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ACCESSION NBR:8805230163 DOC.DATE: 88/05/13 NOTARIZED: NO DOCKET #
 FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
 AUTH.NAME AUTHOR AFFILIATION
 CONWAY,W.F. Florida Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION
 TICHLER,J.L. Brookhaven National Laboratory

SUBJECT: Forwards suggested changes, in form of marked up pages, to
 draft radioactive effluent info encl w/880330 ltr.

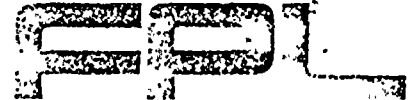
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INTERNAL:	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DOEA/EAB 11	1 1
	NRR/DREP/RPB 10	2 2	NRR/DRIS/SGB 9D	1 1
	NRR/PMAS/ILRB12	1 1	NUDOCS-ABSTRACT	1 1
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MAY 13 1988

L-88-219

Ms. Joyce L. Tichler
Atmospheric Sciences Division
Brookhaven National Laboratory
Upton, New York 11973

Dear Ms. Tichler:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
1986 Summary of Radioactive Effluents

Florida Power & Light Company has reviewed the draft effluent information provided in your letter dated March 30, 1988.

Our suggested changes to the data are indicated on the attached marked up copies of the summary sheets.

Please address future requests to:

Mr. W. F. Conway
Senior Vice President - Nuclear
Florida Power & Light Company
P. O. Box 14000
Juno Beach, FL 33408
Attn: Nuclear Licensing Department

Should you need any additional information on this data, please contact us.

Very truly yours,

W. F. Conway
W. F. Conway
Senior Vice President - Nuclear

WFC/TCG/gp

Attachment

cc: Mr. R. A. Hartfield
Office of Administrative and Resources Management, USNRC
Dr. J. Nelson Grace, Regional Administrator, Region II,
USNRC
Document Control Desk, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

TCG.RED

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PDR ADOCK 05000250
P DCD

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an FPL Group company

INSTALLATION-TURKEY POINT

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986
SUPPLEMENTAL INFORMATION

UNIT NUMBER 3 TYPE PWR
DOCKET NO. 50-250
COMMERCIAL OPERATION 12/14/72
COOLING WATER SOURCE CLOSED CYCLE CANAL

LICENSEE FLORIDA POWER & LIGHT
LICENSED POWER (MWT) 2200.
INITIAL CRITICALITY 10/20/72

UNIT NUMBER 4 TYPE PWR
DOCKET NO. 50-251
COMMERCIAL OPERATION 09/07/73
COOLING WATER SOURCE CLOSED CYCLE CANAL

LICENSEE FLORIDA POWER & LIGHT
LICENSED POWER (MWT) 2200.
INITIAL CRITICALITY 06/11/73

MAXIMUM PERMISSIBLE CONCENTRATIONS(MICROCURI/ML)

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

FISSION AND ACTIVATION GASES
GAMMA SPECTRUM ANALYSIS

IODINES

ABSORPTION OF HALOGEN RADIONUCLIDES ON A CHARCOAL FILTER AND SUBSEQUENT GAMMA-SPECTRUM ANALYSIS.

PARTICULATES

REMOVAL OF PARTICULATE MATERIAL BY FILTRATION AND SUBSEQUENT GAMMA-SPECTRUM ANALYSIS.
SR-89-90 DETERMINATION, GROSS ALPHA ANALYSIS AND GROSS BETA-GAMMA ANALYSIS.

LIQUID EFFLUENTS

ALIQUOTS OF REPRESENTATIVE PRE-RELEASE SAMPLES WERE EITHER ISOTOPICALLY ANALYZED FOR GAMMA EMITTING ISOTOPES ON A MULTICHANNEL ANALYZER OR EVAPORATED AND ANALYZED FOR GROSS BETA-GAMMA ACTIVITY IN A 2 PI GAS FLOW PROPORTIONAL COUNTER. THE EFFICIENCY OF THE GAS FLOW PROPORTIONAL COUNTER IS ADJUSTED SO THAT THE ACTIVITY DETERMINED BY GROSS BETA-GAMMA ANALYSIS APPROXIMATES THE ISOTOPIC ACTIVITIES DETERMINED BY GAMMA SPECTRUM ANALYSIS AND SELECTED BETA DETERMINATIONS, EXCLUSIVE OF TRITIUM AND DISSOLVED GASES. THE ABOVE PROCEDURE WAS FOLLOWED FOR ALL RELEASES FROM THE WASTE DISPOSAL SYSTEM AND FOR SECONDARY SYSTEM BATCH RELEASES. FREQUENT PERIODIC SAMPLING AND ANALYSIS WERE USED TO CONSERVATIVELY ESTIMATE THE QUANTITY OF RADIOACTIVITY RELEASED VIA THE STEAM GENERATOR BLOWDOWN SYSTEM.

