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A Duke Energy Company

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April 30, 2003

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414
2002 Annual Radioactive Effluent Release Report

Pursuant to Catawba Nuclear Station Technical Specification 5.6.3 and Selected Licensee Commitment 16.11-16.2, please find attached the Catawba Annual Radioactive Effluent Release Report for the period of January 1, 2002 through December 31, 2002. No revisions were made to the Process Control Program during this period.

Attachment I	Radioactive Effluent Releases
Attachment II	Supplemental Information
Attachment III	Solid Waste Disposal Report
Attachment IV	Meteorological Data
Attachment V	Unplanned Offsite Releases
Attachment VI	Assessment of Radiation Dose from Radioactive Effluents to Members of the Public (includes fuel cycle dose calculation results)
Attachment VII	UFSAR Section 16.11 Radiological Effluent Controls
Enclosure	Offsite Dose Calculation Manual (CD-ROM)

Any questions concerning this report should be directed to Kay Nicholson at 803.831.3237.

Sincerely,

Gary R. Peterson

Attachments and Enclosure (1)

s\2002 ARERR

xc: L. A. Reyes, Regional Administrator, Region II
R. E. Martin, NRR Senior Project Manager
*E. F. Guthrie, Senior Resident Inspector

*without enclosure

IE48
A009
A053

ATTACHMENT I

Summary of Liquid and Gaseous Effluents Report

CATAWBA NUCLEAR STATION

EFFLUENT RELEASE DATA

(January 1, 2002 through December 31, 2002)

This attachment includes a summary of the quantities of radioactive liquid and gaseous effluents as outlined in Regulatory Guide 1.21, Appendix B.

TABLE 1A

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
A. Fission and Activation Gases						
1. Total Release	Ci	6.37E-01	9.36E-01	4.93E-01	9.02E-01	2.97E+00
2. Avg. Release Rate	µCi/sec	8.19E-02	1.19E-01	6.20E-02	1.13E-01	9.41E-02
B. Iodine-131						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Release Rate	µCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Particulates Half Life >= 8 days						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Release Rate	µCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D. Tritium						
1. Total Release	Ci	5.74E+01	5.29E+01	7.09E+01	6.08E+01	2.42E+02
2. Avg. Release Rate	µCi/sec	7.38E+00	6.73E+00	8.91E+00	7.65E+00	7.67E+00

TABLE 1B

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS EFFLUENTS - ELEVATED RELEASES - CONTINUOUS MODE

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
1. Fission and Activation Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
2. Iodines						
** No Nuclide Activities **		.....	.....	.....	.....	.....
3. Particulates Half Life >= 8 days						
** No Nuclide Activities **		.....	.....	.....	.....	.....
4. Tritium						
** No Nuclide Activities **		.....	.....	.....	.....	.....

TABLE 1B

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS EFFLUENTS - ELEVATED RELEASES - BATCH MODE

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
1. Fission and Activation Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
2. Iodines						
** No Nuclide Activities **		.....	.....	.....	.....	.....
3. Particulates Half Life >= 8 days						
** No Nuclide Activities **		.....	.....	.....	.....	.....
4. Tritium						
** No Nuclide Activities **		.....	.....	.....	.....	.....

TABLE 1C

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS EFFLUENTS - GROUND RELEASES - CONTINUOUS MODE

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
1. Fission and Activation Gases						
XE-133	Ci	0.00E+00	0.00E+00	4.37E-06	0.00E+00	4.37E-06
Totals for Period...	Ci	0.00E+00	0.00E+00	4.37E-06	0.00E+00	4.37E-06
2. Iodines						
** No Nuclide Activities **		.....	.....	.....	.....	.....
3. Particulates Half Life >= 8 days						
** No Nuclide Activities **		.....	.....	.....	.....	.....
4. Tritium						
H-3	Ci	5.67E+01	4.61E+01	7.05E+01	6.06E+01	2.34E+02
Totals for Period...	Ci	5.67E+01	4.61E+01	7.05E+01	6.06E+01	2.34E+02

TABLE 1C

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS EFFLUENTS - GROUND RELEASES - BATCH MODE

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
1. Fission and Activation Gases						
AR-41	Ci	4.81E-01	2.57E-01	3.76E-01	4.33E-01	1.55E+00
KR-85	Ci	1.36E-01	4.79E-02	3.62E-02	7.17E-02	2.92E-01
XE-133	Ci	1.97E-02	6.31E-01	8.05E-02	3.80E-01	1.11E+00
XE-135	Ci	2.36E-04	5.34E-04	6.88E-04	1.78E-02	1.93E-02
Totals for Period...	Ci	6.37E-01	9.36E-01	4.93E-01	9.03E-01	2.97E+00
2. Iodines						
** No Nuclide Activities **		.....	.....	.....	.....	.....
3. Particulates Half Life >= 8 days						
** No Nuclide Activities **		.....	.....	.....	.....	.....
4. Tritium						
H-3	Ci	6.67E-01	6.86E+00	3.25E-01	2.47E-01	8.10E+00
Totals for Period...	Ci	6.67E-01	6.86E+00	3.25E-01	2.47E-01	8.10E+00

