400 Chestnut Street Tower II

October 16, 1980

Director of Licensing
Attention: Mr. Thomas A. Ippolito, Chief
Operating Reactors Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Ippolito:

In the Matter of the)
Tennessee Valley Authority)

Docket No. 50-259
50-260
50-296

We have reviewed the draft data regarding the Effluent and Waste Disposal Semi-Annual Report for year 1978 for the Browns Ferry Nuclear Plant enclosed with the letter from R. A. Hartfield to H. G. Parris dated September 19, 1980. Enclosed is a corrected copy of that data with changes indicated by vertical bars. All other data is correct as reported.

The scope of this request for information was expanded in a telephone discussion with M. R. Beebe on September 30, 1980. Even though TVA's allotted review time was extremely short, the enclosed response also addresses the additional information requested.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Subscribed and sworn to before
me this 16th day of Oct. 1980.

Paulette H. White
Notary Public

My Commission Expires 9-5-84

Enclosure

8010210 348 R

INSTALLATION BROWNS FERRY LOCATION 10 MI NW DECATUR AL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR YEAR 1978
SUPPLEMENTAL INFORMATION

UNIT NUMBER 1 LICENSEE TENNESSEE VALLEY AUTHORITY
TYPE BWR LICENSED POWER (MWT) 3293.0
DOCKET NO. 50-259 INITIAL CRITICALITY 08/17/73
COOLING WATER SOURCE TENNESSEE RIVER

UNIT NUMBER 2 LICENSEE TENNESSEE VALLEY AUTHORITY
TYPE BWR LICENSED POWER (MWT) 3293.0
DOCKET NO. 50-260 INITIAL CRITICALITY 07/20/74
COOLING WATER SOURCE TENNESSEE RIVER

UNIT NUMBER 3 LICENSEE TENNESSEE VALLEY AUTHORITY
TYPE BWR LICENSED POWER (MWT) 3293.0
DOCKET NO. 50-296 INITIAL CRITICALITY 08/08/76
COOLING WATER SOURCE TENNESSEE RIVER

MAXIMUM PERMISSIBLE CONCENTRATIONS (MICROCURIES/ML) See Attachment 1

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY See Attachment 2

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION BROWNS FERRY LOCATION 10 MI NW DECATUR AL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR YEAR 1978
SUPPLEMENTAL INFORMATION

AVERAGE ENERGY (MEV/DISINTEGRATION)

	BETA		GAMMA	
	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
	N/A	N/A	N/A	N/A

BATCH RELEASES	QUARTER 1	QUARTER 2
A. LIQUID		
1. NUMBER OF BATCH RELEASES-	123	92
2. TOTAL TIME PERIOD FOR BATCH RELEASE(MIN)-	4.83E 04	3.21E 04
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.91E 03	1.59E 03
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	3.56E 02	3.56E 02
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	9.00	35
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-		
B. GASEOUS		
NUMBER OF BATCH RELEASES-	NONE	NONE
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-		
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-		
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-		
5. MINIMUM PERIOD FOR A BATCH RELEASE(MIN)-		

ABNORMAL RELEASES		
A. LIQUID	NONE	NONE
NUMBER OF RELEASES		
2. TOTAL ACTIVITY RELEASED (CURIES)		
B. GASEOUS		
1. NUMBER OF RELEASES	NONE	NONE
2. TOTAL ACTIVITY RELEASED (CURIES)		

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION BROWN'S FERRY LOCATION 10 MI NW DECATUR AL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR YEAR 1978
SUPPLEMENTAL INFORMATION

AVERAGE ENERGY (MEV/DISINTEGRATION)

	BETA		GAMMA	
	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
	N/A	N/A	N/A	N/A

	QUARTER 3	QUARTER 4
BATCH RELEASES		
A. LIQUID		
1. NUMBER OF BATCH RELEASES-	73	96
2. TOTAL TIME PERIOD FOR BATCH RELEASE(MIN)-	2.72E 04	3.59E 04
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	2.03E 03	1.21E 03
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	3.73E 02	3.74E 02
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	60	60
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-		
B. GASEOUS		
NUMBER OF BATCH RELEASES-	NONE	NONE
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-		
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-		
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-		
5. MINIMUM PERIOD FOR A BATCH RELEASE(MIN)-		
ABNORMAL RELEASES		
A. LIQUID		
NUMBER OF RELEASES	1	NONE
2. TOTAL ACTIVITY RELEASED (CURIES)	0.04	
B. GASEOUS	NONE	NONE
1. NUMBER OF RELEASES		
2. TOTAL ACTIVITY RELEASED (CURIES)		