*Composites for H₃, alpha, Sr 80/90 and Fe 55 are also
done on liquid effluents*

INSTALLATION: TURKEY POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1986
SOLID EFFLUENTS

SOLID WASTE DISPOSITION	MODE OF TRANSPORTATION	DESTINATION
NUMBER OF SHIPMENTS	25	BARNWELL SC
	SOLE USE TRUCK	

IRRADIATED FUEL SHIPMENTS(DISPOSITION)	MODE OF TRANSPORTATION	DESTINATION
NUMBER OF SHIPMENTS	0	N/A
	N/A	

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
CO-58	X	1.20E+01	1.70E+01
CO-60	X	1.70E+01	2.30E+01
CR-51	X	2.00E+00	
CS-134	X	1.60E+01	
CS-137	X	3.50E+01	2.00E+00
FE-55	X	1.00E+01	2.60E+01
H-3	X	3.00E+00	2.40E+01
MN-54	X		1.00E+00
NI-63	X	3.00E+00	4.00E+00
B			
BA-140	X	1.00E+00	
CO-58	X	2.80E+01	1.00E+01
CO-60	X	1.70E+01	3.50E+01
CR-51	X	5.00E+00	
CS-134	X	2.00E+00	7.00E+00
CS-137	X	5.00E+00	2.30E+01
FE-55	X	3.10E+01	1.60E+01
LA-140	X	1.00E+00	
MN-54	X	2.00E+00	
NI-63	X	3.00E+00	6.00E+00
SB-125	X		1.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	6.54E+01
BOTTOMS, ETC.	C1	8.46E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	2.58E+02
EQUIPMENT, ETC.	C1	4.10E+00
C. IRRADIATED COMPONENTS, CONTROL	M3	
RODS, ETC.	C1	
D. OTHER	M3	
	C1	

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



INSTALLATION-TURKEY POINT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

FIRST SIX MONTHS

A.SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL(NOT IRRADIATED)

	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
1. TYPE OF WASTE			
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.97E 1	
	C1	8.37E 1	2.00E 1
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	9.99E 1	
	C1	3.25E 0	2.00E 1
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3		
	C1		
D. OTHER(DESCRIBE)	M3		
	C1		

2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)

A.	CO-58	X	1.20E 1
	CO-60	X	1.70E 1
	CR-51	X	2.00E 0
	CS-134	X	1.60E 1
	CS-137	X	3.50E 1
	FE-55	X	1.00E 1
	H-3	X	3.00E 0
	NI-63	X	3.00E 0
B.	BA-140	X	1.00E 0
	CO-58	X	2.80E 1
	CO-60	X	1.70E 1
	CR-51	X	5.00E 0
	CS-134	X	2.00E 0
	CS-137	X	5.00E 0
	FE-55	X	3.10E 1
	LA-140	X	1.00E 0
	MN-54	X	2.00E 0
	NI-63	X	3.00E 0

3. SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
15

MODE OF TRANSPORTATION
SOLE USE TRUCK

DESTINATION
BARNWELL SC

B. IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS
0

MODE OF TRANSPORTATION
N/A

DESTINATION
N/A

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

SECOND SIX MONTHS

A.SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL(NOT IRRADIATED)

	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
1. TYPE OF WASTE			
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.72E 0	
	CI	9.44E- 1	2.00E 1
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.58E 2	
	CI	8.48E- 1	2.00E 1
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3		
	CI		
D. OTHER(DESCRIBE)	M3		
	CI		

2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)

A.	CO-58	X	1.70E 1
	CO-60	X	2.30E 1
	CS-137	X	2.00E 0
	FE-55	X	2.60E 1
	H-3	X	2.40E 1
	MN-54	X	1.00E 0
	NI-63	X	4.00E 0
B.	CO-58	X	1.00E 1
	CO-60	X	3.50E 1
	CS-134	X	7.00E 0
	CS-137	X	2.30E 1
	FE-55	X	1.60E 1
	NI-63	X	6.00E 0
	SB-125	X	1.00E 0

3. SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
10	SOLE USE TRUCK	BARNWELL SC

B. IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION: TURKEY POINT 3

LOCATION: 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1986
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE: PWR LICENSEE: FLORIDA POWER & LIGHT
DOCKET NO.: 50-250 LICENSED POWER (MW): 2200.00
COMMERCIAL OPERATION: 12/14/72 INITIAL CRITICALITY: 10/20/72
COOLING WATER SOURCE: CLOSED CYCLE CANAL

