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August 28, 1989

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Semi-Annual Effluent Release Report

Gentlemen:

Enclosed please find the Semi-Annual Effluent Release Report in compliance with paragraph 6.9.1.8 of the Unit 1 and Unit 2 Technical Specifications. This report contains the strontium results for the first and second quarters. As required, the meteorological data is being kept in our files on site and will be available to you if requested.

Very truly yours,

GCC/PTC/jmh
Enclosure

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SEMI-ANNUAL EFFLUEN. RELEASE REPORT
CALVERT CLIFFS NUCLEAR POWER PLANT
FIRST HALF - 1989

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CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
SUPPLEMENTAL INFORMATION

Facility - Calvert Cliffs Nuclear Power Plant

Licensee - Baltimore Gas & Electric Company

I. REGULATORY LIMITS

A. Fission and Activation Gases

1. The instantaneous release rate of noble gases in gaseous effluents shall not result in a site boundary dose rate greater than 500 mrem/year to the whole body or greater than 3000 mrem/year to the skin.

2. Gaseous Radwaste Treatment System and the Ventilation Exhaust Treatment System shall be used to reduce gaseous emissions when the calculated gamma dose due to gaseous effluents exceeds 1.20 mrad or the calculated beta dose due to gaseous effluents exceeds 2.40 mrad at the site boundary in a 92 day period.

3. The air dose at the site boundary due to noble gases released in gaseous effluents shall not exceed:

   10 mrad gamma radiation/quarter

   20 mrad beta radiation/quarter

   20 mrad gamma radiation/year

   40 mrad beta radiation/year

4. All of the above parameters are calculated according to the methodology specified in the Offsite Dose Calculation Manual (ODCM).

B. Iodines and Particulates with Half Lives Greater than Eight Days

1. The instantaneous release rate of Iodines and particulates in gaseous effluents shall not result in a site boundary dose in excess of 1500 mrem/year to any organ.

2. The Gaseous Radwaste Treatment System and the Ventilation Exhaust Treatment System shall be used to reduce radioactive materials in gaseous effluents when calculated doses exceed 1.8 mrem to any organ in a 92 day period at the site boundary.

3. The dose to a member of the public at the site boundary from Iodine 131 and particulates with half lives greater than eight days in gaseous effluents shall not exceed:

15 mrem to any organ per quarter

30 mrem to any organ per year

less than .1% of the above limits as a result of burning contaminated oil

4. All of the above parameters are calculated according to the methodology specified in the ODCM.

C. Liquid Effluents

1. The concentrations of radioactive isotopes in liquid effluents from the plant shall not exceed the values specified in 10 CFR, Part 20, Appendix B, for unrestricted areas.

2. The liquid radwaste treatment system shall be used to reduce the radioactive isotopes in liquid effluents from the plant when the calculated doses to unrestricted areas exceed 0.36 mrem to the whole body, or 1.20 mrem to any organ in a 92 day period.

3. The dose to a member of the public in unrestricted areas shall not exceed:

3 mrem whole body dose per quarter

10 mrem dose to any organ per quarter

6 mrem whole body dose per year

20 mrem dose to any organ per year

4. All of the liquid dose parameters are calculated according to the methodology specified in the ODCM.

II. MAXIMUM PERMISSABLE CONCENTRATIONS

A. Fission and Activation Gases

Prior to the batch release of gaseous effluents, the gas gamma activities are summed. If the total does not exceed the dose rate limitations for the most limiting isotope, then the batch is released. If the most limiting isotope criteria is not met, then a detailed dose rate calculation is performed as described in the ODCM.

B. Iodines and Particulates with Half Lives Greater than Eight Days

Compliance to the dose rate limitations from Iodines and particulates is demonstrated by calculating the maximum quantity that could be seen on a weekly sample. This is reduced by a factor of 0.5 for conservatism. As long as the I-131 (most limiting isotope) releases in a seven day period do not exceed 12.5 Ci, then no further analyses are needed to verify compliance without exceeding the limits of 1.B.3.