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST. TOTAL ERROR,%
A. FISSION AND ACTIVATION GASES				
1.TOTAL RELEASE	CI	<1.10E 04	<5.17E 04	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	<1.40E 03	<6.58E 03	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	2.85	1.32E 01	
B. IODINES				
1.TOTAL IODINE-131	CI	<2.81E -02	4.34E -02	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	<3.57E -03	5.52E -03	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	8.93E -01	1.38E +00	
C. PARTICULATES				
1.PARTICULATES WITH HALF-LIVES > 8 DAYS	CI	<1.01E -02	<2.32E -02	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	<1.29E -03	<2.95E -03	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	3.23E -01	7.38E -01	
4.GROSS ALPHA RADIOACTIVITY	CI	<6.66E -07	<6.23E -06	
D. TRITIUM				
1.TOTAL RELEASE	CI	6.26E 00	1.12E 01	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	7.96E -01	1.42E 00	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	1.30	1.52E 00	

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INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST. TOTAL ERROR,%
A. FISSION AND ACTIVATION GASES				
1.TOTAL RELEASE	CI	<9.33E 04	<1.18E 03	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	<1.19E 04	<1.50E 02	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	2.37E 01	3.00E -01	
B. IODINES				
1.TOTAL IODINE-131	CI	3.18E -02	<2.49E -02	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	4.05E -03	<3.17E -03	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	1.01E 00	7.93E -01	
C. PARTICULATES				
1.PARTICULATES WITH HALF-LIVES > 8 DAYS	CI	<3.23E -02	<3.31E -02	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	<4.12E -03	<4.21E -03	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	1.03E 00	1.05E 00	
4.GROSS ALPHA RADIOACTIVITY	CI	<1.92E -06	<6.72E -04	
D. TRITIUM				
1.TOTAL RELEASE	CI	6.34E 00	4.98E 00	
2.AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	8.07E -01	6.34E -01	
3.PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	6.50E -01	7.79E -01	

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INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GAS EFFLUENTS ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER 1	CONTINUOUS MODE QUARTER 2	BATCH MODE QUARTER 1	BATCH MODE QUARTER 2
FISSION GASES					
AR-41	CI	<4.08E 00	<3.80E 00		
H-3	CI	7.15E-02	2.53E-01		
KR-85	CI	<1.44E 00	2.87E 00		
KR-85M	CI	<1.48E 01	5.57E 01		
KR-87	CI	<5.93E 00	<8.57E 00		
KR-88	CI	<4.50E 01	<4.90E 01		
XE-133	CI	<4.13E 02	<4.54E 02		
XE-135	CI	<2.17E 00	<3.92E 00		
XE-135M	CI	<7.17E 01	<3.65E 01		
XE-138	CI	<4.97E 02	<2.58E 02		
IODINES					
I-131	CI	<1.55E-02	3.50E-02		
I-133	CI	<5.07E-03	1.06E-02		
I-135	CI	<5.38E-04	4.93E-03		
PARTICULATES					
BA-140	CI	<2.44E-05	<3.16E-05		
CO-58	CI	<1.31E-05	<1.63E-05		
CO-60	CI	<2.76E-05	3.05E-05		
CS-134	CI	<2.89E-05	<6.59E-05		
CS-137	CI	<4.23E-05	<4.16E-05		
FE-59	CI	<3.25E-05	<4.10E-05		
LA-140	CI	<2.44E-05	<3.16E-05		
MN-54	CI	<1.44E-05	<1.58E-05		
NB-95	CI	<1.31E-05	<2.03E-05		
SR-89	CI	6.38E-06	8.42E-06		
SR-90	CI	3.40E-07	1.34E-07		
ZN-65	CI	<3.23E-05	<4.18E-05		
ZR-95	CI	<2.78E-05	<3.55E-05		