*Question on
Gaseous Batch Releases*

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.63E+00
MN-54	1.84E-05
CO-58	8.41E-05
CO-60	3.07E-05
KR-85	2.10E-01
KR-85M	5.33E-01
KR-87	3.67E-03
KR-88	3.94E-01
SR-89	2.54E-05
SR-90	8.30E-09
I-131	1.73E-02
XE-131M	1.31E+01
I-133	7.02E-03
XE-133	3.61E+03
XE-133M	1.16E+01
CS-134	5.09E-04
I-135	1.08E-04
XE-135	8.79E+00
CS-136	1.86E-04
CS-137	7.84E-04
BA-140	2.18E-04
LA-140	1.29E-04

not less than

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	6.35E-05
CR-51	2.64E-02
MN-54	3.72E-03
FE-55	2.35E-02
CO-57	1.10E-04
CO-58	5.06E-02
FE-59	4.65E-04
CO-60	5.79E-02
ZN-65	1.06E-04
SR-89	<8.00E-08
SR-90	<1.50E-08
NB-95	2.82E-03
ZR-95	8.05E-04
ZR-97	9.50E-06
MO-99-TC-99M	4.31E-04 → 3.41E-04
RU-103	7.16E-04
AG-110M	3.00E-03
SB-124	1.08E-04
SB-125	4.02E-02 → 3.72E-02

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

INSTALLATION: TURKEY POINT 3

LOCATION: 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1986
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS
NUCLIDES RELEASED

ACTIVITY (CI)

I-131	5.55E-03
XE-131M	7.10E-04
TE-132	4.50E-06
I-133	2.70E-04
XE-133	2.16E-01
XE-133M	1.06E-03
CS-134	9.95E-03
XE-135	1.31E-02
CS-137	2.40E-02
LA-140	2.49E-03

TOTAL AIRBORNE TRITIUM RELEASE	2.97E+02
TOTAL LIQUID TRITIUM RELEASE	3.63E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.48E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.50E+12

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

INSTALLATION-TURKEY POINT 3

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986
SUPPLEMENTAL INFORMATION

UNIT NUMBER 3 TYPE PWR
DOCKET NO. 50-250
COMMERCIAL OPERATION 12/14/72
COOLING WATER SOURCE CLOSED CYCLE CANAL

LICENSEE FLORIDA POWER & LIGHT
LICENSED POWER (MWT) 2200.
INITIAL CRITICALITY 10/20/72

MAXIMUM PERMISSIBLE CONCENTRATIONS(MICROCURI/ML)

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

FISSION AND ACTIVATION GASES
GAMMA SPECTRUM ANALYSIS

IODINES

ABSORPTION OF HALOGEN RADIONUCLIDES ON A CHARCOAL FILTER AND SUBSEQUENT GAMMA-SPECTRUM ANALYSIS.

PARTICULATES

REMOVAL OF PARTICULATE MATERIAL BY FILTRATION AND SUBSEQUENT GAMMA-SPECTRUM ANALYSIS, SR-89-90 DETERMINATION, GROSS ALPHA ANALYSIS AND GROSS BETA-GAMMA ANALYSIS.

LIQUID EFFLUENTS

ALIQUOTS OF REPRESENTATIVE PRE-RELEASE SAMPLES WERE EITHER ISOTOPICALLY ANALYZED FOR GAMMA EMITTING ISOTOPES ON A MULTICHANNEL ANALYZER OR EVAPORATED AND ANALYZED FOR GROSS BETA-GAMMA ACTIVITY IN A 2 PI GAS FLOW PROPORTIONAL COUNTER. THE EFFICIENCY OF THE GAS FLOW PROPORTIONAL COUNTER IS ADJUSTED SO THAT THE ACTIVITY DETERMINED BY GROSS BETA-GAMMA ANALYSIS APPROXIMATES THE ISOTOPIC ACTIVITIES DETERMINED BY GAMMA SPECTRUM ANALYSIS AND SELECTED BETA DETERMINATIONS, EXCLUSIVE OF TRITIUM AND DISSOLVED GASES. THE ABOVE PROCEDURE WAS FOLLOWED FOR ALL RELEASES FROM THE WASTE DISPOSAL SYSTEM AND FOR SECONDARY SYSTEM BATCH RELEASES. FREQUENT PERIODIC SAMPLING AND ANALYSIS WERE USED TO CONSERVATIVELY ESTIMATE THE QUANTITY OF RADIOACTIVITY RELEASED VIA THE STEAM GENERATOR BLOWDOWN SYSTEM.