C. Liquid Effluents

The MPCs used for radioactive materials released in liquid effluents are in accordance with Technical Specifications and/or are derived from the use of notes to Appendix B, 10 CFR, Part 20. In all cases, the most restrictive (lowest) MPC found for each isotope is used regardless of solubility.

III. TECHNICAL SPECIFICATION REPORTING REQUIREMENTS (Section 6.9.1.8)

A. Previous Calendar Year (1988) Dose Assessment Summary

During 1988 liquid releases from Calvert Cliffs resulted in a maximum organ dose of 3.67E-01 mrem and a maximum whole body dose of 5.36E-02 mrem. This was less than 2% of the allowable yearly Technical Specification organ dose limit and less than 1% of the allowable yearly Technical Specification whole body dose limit. This dose was calculated using ODCM methodology (Adult Fish and Shellfish Pathways). The Gastro-Intestinal Tract was the maximum organ dose pathway.

Gaseous Noble Gas Releases resulted in a maximum of 1.84E-01 mrad gamma and 4.84E-01 mrad beta exposure. Iodine and particulate releases from Calvert Cliffs resulted in a maximum organ exposure of 5.37E-01 via the Thyroid Pathway. These doses were calculated using ODCM methodology. All gaseous release pathways were below 2% of their allowable Technical Specification limits for 1988.

B. 40 CFR 190 Total Dose Compliance

Based upon the releases for the first half of 1989 and the ODCM calculations, the maximum exposed individual would receive less than 2% of the allowable dose. This does not include the direct radiation contribution which did not show a statistical difference greater than the normal background. A more detailed evaluation will be reported in the Annual Radiological Environmental Monitoring Report.

C. Solid Waste Report Requirements

During the first half of 1989, the types of radioactive solid waste shipped from Calvert Cliffs were radioactive resin, which was dewatered and shipped in high integrity containers, dry compressible waste, which was shipped in Type H containers, and CVCS filter waste, which was shipped in a steel liner stablilized with concrete.

D. ODCM and PCP Changes

No changes were made in the first half of 1989.

E. Radioactive Gaseous Effluent Monitoring Instrumentation

The Unit 2 Main Vent Gaseous Effluent Monitor (2-RI-5415) was out of service for greater than thirty days. This notification is required by Technical Specification 3.3.3.9. The monitor was declared out of service on March 26, 1989, due to the pump tripping on high flow. Due the inability to obtain spare parts, the monitor remained out of service until May 5, 1989.

IV. AVERAGE ENERGY

Not Applicable

V. MEASUREMENTS AND APPROXIMATIONS AND TOTAL RADIOACTIVITY

A. Fission and Activation Gases

1. Batch Releases

Prior to each batch release of gas from a pressurized gas decay tank, a sample is collected and analyzed for each significant gaseous isotope using a Ge detector. The total activity released is based on the pressure/volume relationship (gas laws) of the tank.

Prior to and after the release of gas as a result of purging containment, samples are collected and analyzed for each significant gaseous isotope using a Ge detector. The total activity released is based on containment volume and purge rate. Activity buildup while purging is also considered.

2. Continuous Releases

During the release of gas from the main vents, samples are collected and analyzed at least weekly for each significant gaseous isotope using a Ge detector. The total activity released during the week is based on the total sample activity decay corrected to the midpoint of the sample period and multiplied by the main vent flow for the week.

B. Iodine and Particulates

1. Batch Releases

The total activity released from a pressurized gas decay tank, containment purges and containment vents as Iodines and particulates is accounted for by the main vent Iodine and particulate continuous samples.

2. Continuous Releases

During the release of gas from the main vents, samples of Iodines and particulates are collected using a charcoal and particulate filter, respectively. The filters are removed weekly and are analyzed for each significant gamma isotope using a Ge detector. The total activity released for the week is based on the total sample activity found on the filters decay corrected to the midpoint of the sample period and multiplied by the main vent flow for the week. These weekly particulate filters are then composited to form monthly and quarterly composites at which time gross alpha and strontium 89 and 90 are analyzed.