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GAS EFFLUENTS ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER 3	CONTINUOUS MODE QUARTER 4	BATCH MODE QUARTER 3	BATCH MODE QUARTER 4
FISSION GASES					
AR-41	CI	1.66E 01	4.72E 01		
H-3	CI	6.88E-01	1.00E 00		
KR-85	CI	6.26E 00	6.71E 00		
KR-85M	CI	1.14E 02	1.73E 03		
KR-87	CI	<9.39E 00	<7.76E 00		
KR-88	CI	1.00E 02	1.29E 02		
XE-133	CI	1.69E 03	1.03E 03		
XE-135	CI	<3.18E 00	<2.98E 00		
XE-135M	CI	<6.50E 01	<3.29E 01		
XE-138	CI	<3.65E 02	<1.42E 02		
IODINES					
I-131	CI	3.03E-02	2.70E-02		
I-133	CI	3.92E-03	1.38E-03		
I-135	CI	2.44E-03	<2.98E 00		
PARTICULATES					
BA-140	CI	<5.67E-05	<4.24E-05		
CO-58	CI	<4.00E-05	<3.22E-05		
CO-60	CI	4.80E-05	3.37E-05		
CS-134	CI	<3.98E-05	<4.08E-05		
CS-137	CI	<7.03E-05	<5.13E-05		
FE-59	CI	<9.94E-05	<7.87E-05		
LA-140	CI	<3.23E-05	<2.78E-05		
MN-54	CI	<4.56E-05	<3.19E-05		
NB-95	CI	<6.35E-05	<6.61E-05		
SR-89	CI	1.04E-06	1.67E-05		
SR-90	CI	3.84E-08	4.36E-07		
ZN-65	CI	<6.62E-05	<5.37E-05		
ZR-95	CI	<1.18E-03	<1.04E-03		

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GAS EFFLUENTS GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER 1	CONTINUOUS MODE QUARTER 2	BATCH MODE QUARTER 1	BATCH MODE QUARTER 2
FISSION GASES					
AR-41	CI	<6.03E 01	<2.02E 02		
H-3	CI	6.19E 00	1.09E 01		
KR-85	CI	<8.90E 03	<4.54E 04		
KR-85M	CI	<2.93E 01	<1.54E 02		
KR-87	CI	<7.05E 01	<3.69E 02		
KR-88	CI	<9.15E 01	<5.07E 02		
XE-133	CI	<5.69E 01	<3.72E 02		
XE-135	CI	<2.68E 01	<1.58E 02		
XE-135M	CI	<1.33E 01	< 7.50E 02		
XE-138	CI	<5.68E 02	<2.91E 03		
IODINES					
I-131	CI	< 1.26E-02	8.3PE-03		
I-133	CI	< 1.85E-03	< 8.21E-03		
I-135	CI	<1.28E-02	< 3.61E-02		
PARTICULATES					
BA-140	CI	<2.96E-04	< 7.15E-04		
CO-58	CI	<2.61E-04	< 1.30E-03		
CO-60	CI	< 2.40E-03	5.00E-03		
CS-134	CI	<2.55.E-04	<6.42E-04		
CS-137	CI	< 1.86E-03	1.65E-03		
FE-59	CI	<3.36E-04	<1.48E-03		
LA-140	CI	<2.96E-04	< 7.15E-04		
MN-54	CI	< 5.72E-04	< 1.26E-03		
NB-95	CI	< 7.16E-04	<2.22E-03		
SR-89	CI	1.07E-05	2.48E-04		
SR-90	CI	2.45E-05	2.01E-04		
ZN-65	CI	<2.11E-03	< 5.23E-03		
ZR-95	CI	<6.54E-04	<2.15E-03		