INSTALLATION-TURKEY POINT 3

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA
N/A

FIRST SIX
MONTHS

GAMMA
N/A

FIRST SIX
MONTHS

BATCH RELEASES

A. LIQUID

1. NUMBER OF BATCH RELEASES-	212
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	1.96E 4
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.80E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	9.25E 1
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	5.00E 1
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-	4.24E 6

B. GASEOUS

1. NUMBER OF BATCH RELEASES-	9.75E 2	-
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	2.40E 2	-
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	2.17E 2	-
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	3.00E 1	-
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-		

ABNORMAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASED(CURIES)	0.00E 0

B. GASEOUS

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASES(CURIES)	0.00E 0

Leave at 4, no other changes
for time periods

We cannot enter 4.5 as the
total number of release.
Do you want it left as 4
or changed to 5 releases
and do you want the
various time periods
changed as well

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 3

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA
N/A

SECOND SIX
MONTHS

GAMMA
N/A

SECOND SIX
MONTHS

BATCH RELEASES
A. LIQUID

1. NUMBER OF BATCH RELEASES-	127
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	1.19E 4
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.40E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	9.37E 1
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	5.50E 1
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-	5.22E 6

B. GASEOUS

1. NUMBER OF BATCH RELEASES-	4	5
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	1.28E 4	-
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	6.00E 2	-
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	2.83E 2	-
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	3.00E 1	-

ABNORMAL RELEASES
A. LIQUID

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASED(CURIES)	0.00E 0

B. GASEOUS

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASES(CURIES)	0.00E 0

No other changes for time periods.

We can't enter 4.5 on the top
Do you wish you to leave
the 4 release or change it
to 5 and to recalculate
the various times associated
with it

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	8.80E 2	1.17E 3	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.12E 2	1.49E 2	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
B. IODINES				
1. TOTAL IODINE-131	CI	1.13E- 3	5.76E- 4	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.44E- 4	7.33E- 5	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	5.27E- 5	2.13E- 5	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.70E- 6	2.71E- 6	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	7.12E- 8	4.36E- 8	
D. TRITIUM				
1. TOTAL RELEASE	CI	2.58E 1	5.68E 1	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	3.28E 0	7.22E 0	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	7.38E 2	8.64E 2	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	9.29E 1	1.10E 2	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
B. IODINES				
1. TOTAL IODINE-131	CI	3.06E- 3	1.25E- 2	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	3.89E- 4	1.59E- 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	4.77E- 4	1.50E- 3	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.07E- 5	1.91E- 4	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	5.05E- 8	5.08E- 8	
D. TRITIUM				
1. TOTAL RELEASE	CI	8.60E 1	1.28E 2	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.09E 1	1.63E 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
AR-41	CI	7.22E- 2	2.96E- 1	7.01E- 2	N/D
KR-85M	CI	2.09E- 2	7.67E- 2	5.30E- 2	N/D
KR-87	CI	N/D	1.48E- 3		
KR-88	CI	6.97E- 3	6.36E- 2		
XE-131M	CI	6.37E- 1	1.38E 0	2.30E 0	N/D
XE-133	CI	6.67E 2	1.17E 3	2.06E 2	N/D
XE-133M	CI	5.32E- 1	1.53E 0	1.69E 0	N/D
XE-135	CI	3.74E- 1	1.35E 0	1.16E 0	N/D
IODINES					
I-131	CI	1.13E- 3	5.76E- 4		
I-133	CI	3.77E- 4	3.87E- 4		
I-135	CI	1.08E- 4	N/D		
PARTICULATES					
CO-58	CI	1.99E- 5	1.22E- 6		
CO-60	CI	1.78E- 5	4.04E- 6		
SR-89	CI	<3.85E-16	1.39E- 7		
SR-90	CI	8.30E- 9	<2.56E-16		
I-131	CI	1.51E- 6	1.34E- 6		
CS-134	CI	1.98E- 6	5.05E- 7		
CS-137	CI	1.15E- 5	1.41E- 5		

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AR-41	CI	1.59E- 1	2.27E- 1	2.61E 0	1.91E- 1
KR-85	CI	N/D	2.10E- 1		
KR-85M	CI	6.91E- 2	1.20E- 1	7.04E- 2	1.23E- 1
KR-87	CI	2.19E- 3	N/D		
KR-88	CI	4.66E- 2	9.46E- 2	6.12E- 2	1.21E- 1
XE-131M	CI	9.66E- 1	3.17E 0	1.60E 0	3.03E 0
XE-133	CI	5.39E 2	5.31E 2	1.80E 2	3.17E 2
XE-133M	CI	1.36E 0	2.64E 0	1.36E 0	2.51E 0
XE-135	CI	1.08E 0	1.93E 0	1.13E 0	1.77E 0
IODINES					
I-131	CI	3.06E- 3	1.25E- 2		
I-133	CI	2.80E- 3	3.46E- 3		
PARTICULATES					
MN-54	CI	5.70E- 6	1.27E- 5		
CO-58	CI	3.55E- 5	2.75E- 5		
CO-60	CI	7.20E- 6	1.70E- 6		
SR-89	CI	3.84E- 6	2.14E- 5		
SR-90	CI	N/D	N/D		
I-131	CI	1.38E- 5	4.26E- 5		
CS-134	CI	6.50E- 5	4.42E- 4		
CS-136	CI	2.33E- 5	1.63E- 4		
CS-137	CI	2.38E- 4	5.20E- 4		
BA-140	CI	5.85E- 5	1.59E- 4		
LA-140	CI	2.63E- 5	1.03E- 4		