C. Liquid Effluents

1. Batch Releases

Prior to the release of liquid from a waste tank, a sample is collected and analyzed for the concentration of each significant gamma energy radionuclide to demonstrate compliance with Section I.C.1 above using the water flow rate in each discharge conduit into which the effluent is discharged at the time of discharge. The total activity released in each batch is determined by multiplying the volume released times the concentration of each isotope. The actual volume released is based on the difference in tank levels prior to and after the release. A proportional composite sample is also withdrawn for each release and this is used in turn to prepare monthly and quarterly composites for use in analyses of gross alpha, strontium 89 and 90, and tritium.

When steam generator blowdown is discharged to the circulating water conduits, it is sampled daily and these samples are used in turn to prepare a weekly blowdown composite based on each day's blowdown. The weekly composite is analyzed for each significant isotope using a Ge detector and these results are multiplied by the actual quantity of blowdown to determine the total activity released. The weekly composite is also used to prepare monthly and quarterly composites for use in analyses of tritium, gross alpha, and strontium 89 and 90.

2. Continuous Releases

None

D. Estimation of Total Error

Total error on all releases was estimated using as a minimum the random counting error associated with typical releases. In addition to the random error, the detector to sample geometry systematic error during gamma counting was determined. This included an estimate of sample volume error and sample pipetting error.

More specifically the following other systematic errors were also examined:

1. Liquid

   a) Error in volume of liquid released prior to dilution during batch releases.

   b) Error in volume of liquid released via steam generator blowdown.

   c) Error in amount of dilution water used during the reporting period.

2. Gases

   a) Error in main vent release flow.

   b) Error in sample flow rate.

   c) Error in containment purge release flow.

   d) Error in gas decay tank pressure.

   Where errors could be estimated they are usually considered additive.

VI. BATCH RELEASES

	1989 1ST QUARTER	1989 2ND QUARTER
A. Liquid		
1. Number of batch releases	6.90E+01	1.90E+01
2. Total time period for batch releases (min)	1.59E+04	8.55E+03
3. Maximum time period for a batch release (min)	6.28E+02	6.46E+02
4. Average time period for batch releases (min)	2.31E+02	4.50E+02
5. Minimum time period for a batch release (min)	2.00E+00	3.00E+01
6. Average stream flow during periods of effluent into a flowing stream (liters/min of dilution water)	4.44E+06	4.29E+06
B. Gaseous		
1. Number of batch releases	1.40E+01	3.30E+01
2. Total time period for batch releases (min)	2.09E+04	1.23E+05
3. Maximum time period for a batch release (min)	9.84E+03	1.04E+04
4. Average time period for batch release (min)	1.49E+03	3.74E+03
5. Minimum time period for a batch release (min)	1.20E+02	8.00E+00

VII. ABNORMAL RELEASES

	1989 1ST QUARTER	1989 2ND QUARTER
A. Liquid		
1. Number of releases	- 0 -	- 0 -
2. Total activity released (Curies)	- 0 -	- 0 -
B. Gaseous		
1. Number of releases	- 0 -	- 0 -
2. Total activity releases (Curies)	- 0 -	- 0 -

TABLE 1A - REG GUIDE 1.21

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

A. FISSION AND ACTIVATION GASES	UNITS	1ST QUARTER	2ND QUARTER	EST.TOTAL ERROR,%
1. Total Release	Ci	2.78E+03	5.03E+02	2.15E+01
2. Average release rate for period	uCi/sec	3.54E+02	6.40E+01	
3. Percent of tech.spec.limit(1)	%	7.56E-02	8.12E-03	
4. Percent of tech.spec.limit(2)	%	2.67E-02	3.55E-03	
5. Percent of tech.spec.limit(3)	%	1.07E+00	1.22E-01	
6. Percent of tech.spec.limit(4)	%	5.35E-01	6.10E-02	
7. Percent of tech.spec.limit(5)	%	1.12E+00	1.94E-01	
8. Percent of tech.spec.limit(6)	%	5.60E-01	9.70E-02	
B. IODINES				
1. Total Iodine - 131	Ci	4.20E-02	3.28E-03	1.84E+01
2. Average release rate for period	uCi/sec	5.34E-03	4.17E-04	
3. Percent of tech.spec.limit(7)	%	5.77E-04	4.50E-05	
4. Percent of tech.spec.limit(8)	%	4.22E-01	3.30E-02	
5. Percent of tech.spec.limit(9)	%	2.11E-01	1.65E-02	
C. PARTICULATES				
1. Particulates with half lives greater than 8 days	Ci	5.95E-06	1.94E-05	1.84E+01
2. Average release rate for period	uCi/sec	7.57E-07	2.47E-06	
3. Percent of tech.spec.limit(7)	%	8.18E-08	2.67E-07	
4. Percent of tech.spec.limit(8)	%	5.99E-05	1.95E-04	
5. Percent of tech.spec.limit(9)	%	2.99E-05	9.75E-05	
6. Gross alpha radioactivity	Ci	<1.25E-06	<1.72E-05	