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

GAS EFFLUENTS GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER 3	CONTINUOUS MODE QUARTER 4	BATCH MODE QUARTER 3	BATCH MODE QUARTER 4
FISSION GASES					
AR-41	CI	<3.91E 02	<5.08E 01		
H-3	CI	5.65E 00	3.58E 00		
KR-85	CI	<8.35E 04	< 2.37E 04		
KR-85M	CI	<2.21E 02	<3.04E 01		
KR-87	CI	<5.62E 02	< 3.74E 02		
KR-88	CI	<7.79E 02	<2.17E 02		
XE-133	CI	<5.14E 02	<4.68E 01		
XE-135	CI	<2.65E 02	<5.80E 01		
XE-135M	CI	<1.16E 02	<1.66E 02		
XE-138	CI	<3.50E 03	< 8.06E 02		
IODINES					
I-131	CI	1.50E-03	1.31E-03		
I-133	CI	<6.41E-03	< 3.19E-03		
I-135	CI	<1.46E-01	<2.46E-02		
PARTICULATES					
BA-140	CI	<2.54E-03	<2.47E-03		
CO-58	CI	<2.33E-03	<2.23E-03		
CO-60	CI	6.86E-04	5.87E-04		
CS-134	CI	<1.62E-03	<1.81E-03		
CS-137	CI	<1.07E-03	<9.34E-04		
FE-59	CI	<4.16E-03	< 9.39E-03		
LA-140	CI	<1.76E-03	<1.78E-03		
MN-54	CI	<3.96E-03	<1.30E-02		
NB-95	CI	< 2.21E-03	< 2.98E-03		
SR-89	CI	6.95E-06	2.81E-05		
SR-90	CI	3.00E-06	1.10E-06		
ZN-65	CI	<2.12E-03	<1.93E-03		
ZR-95	CI	< 8.20E-03	<1.17E-02		

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER 1	CONTINUOUS MODE QUARTER 2	BATCH MODE QUARTER 1	BATCH MODE QUARTER 2
BA-140	CI	<1.13E-03	<6.80E-04		
CE-141	CI	<2.00E-03	<1.74E-03		
CO-58	CI	<8.20E-03	<9.58E-03		
CO-60	CI	<5.45E-02	<4.61E-02		
CR-51	CI	1.18E-01	1.67E-01		
CS-134	CI	<4.76E-03	<3.76E-03		
CS-136	CI	<4.58E-03	<2.20E-03		
CS-137	CI	<1.45E-02	<1.24E-02		
FE-59	CI	<4.85E-03	<3.87E-03		
H-3	CI	9.08E 00	6.19E 00		
I-131	CI	<1.68E-02	<1.14E-02		
I-133	CI	<8.85E-03	<5.96E-03		
LA-140	CI	<1.13E-03	<6.80E-04		
MN-54	CI	<1.04E-02	<9.01E-03		
MN-56	CI	<8.61E-04	<4.24E-04		
MO-99	CI	<3.78E-03	<2.31E-03		
NA-24	CI	<1.24E-01	<3.29E-02		
NB-95	CI	<1.79E-02	<1.47E-02		
SR-89	CI	<4.57E-04	<7.25E-05		
SR-90	CI	<2.28E-04	2.35E-05		
TC-99M	CI	<3.78E-03	<2.31E-03		
XE-133	CI	<2.87E-02	<7.71E-02		
XE-135	CI	<2.49E-02	<2.36E-02		
ZN-65	CI	<5.46E-02	<4.14E-02		
ZR-95	CI	<2.29E-02	<2.54E-02		

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE QUARTER 3	CONTINUOUS MODE QUARTER 4	BATCH MODE QUARTER 3	BATCH MODE QUARTER 4
BA-140	CI	<5.15E-04	<6.75E-04		
CE-141	CI	< 2.15E-03	<3.65E-03		
CO-58	CI	<8.26E-03	<1.16E-02		
CO-60	CI	<2.96E-02	<1.02E-01		
CR-51	CI	1.21E-01	2.88E-01		
CS-134	CI	<6.91E-03	<1.67E-02		
CS-136	CI	<2.28E-03	<8.59E-03		
CS-137	CI	<1.56E-02	<2.79E-02		
FE-59	CI	<3.51E-03	<6.53E-03		
H-3	CI	6.32E 00	9.21E 00		
I-131	CI	<1.65E-02	<2.66E-02		
I-133	CI	<4.60E-03	<9.83E-02		
LA-140	CI	<5.15E-04	<6.75E-04		
MN-54	CI	<6.43E-03	<1.99E-02		
MN-56	CI	<3.74E-04	<1.26E-03		
MO-99	CI	<1.53E-03	<1.70E-03		
NA-24	CI	< 1.19E-02	<4.56E-02		
NB-95	CI	<1.33E-02	<4.33E-02		
SR-89	CI	<1.87E-04	2.93E-04		
SR-90	CI	<1.19E-04	2.94E-04		
TC-99M	CI	<1.53E-03	<1.70E-03		
XE-133	CI	<1.34E-01	<4.96E-02		
XE-135	CI	<6.46E-02	<3.01E-02		
ZN-65	CI	<3.70E-02	<1.14E-01		
ZR-95	CI	<1.33E-02	<4.33E-02		