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1986
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	1.20E- 1	5.15E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.19E-10	9.15E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
B. TRITIUM				
1. TOTAL RELEASE	CI	9.25E 1	6.10E 1	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	5.35E- 6•	6.51E- 6•	
3. PERCENT OF APPLICABLE LIMIT	%			
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	1.40E- 1	1.50E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.56E-10	2.67E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	N/D	N/D	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.66E 6	1.58E 6	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.48E 11	5.63E 11	

• BASED ON COOLING CANAL TRITIUM CONCENTRATION

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1986 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	4.64E- 2	3.51E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	7.00E-11	4.87E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
B. TRITIUM				
1. TOTAL RELEASE	CI	7.50E 1	1.35E 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	6.04E- 6	8.11E- 6	
3. PERCENT OF APPLICABLE LIMIT	%			
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	3.80E- 2	3.76E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	5.70E-11	5.20E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	N/D	N/D	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.87E 6	1.37E 6	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.65E 11	7.20E 11	

• BASED ON COOLING CANAL TRITIUM CONCENTRATION

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR 1986
LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
NA-24	CI			5.00E- 6	
CR-51	CI			2.12E- 2	3.51E- 3
MN-54	CI			5.70E- 4	9.55E- 4
FE-55	CI			8.60E- 3	3.95E- 3
CO-57	CI			1.00E- 5	1.25E- 5
CO-58	CI			2.26E- 2	1.28E- 2
FE-59	CI			4.62E- 4	3.50E- 6
CO-60	CI			1.74E- 2	1.16E- 2
ZN-65	CI			1.70E- 5	3.70E- 5
SR-89	CI			<1.00E- 8	<2.00E- 8
SR-90	CI			<3.00E- 9	<3.00E- 9
NB-95	CI			1.42E- 3	9.60E- 4
ZR-95	CI			4.95E- 4	2.16E- 4
ZR-97	CI				9.50E- 6
MO-99-TC-99M	CI			3.26E- 4	3.40E- 5
RU-103	CI			5.65E- 4	9.95E- 5
AG-110M	CI			1.23E- 3	1.34E- 3
SB-124	CI			8.25E- 5	2.50E- 5
SB-125	CI			2.55E- 2	2.38E- 3
I-131	CI			2.63E- 3	7.05E- 4
I-133	CI			1.52E- 4	3.30E- 5
XE-133	CI			1.29E- 1	1.50E- 2
CS-134	CI			4.53E- 3	3.83E- 3
XE-135	CI			1.10E- 2	
CS-137	CI			1.04E- 2	9.00E- 3
LA-140	CI			2.00E- 3	3.50E- 6

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE

INSTALLATION=TURKEY POINT 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986
LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
NA-24	CI				5.85E- 5
CR-51	CI			1.42E- 3	2.68E- 4
MN-54	CI			3.34E- 4	1.86E- 3
FE-55	CI			8.20E- 3	2.73E- 3
CO-57	CI			4.85E- 5	3.90E- 5
CO-58	CI			1.11E- 2	4.08E- 3
CO-60	CI			1.45E- 2	1.44E- 2
ZN-65	CI			5.20E- 5	
SR-89	CI			<3.00E- 8	<2.00E- 8
SR-90	CI			<5.00E- 9	<4.00E- 9
NB-95	CI			4.37E- 4	
ZR-95	CI			9.40E- 5	
MO-99-TC-99M	CI			5.25E- 5	1.85E- 5
RU-103	CI			5.15E- 5	
AG-110M	CI			4.10E- 4	2.25E- 5
SB-125	CI			6.35E- 3	6.00E- 3
I-131	CI			1.01E- 3	1.20E- 3
XE-131M	CI			7.10E- 4	
TE-132	CI				4.50E- 6
I-133	CI			3.55E- 5	4.90E- 5
XE-133	CI			3.68E- 2	3.49E- 2
XE-133M	CI			1.95E- 4	8.70E- 4
CS-134	CI			5.10E- 4	1.08E- 3
XE-135	CI			2.69E- 4	1.79E- 3
CS-137	CI			1.62E- 3	2.99E- 3
LA-140	CI			2.28E- 4	2.59E- 4