TABLE 1A - REG GUIDE 1.21 (Cont.)

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

D. TRITIUM	UNITS	1ST QUARTER	2ND QUARTER	EST.TOTAL ERROR,%
1. Total Release	Ci	3.56E+00	1.44E+01	2.18E+01
2. Average release rate for period	uCi/sec	4.53E-01	1.83E+00	

NOTES TO TABLE 1A

(1) Percent of I.A.1 whole body dose rate limit (500 mrem/year)

(2) Percent of I.A.1 skin dose rate limit (3000 mrem/year)

(3) Percent of I.A.3 gamma quarterly dose limit (10 mrad)

(4) Percent of I.A.3 gamma yearly dose limit (20 mrad)

(5) Percent of I.A.3 beta quarterly dose limit (20 mrad)

(6) Percent of I.A.3 beta yearly dose limit (40 mrad)

(7) Percent of I.B.1 organ dose limit (1500 mrem/year)

(8) Percent of I.B.3 quarterly dose limit (15 mrem)

(9) Percent of I.B.3 yearly dose limit (30 mrem)

TABLE IC - REG GUIDE 1.21

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

		CONTINUOUS MODE		BATCH MODE	
1. FISSION AND ACTIVATION GASES	UNITS	1ST QUARTER	2ND QUARTER	1ST QUARTER	2ND QUARTER
Argon -41	Ci	6.76E-01	(2)	1.53E-02	(2)
Krypton -85	Ci	(2)	(2)	2.11E+01	1.71E+01
Krypton -85m	Ci	2.08E+01	(2)	9.19E+00	6.64E-04
Krypton -87	Ci	8.26E+00	(2)	(2)	(2)
Kryton -88	Ci	2.34E+01	(2)	7.83E-03	(2)
Xenon -131m	Ci	(2)	(2)	8.01E+00	9.90E+00
Xenon -133	Ci	1.80E+03	4.25E+01	7.80E+02	4.15E+02
Xenon -133m	Ci	2.20E+01	(2)	1.75E+00	1.62E+01
Xenon -135	Ci	8.26E+01	2.87E+00	7.90E-01	7.38E-03
Xenon -138	Ci	(2)	(2)	(2)	(2)
Total for Period	Ci	1.96E+03	4.54E+01	8.21E+02	4.58E+02
2. HALOGENS					
Iodine -131	Ci	4.20E-02	3.28E-03	(1)	(1)
Iodine -133	Ci	4.67E-02	3.31E-03	(1)	(1)
Total For Period	Ci	8.87E-02	6.59E-03	(1)	(1)

TABLE 1C -REG GUIDE 1.21 (Cont.)

