TY cor pro	PE OF WASTE - noncontaminated fuel pool economication of the pool economic states and the pool economic	mpacted commingled trash and quipment shipped to Oak Ridge, TN fo at Barnwell, SC	r , Burial Volu (m³)	ume Activit (Ci)	ty Est. Total Error, %
			<u>1.92E+0</u>	<u>01 2.71E–</u>	<u>01 5.00+01</u>
C.2.	ESTIMATE OF MAJ				
	Nuclide	Percent			
(1) (2) (3) (4) (5) (6)	Co-60 Cs-137 Mn-54 Co-58 Fe-59 Other	5.98E+01 2.27E+01 9.54E+00 5.10E+00 1.88E+00 9.34E-01			
C.3.	SOLID WASTE DIS	POSITION ²			
	Number of Shipment	<u>Mode of Transpo</u>	<u>rtation</u>	Dest	<u>ination</u>
	29	Truck		Barny	vell, SC
2		·			, ,
¹ This Sen ship	s Attachment 6 supers ni-Annual Radioactive I oments for Nine Mile P	edes the updated January - June 199 Effluent Release Report with an updat oint Nuclear Station Unit 1.	3 information prov ed number of shipr	ided with the Jul nents and destin	y - December 1993 ation for all
² The buri	number of shipments al. This does not repr	reported here represents the total nur esent the number of shipments Niaga	mber that was ship ra Mohawk sent to	ped from the off be processed.	-site vendor for



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SOLID WASTE AND IRRADIATED FUEL SHIPMENTS D. SEWAGE SLUDGE SHIPPED TO A TREATMENT FACILITY CENTER FOR PROCESSING AND BURIAL Below is a summary of the sewage siudge which was removed from the site sanitary treatment facility and transferred to a municipal sewage treatment facility. for subsequent drying and disposal to a landfill. This is a release, and therefore includes the results from Unit 2 activities, also. D.1. TYPE OF WASTE Burial Volume Activity (L) (G) sewage sludge 3.03E+04 2.4E-07 D.2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION Nuclide Parcent Co-60 1.00E+02 D.3. SOLID WASTE DISPOSITION Number of Shipments Mode of Transportation Destination - Landfill			napotun	g , unou <u>panuary - U</u>
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D.3. SOLID WASTE DISPOSITION Number of Shipments Mode of Transportation *	Co-60 1.00E+	02		
Number of Shipments Mode of Transportation Destination *	D.3. SOLID WASTE DIS	POSITION		
Note: There were two shipments of sewage sludge with quantified Co-60 that were sent by vendor vacuum tan from NMP to the treatment facility. The number of shipments sent from NMP does not reflect the number shipments to the ultimate destination (i.e. landfill). Sludge is mixed with municipal sludge, dried, and subsequently transferred to a state approved landfill by municipal personnel.	Number of Shipments	Mode_of_Transportation	Destination	
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 ¹ This page is included in the update for completeness. There are no changes to the data previously reported in January - June 1993 Semi-Annual Report. 	 ¹ This page is included in t January - June 1993 Ser 	atment facility. The number of s imate destination (i.e. landfill). S arred to a state approved landfill b he update for completeness. The mi-Annual Report.	udge is mixed with municipal sl by municipal personnel. are are no changes to the data p	udge, dried, and reviously reported in



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OFF-SITE DOSE CALCULATION MANUAL

Revision 13 and 14 enclosed per Attachment 7 of the Semi-Annual Radioactive Effluent Release Report