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION: TURKEY POINT 4

LOCATION: 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1986
AIRBORNE AND LIQUID EFFLUENTS

*Question on
Gaseous Patch Release*

UNIT NUMBER: 4 TYPE: PWR LICENSEE: FLORIDA POWER & LIGHT
DOCKET NO.: 50-251 LICENSED POWER (MWT): 2200.00
COMMERCIAL OPERATION: 09/07/73 INITIAL CRITICALITY: 06/11/73
COOLING WATER SOURCE: CLOSED CYCLE CANAL

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.56E+00
MN-54	1.84E-05
CO-58	8.41E-05
CO-60	3.07E-05
KR-85M	3.90E-02
KR-87	2.17E-03
KR-88	1.68E-02
SR-89	2.54E-05
SR-90	8.30E-09
I-131	1.94E-03
XE-131M	1.25E+00
I-133	1.73E-03
XE-133	1.00E+03
XE-133M	8.82E-01
CS-134	5.09E-04
I-135	1.08E-04
XE-135	1.03E+00
CS-136	1.86E-04
CS-137	7.84E-04
BA-140	2.18E-04
LA-140	1.29E-04

not less than

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	6.35E-05
CR-51	2.64E-02
MN-54	3.72E-03
FE-55	2.35E-02
CO-57	1.10E-04
CO-58	5.06E-02
FE-59	4.65E-04
CO-60	5.79E-02
ZN-65	1.06E-04
SR-89	<8.00E-08
SR-90	<1.50E-08
NB-95	2.82E-03
ZR-95	8.05E-04
ZR-97	9.50E-06
MO-99-TC-99M	4.31E-04 → 3.41E-04
RU-103	7.16E-04
AG-110M	3.00E-03
SB-124	1.08E-04
SB-125	4.02E-02 → 3.72E-02
I-131	5.55E-03

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

INSTALLATION: TURKEY POINT 4

LOCATION: 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1986
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
XE-131M	7.10E-04
TE-132	4.50E-06
I-133	2.69E-04
XE-133	2.16E-01
XE-133M	1.06E-03
CS-134	9.95E-03
XE-135	1.31E-02
CS-137	2.40E-02
LA-140	2.49E-03

TOTAL AIRBORNE TRITIUM RELEASE 2.97E+02
TOTAL LIQUID TRITIUM RELEASE 3.63E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.48E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.50E+12

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

INSTALLATION-TURKEY POINT 4

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986
SUPPLEMENTAL INFORMATION

UNIT NUMBER 4 TYPE PWR
DOCKET NO. 50-251
COMMERCIAL OPERATION 09/07/73
COOLING WATER SOURCE CLOSED CYCLE CANAL

LICENSEE FLORIDA POWER & LIGHT
LICENSED POWER (MWT) 2200.
INITIAL CRITICALITY 06/11/73

MAXIMUM PERMISSIBLE CONCENTRATIONS(MICROCURIES/ML)

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

FISSION AND ACTIVATION GASES
GAMMA SPECTRUM ANALYSIS

IODINES

ABSORPTION OF HALOGEN RADIONUCLIDES ON A CHARCOAL FILTER AND SUBSEQUENT GAMMA-SPECTRUM ANALYSIS.

PARTICULATES

REMOVAL OF PARTICULATE MATERIAL BY FILTRATION AND SUBSEQUENT GAMMA-SPECTRUM ANALYSIS, SR-89-90 DETERMINATION, GROSS ALPHA ANALYSIS AND GROSS BETA-GAMMA ANALYSIS.

LIQUID EFFLUENTS

ALIQOTS OF REPRESENTATIVE PRE-RELEASE SAMPLES WERE EITHER ISOTOPICALLY ANALYZED FOR GAMMA EMITTING ISOTOPES ON A MULTICHANNEL ANALYZER OR EVAPORATED AND ANALYZED FOR GROSS BETA-GAMMA ACTIVITY IN A 2 PI GAS FLOW PROPORTIONAL COUNTER. THE EFFICIENCY OF THE GAS FLOW PROPORTIONAL COUNTER IS ADJUSTED SO THAT THE ACTIVITY DETERMINED BY GROSS BETA-GAMMA ANALYSIS APPROXIMATES THE ISOTOPIC ACTIVITIES DETERMINED BY GAMMA SPECTRUM ANALYSIS AND SELECTED BETA DETERMINATIONS, EXCLUSIVE OF TRITIUM AND DISSOLVED GASES. THE ABOVE PROCEDURE WAS FOLLOWED FOR ALL RELEASES FROM THE WASTE DISPOSAL SYSTEM AND FOR SECONDARY SYSTEM BATCH RELEASES. FREQUENT PERIODIC SAMPLING AND ANALYSIS WERE USED TO CONSERVATIVELY ESTIMATE THE QUANTITY OF RADIOACTIVITY RELEASED VIA THE STEAM GENERATOR BLOWDOWN SYSTEM.