INSTALLATION=PROVINS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST. TOTAL ERROR,%
A. FISSION AND ACTIVATION PRODUCTS				
1.TOTAL RELEASE(NOT INCLUDING TRITIUM, GASES,ALPHA)	CI	5.60E 00	2.80E 00	
2.AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.98E -08	2.13E -08	
3.PERCENT OF APPLICABLE LIMIT	%	28	14	
B. TRITIUM				
1.TOTAL RELEASE	CI	9.08E 00	6.19E 00	
2.AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	3.20E -08	4.05E -08	
3.PERCENT OF APPLICABLE LIMIT	%	1.07E -03	1.35E -03	
C. DISSOLVED AND ENTRAINED GASES				
1.TOTAL RELEASE	CI	<1.09E -01	<2.44E -01	
2.AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	<3.84E -10	<1.95E -09	
3.PERCENT OF APPLICABLE LIMIT	%	6.41E -03	3.25E -02	
D. GROSS ALPHA RADIOACTIVITY				
1.TOTAL RELEASE	CI	1.03E -04	<5.14E -04	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.35E 07	8.27E 06	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.84E 11	1.34E 11	

INSTALLATION=BROWNS FERRY

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1978

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST. TOTAL ERROR,%
A. FISSION AND ACTIVATION PRODUCTS				
1.TOTAL RELEASE(NOT INCLUDING TRITIUM, GASES,ALPHA)	CI	1.73E 00	3.06E 00	
2.AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.68E -08	1.99E -08	
3.PERCENT OF APPLICABLE LIMIT	%	8.65E 00	1.53E 01	
B. TRITIUM				
1.TOTAL RELEASE	CI	6.32E 00	9.21E 00	
2.AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	6.08E -08	5.98E -08	
3.PERCENT OF APPLICABLE LIMIT	%	2.03E -03	2.00E -03	
C. DISSOLVED AND ENTRAINED GASES				
1.TOTAL RELEASE	CI	< 2.55E -01	< 3.37E -01	
2.AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	< 2.45E -09	< 2.19E -09	
3.PERCENT OF APPLICABLE LIMIT	%	4.08E -02	3.65E -02	
D. GROSS ALPHA RADIOACTIVITY				
1.TOTAL RELEASE	CI	1.16E -05	<1.87E -02	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	7.03E 06	1.06E 07	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.04E 11	1.54E 11	

ATTACHMENT 1

MAXIMUM PERMISSIBLE CONCENTRATIONS

a. Fission and Activation Gases: Not Applicable

b. Iodines: Not Applicable

c. Particulates, half-lives >8 days: Not Applicable

d. Liquid effluents: sum of indv. MPC ratios $\leq$ 1

(ref. 10 CFR 20, Appendix B, note 1)

ATTACHMENT 2

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

a,b,&c. Fission and Activation Gases, Iodines, Particulates: Airborne effluent gaseous activity is continuously monitored and recorded; additionally, grab samples are taken and analyzed monthly to determine specific radionuclide activity concentrations. Stack and building vent effluent flow rates are calculated once a shift based on the configuration of operating exhaust fans. The flow rate is consolidated weekly to determine the volume of airborne effluents released from the plant.

Charcoal and particulate samples are taken and analyzed at least weekly to determine specific activity concentrations. The total activity released from the plant is then calculated by taking weekly activity concentration values and multiplying them by the weekly airborne effluent volume.

Allowance is made for a plus or mius one sigma counting error associated with γ isotopic analyses.

d. Liquid Effluents

Gross beta, gamma and total γ isotopic activity concentrations are determined on each batch of liquid effluent before release. The total curie content of a released batch is determined by multiplying the highest of the above three activiy concentrations by the total volume discharges. The total activity released during a month is then determined by summing the activity content of each batch discharged during the month.

Allowance is made for plus or minus one sigma counting error associated with the total γ isotopic analyses.