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

		CONTINUOUS MODE		BATCH MODE	
3. PARTICULATES	UNITS	1ST QUARTER	2ND QUARTER	1ST QUARTER	2ND QUARTER
Manganese -54	Ci	(2)	(2)	(1)	(1)
Cobalt -58	Ci	(2)	(2)	(1)	(1)
Iron -59	Ci	(2)	(2)	(1)	(1)
Cobalt -60	Ci	(2)	(2)	(1)	(1)
Zinc -65	Ci	(2)	(2)	(1)	(1)
Strontium -89	Ci	(2)	(2)	(1)	(1)
Strontium -90	Ci	(2)	(2)	(1)	(1)
Molybdenum -99	Ci	(2)	(2)	(1)	(1)
Cesium -134	Ci	(2)	(2)	(1)	(1)
Cesium -137	Ci	2.73E-06	1.94E-05	(1)	(1)
Cerium -141	Ci	(2)	(2)	(1)	(1)
Cerium -144	Ci	3.22E-06	(2)	(1)	(1)
Total For Period	Ci	5.95E-06	1.94E-05	(1)	(1)

(1) Iodines and particulates in batch releases are accounted for with the main vent continuous samplers when the release is made through the plant main vent.

(2) Less than minimum detectable activity which meets the LLD requirements of Technical Specification Surveillance Requirement 4.11.2.1.2.

TABLE 2A - REG GUIDE 1.21

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

A. FISSION AND ACTIVATION PRODUCTS	UNITS	1ST QUARTER	2ND QUARTER	EST.TOTAL ERROR,%
1. Total Release (not including tritium,gases,alpha)	Ci	7.62E-01	3.37E-01	2.16E+01
2. Average diluted concentration during period	uCi/ml	1.31E-09	6.00E-10	
3. Percent of tech.spec.limit(1)	%	1.05E+00	7.21E-01	
4. Percent of tech.spec.limit(2)	%	5.25E-01	3.61E-01	
5. Percent of tech.spec.limit(3)	%	5.64E-01	2.90E-01	
6. Percent of tech.spec.limit(4)	%	2.82E-01	1.45E-01	
B. TRITIUM				
1. Total Release	Ci	1.97E+02	2.40E+01	1.81E+01
2. Average diluted concentration during period	uCi/ml	3.39E-07	4.27E-08	
3. Percent of applicable limit(5)	%	1.13E-02	1.42E-03	
C. DISSOLVED AND ENTRAINED GASES				
1. Total Release	Ci	2.87E-01	7.38E-03	2.00E+01
2. Average diluted concentration during period	uCi/ml	4.94E-10	1.31E-11	

TABLE 2A - REG GUIDE 1.21 (Cont.)

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	1ST QUARTER	2ND QUARTER	EST. TOTAL ERROR, %
D. GROSS ALPHA RADIOACTIVITY				
1. Total Release	Ci	<1.94E-04	<2.97E-04	3.00E+00
E. VOLUME OF WASTE RELEASES (prior to dilution)	liters	6.44E+06	3.31E+06	3.00E+00
F. VOLUME OF DILUTION WATER USED DURING PERIOD	liters	5.81E+11	5.62E+11	1.40E+01

NOTES TO TABLE 2A

(1) Percent of I.C.3 Quarterly Organ Dose Limit (10 mrem)

(2) Percent of I.C.3 Yearly Organ Dose Limit (20 mrem)

(3) Percent of I.C.3 Quarterly Whole Body Dose Limit (3 mrem)

(4) Percent of I.C.3 Yearly Whole Body Dose Limit (6 mrem)

(5) Limit used is 3×10^{-3} uCi/ml

TABLE 2B - REG GUIDE 1.21

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNITS	CONTINUOUS MODE 1ST QUARTER	CONTINUOUS MODE 2ND QUARTER	BATCH MODE 1ST QUARTER	BATCH MODE 2ND QUARTER
Sodium -24	Ci	(1)	(1)	(2)	7.12E-05
Chromium -51	Ci	(1)	(1)	2.03E-02	8.73E-03
Manganese -54	Ci	(1)	(1)	5.29E-03	3.30E-03
Cobalt -57	Ci	(1)	(1)	7.98E-05	(2)
Cobalt -58	Ci	(1)	(1)	8.20E-02	2.22E-02
Iron -59	Ci	(1)	(1)	(2)	(2)
Cobalt -60	Ci	(1)	(1)	1.80E-02	6.29E-03
Zinc -65	Ci	(1)	(1)	1.88E-04	(2)
Strontium -89	Ci	(1)	(1)	3.45E-02	<7.94E-05
Strontium -90	Ci	(1)	(1)	3.20E-03	3.97E-04
Zirconium -95	Ci	(1)	(1)	1.65E-02	4.04E-03
Niobium -95	Ci	(1)	(1)	2.87E-03	8.85E-03
Technicium -99m	Ci	(1)	(1)	1.94E-04	(2)
Ruthenium -103	Ci	(1)	(1)	4.05E-03	1.54E-04
Silver -110m	Ci	(1)	(1)	3.32E-02	9.10E-03
Tin -113	Ci	(1)	(1)	6.43E-03	(2)
Antimony -124	Ci	(1)	(1)	(2)	5.58E-04
Antimony -125	Ci	(1)	(1)	4.31E-02	1.85E-02
Iodine -131	Ci	(1)	(1)	2.77E-02	1.46E-03
Iodine -133	Ci	(1)	(1)	1.96E-03	4.55E-05
Cesium -134	Ci	(1)	(1)	1.07E-01	5.76E-02
Cesium -136	Ci	(1)	(1)	7.92E-05	(2)