INSTALLATION-TURKEY POINT 4

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA
N/A

FIRST SIX
MONTHS

GAMMA
N/A

FIRST SIX
MONTHS

BATCH RELEASES

A. LIQUID

1. NUMBER OF BATCH RELEASES-	212
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	1.96E 4
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.80E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	9.25E 1
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	5.00E 1
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-	4.24E 6

change to 4, leave other numbers alone

B. GASEOUS

1. NUMBER OF BATCH RELEASES-	3
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	7.35E 2
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	2.40E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	2.10E 2
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	3.00E 1

Can't enter 3.5 as the total number of releases

ABNORMAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASED(CURIES)	0.00E 0

B. GASEOUS

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASES(CURIES)	0.00E 0

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION=TURKEY POINT 4

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA
N/A

SECOND SIX
MONTHS

GAMMA
N/A

SECOND SIX
MONTHS

BATCH RELEASES

A. LIQUID

1. NUMBER OF BATCH RELEASES-	127
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	1.19E 4
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.40E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	9.37E 1
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	5.50E 1
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-	5.22E 6

Leave as is

B. GASEOUS

1. NUMBER OF BATCH RELEASES-	5
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	5.55E 2
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	2.40E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	1.01E 2
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	3.00E 1

?

*Can't enter 5.5 as the total
number of releases:*

ABNORMAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASED(CURIES)	0.00E 0

B. GASEOUS

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASES(CURIES)	0.00E 0

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	6.82E 2	4.08E- 2	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	8.68E 1	5.19E- 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
B. IODINES				
1. TOTAL IODINE-131	CI	1.13E- 3	0.00E 0	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.44E- 4	0.00E 0	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	5.27E- 5	2.00E- 5	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.70E- 6	2.54E- 6	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	7.12E- 8	4.36E- 8	
D. TRITIUM				
1. TOTAL RELEASE	CI	2.58E 1	5.68E 1	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	3.28E 0	7.22E 0	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES,

	UNIT	QUARTER 3	QUARTER 4	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	5.37E 1	2.73E 2	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.83E 0	3.47E 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
B. IODINES				
1. TOTAL IODINE-131	CI	2.82E- 4	4.87E- 4	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	3.59E- 5	6.20E- 5	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	4.62E- 4	1.50E- 5	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	5.88E- 5	1.91E- 4	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	5.05E- 8	5.08E- 8	
D. TRITIUM				
1. TOTAL RELEASE	CI	8.60E 1	1.28E 2	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.09E 1	1.63E 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION=TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
AR-41	CI	2.72E- 2	N/D	9.14E- 1	N/D
KR-85M	CI	2.82E- 3	N/D	1.69E- 2	N/D
XE-131M	CI	1.24E- 1	N/D	7.46E- 1	N/D
XE-133	CI	6.18E 2	N/D	6.10E 1	4.08E- 2
XE-133M	CI	8.60E- 2	N/D	5.21E- 1	N/D
XE-135	CI	6.68E- 2	N/D	4.04E- 1	N/D
IODINES					
I-131	CI	1.13E- 3	N/D		
I-133	CI	3.77E- 4	N/D		
I-135	CI	1.08E- 4	N/D		
PARTICULATES					
CO-58	CI	1.99E- 5	1.22E- 6		
CO-60	CI	1.78E- 5	4.04E- 6		
SR-89	CI	<3.85E-16	1.39E- 7		
SR-90	CI	8.30E- 9	<2.56E-16		
I-131	CI	1.51E- 6	N/D		
CS-134	CI	1.98E- 6	5.05E- 7		
CS-137	CI	1.15E- 5	1.41E- 5		

INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1986
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AR-41	CI	1.29E- 1	2.53E- 1	2.87E- 2	2.06E- 1
KR-85M	CI	N/D	1.93E- 2		
KR-87	CI	N/D	2.17E- 3		
KR-88	CI	N/D	1.68E- 2		
XE-131M	CI	N/D	3.83E- 1		
XE-133	CI	5.29E 1	2.70E 2	5.48E- 1	2.40E 0
XE-133M	CI	N/D	2.75E- 1		
XE-135	CI	3.91E- 2	3.69E- 1	6.86E- 2	8.20E- 2
IODINES					
I-131	CI	2.82E- 4	4.87E- 4		
I-133	CI	9.90E- 4	3.61E- 4		
PARTICULATES					
MN-54	CI	5.70E- 6	1.27E- 5		
CO-58	CI	3.55E- 5	2.75E- 5		
CO-60	CI	7.20E- 6	1.70E- 6		
SR-89	CI	3.84E- 6	2.14E- 5		
I-131	CI	N/D	4.26E- 5		
CS-134	CI	6.50E- 5	4.42E- 4		
CS-136	CI	2.33E- 5	1.63E- 4		
CS-137	CI	2.38E- 4	5.20E- 4		
BA-140	CI	5.85E- 5	1.59E- 4		
LA-140	CI	2.63E- 5	1.03E- 4		

INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1986
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	1.20E- 1	5.15E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.19E-10	9.15E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
B. TRITIUM				
1. TOTAL RELEASE	CI	9.25E 1	6.10E 1	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	5.35E- 6	6.51E- 6	
3. PERCENT OF APPLICABLE LIMIT	%			
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	1.40E- 1	1.50E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.56E-10	2.67E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	N/D	N/D	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.66E 6	1.58E 6	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.48E 11	5.63E 11	

• BASED ON COOLING CANAL TRITIUM CONCENTRATION

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1986
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	4.64E- 2	3.51E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	7.00E-11	4.87E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
B. TRITIUM				
1. TOTAL RELEASE	CI	7.50E 1	1.35E 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	6.04E- 6*	8.11E- 6*	
3. PERCENT OF APPLICABLE LIMIT	%			
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	3.80E- 2	3.76E- 2	
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	5.70E-11	5.20E-11	
3. PERCENT OF APPLICABLE LIMIT	%			
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	N/D	N/D	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.87E 6	1.37E 6	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.65E 11	7.20E 11	

* BASED ON COOLING CANAL TRITIUM CONCENTRATION

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INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986
LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
NA-24	CI			5.00E- 6	
CR-51	CI			2.12E- 2	3.51E- 3
MN-54	CI			5.70E- 4	9.55E- 4
FE-55	CI			8.60E- 3	3.95E- 3
CO-57	CI			1.00E- 5	1.25E- 5
CO-58	CI			2.26E- 2	1.28E- 2
FE-59	CI			4.62E- 4	3.50E- 6
CO-60	CI			1.74E- 2	1.16E- 2
ZN-65	CI			1.70E- 5	3.70E- 5
SR-89	CI			<1.00E- 8	<2.00E- 8
SR-90	CI			<3.00E- 9	<3.00E- 9
NB-95	CI			1.42E- 3	9.60E- 4
ZR-95	CI			4.95E- 4	2.16E- 4
ZR-97	CI				9.50E- 6
MO-99-TC-99M	CI			3.26E- 4	3.40E- 5
RU-103	CI			5.65E- 4	9.95E- 5
AG-110M	CI			1.23E- 3	1.34E- 3
SB-124	CI			8.25E- 5	2.50E- 5
SB-125	CI			2.55E- 2	2.38E- 3
I-131	CI			2.63E- 3	7.05E- 4
I-133	CI			1.52E- 4	3.30E- 5
XE-133	CI			1.29E- 1	1.50E- 2
CS-134	CI			4.53E- 3	3.83E- 3
XE-135	CI			1.10E- 2	
CS-137	CI			1.04E- 2	9.00E- 3
LA-140	CI			2.00E- 3	3.50E- 6

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INSTALLATION-TURKEY POINT 4

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1986
LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
NA-24	CI				5.85E- 5
CR-51	CI			1.42E- 3	2.68E- 4
MN-54	CI			3.34E- 4	1.86E- 3
FE-55	CI			8.20E- 3	2.73E- 3
CO-57	CI			4.85E- 5	3.90E- 5
CO-58	CI			1.11E- 2	4.08E- 3
CO-60	CI			1.45E- 2	1.44E- 2
ZN-65	CI			5.20E- 5	
SR-89	CI			<3.00E- 8	<2.00E- 8
SR-90	CI			<5.00E- 9	<4.00E- 9
NB-95	CI			4.37E- 4	
ZR-95	CI			9.40E- 5	
MO-99-TC-99M	CI			5.25E- 5	1.85E- 5
RU-103	CI			5.15E- 5	
AG-110M	CI			4.10E- 4	2.25E- 5
SB-125	CI			6.35E- 3	6.00E- 3
I-131	CI			1.01E- 3	1.20E- 3
XE-131M	CI			7.10E- 4	
TE-132	CI				4.50E- 6
I-133	CI			3.55E- 5	4.90E- 5
XE-133	CI			3.68E- 2	3.49E- 2
XE-133M	CI			1.95E- 4	8.70E- 4
CS-134	CI			5.10E- 4	1.08E- 3
XE-135	CI			2.69E- 4	1.79E- 3
CS-137	CI			1.62E- 3	2.99E- 3
LA-140	CI			2.28E- 4	2.59E- 4

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