TABLE 2B - REG GUIDE 1.21 (Cont.)

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNITS	CONTINUOUS MODE 1ST QUARTER	CONTINUOUS MODE 2ND QUARTER	BATCH MODE 1ST QUARTER	BATCH MODE 2ND QUARTER
Cesium -137	Ci	(1)	(1)	3.40E-01	1.93E-01
Cerium -139	Ci	(1)	(1)	2.64E-06	(2)
Cerium -141	Ci	(1)	(1)	6.34E-04	(2)
Cerium -144	Ci	(1)	(1)	1.39E-02	2.23E-03
Lanthanum -140	Ci	(1)	(1)	1.18E-03	(2)
Total For Period	Ci	(1)	(1)	7.62E-01	3.37E-01
Krypton -85m	Ci	(1)	(1)	1.76E-05	(2)
Krypton -88	Ci	(1)	(1)	8.40E-06	(2)
Xenon -131m	Ci	(1)	(1)	9.92E-05	(2)
Xenon -133	Ci	(1)	(1)	2.86E-01	7.38E-03
Xenon -133m	Ci	(1)	(1)	2.00E-04	(2)
Xenon -135	Ci	(1)	(1)	6.24E-04	(2)
Total For Period	Ci	(1)	(1)	2.87E-01	7.38E-03

(1) There were no continuous liquid releases during the 1st and 2nd quarters.

(2) Less than minimum detectable activity which meets the LLD requirements of Technical Specification Surveillance Requirement 4.11.1.1.1.

TABLE 3A

CALVERT CLIFFS NUCLEAR POWER PLANT
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
FIRST HALF - 1989

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOTE IRRADIATED FUEL)

1. Type of Waste	UNITS	6-MONTH PERIOD	EST. TOTAL ERROR%
a. Dewatered spent resin	m^3	6.50E+00	
	Ci	1.19E+01	2.00E+01
b. Dry Compressible Waste, Contaminated Equipment, etc.	m^3	8.41E+01	
	Ci	2.60E+00	5.00E+01
c. Irradiated Components, Control Rods, etc.	m^3	-----	
	Ci	-----	5.00E+01
d. Other (CVCS Filters)	m^3	3.60E+00	
	Ci	3.69E+02	2.00E+01

2. Estimate of Major Nuclides (By Type of Waste)*

a.	Manganese	-54	1.50E+00 %
	Iron	-55	2.60E+00 %
	Cobalt	-58	9.90E+00 %
	Cobalt	-60	2.70E+00 %
	Nickel	-63	3.50E+00 %
	Cesium	-134	1.86E+01 %
	Cesium	-137	5.90E+01 %
b.	Iron	-55	4.10E+01 %
	Cobalt	-58	3.20E+00 %
	Cobalt	-60	1.40E+01 %
	Nickel	-63	8.90E+00 %
	Cesium	-134	8.30E+00 %
	Cesium	-137	2.10E+01 %

* Only nuclides greater than 1% are reported

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
3	Motor Surface Transit	Barnwell, S.C.
3	Motor Surface Transit	Scientific Ecology Group Oakridge, TN