TABLE 2A

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
A. Fission and Activation Products						
1. Total Release	Ci	1.55E-02	4.58E-02	1.05E-02	1.04E-02	8.22E-02
2. Average Diluted Concentration						
a. Continuous Releases	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
b. Batch Releases	µCi/ml	6.39E-10	1.94E-09	3.52E-10	3.92E-10	7.89E-10
B. Tritium						
1. Total Release	Ci	1.77E+02	3.99E+02	1.70E+02	2.82E+02	1.03E+03
2. Average Diluted Concentration						
a. Continuous Releases	µCi/ml	1.16E-06	9.37E-07	4.53E-07	8.30E-08	6.41E-07
b. Batch Releases	µCi/ml	7.19E-06	1.68E-05	5.65E-06	1.06E-05	9.80E-06
C. Dissolved and Entrained Gases						
1. Total Release	Ci	0.00E+00	3.38E-05	0.00E+00	0.00E+00	3.38E-05
2. Average Diluted Concentration						
a. Continuous Releases	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
b. Batch Releases	µCi/ml	0.00E+00	1.43E-12	0.00E+00	0.00E+00	3.24E-13
D. Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Diluted Concentration						
a. Continuous Releases	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
b. Batch Releases	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
E. Volume of Liquid Waste						
1. Continuous Releases	liters	1.39E+08	1.89E+08	1.14E+08	4.99E+07	4.92E+08
2. Batch Releases	liters	5.55E+05	2.14E+06	5.62E+05	5.97E+05	3.86E+06
F. Volume of Dilution Water						
1. Continuous Releases	liters	2.42E+09	2.36E+09	2.99E+09	2.65E+09	1.04E+10
2. Batch Releases	liters	2.42E+10	2.36E+10	2.99E+10	2.65E+10	1.04E+11

TABLE 2B

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID EFFLUENTS - CONTINUOUS MODE

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
1. Fission and Activation Products						
** No Nuclide Activities **		.....	.....	.....	.....	.....
2. Tritium						
H-3	Ci	2.97E+00	2.39E+00	1.41E+00	2.24E-01	6.99E+00
Totals for Period...	Ci	2.97E+00	2.39E+00	1.41E+00	2.24E-01	6.99E+00
3. Dissolved and Entrained Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
4. Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

TABLE 2B

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID EFFLUENTS - BATCH MODE

Catawba Nuclear Station Units 1 & 2

REPORT FOR 2002	Unit	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
1. Fission and Activation Products						
AG-110M	Ci	0.00E+00	0.00E+00	0.00E+00	3.92E-05	3.92E-05
BE-7	Ci	0.00E+00	1.13E-05	0.00E+00	0.00E+00	1.13E-05
BR-82	Ci	0.00E+00	1.16E-06	0.00E+00	0.00E+00	1.16E-06
CE-143	Ci	0.00E+00	2.46E-05	0.00E+00	0.00E+00	2.46E-05
CO-57	Ci	9.34E-05	1.72E-04	3.84E-05	9.26E-05	3.97E-04
CO-58	Ci	8.22E-03	2.90E-02	8.35E-03	6.77E-03	5.23E-02
CO-60	Ci	4.37E-03	9.60E-03	1.84E-03	2.83E-03	1.86E-02
CR-51	Ci	2.52E-04	2.25E-03	0.00E+00	0.00E+00	2.50E-03
CS-134	Ci	4.33E-06	4.73E-05	0.00E+00	0.00E+00	5.16E-05
CS-137	Ci	2.72E-05	5.46E-04	1.73E-05	1.34E-05	6.04E-04
FE-59	Ci	5.86E-05	4.22E-04	2.50E-05	0.00E+00	5.05E-04
MN-54	Ci	7.88E-04	2.71E-03	2.25E-04	2.01E-04	3.92E-03
NB-95	Ci	2.54E-05	5.10E-05	0.00E+00	0.00E+00	7.64E-05
NB-97	Ci	1.43E-05	2.47E-05	0.00E+00	1.57E-05	5.46E-05
SB-124	Ci	1.76E-04	3.94E-05	0.00E+00	0.00E+00	2.15E-04
SB-125	Ci	1.44E-03	8.56E-04	3.35E-05	4.28E-04	2.76E-03
SN-113	Ci	0.00E+00	0.00E+00	8.24E-07	0.00E+00	8.24E-07
SR-92	Ci	0.00E+00	0.00E+00	0.00E+00	5.41E-06	5.41E-06
TC-99M	Ci	0.00E+00	2.74E-05	0.00E+00	0.00E+00	2.74E-05
ZN-65	Ci	0.00E+00	3.62E-06	0.00E+00	0.00E+00	3.62E-06
ZR-95	Ci	2.42E-06	1.84E-05	0.00E+00	0.00E+00	2.08E-05
ZR-97	Ci	0.00E+00	5.21E-05	0.00E+00	0.00E+00	5.21E-05
Totals for Period...	Ci	1.55E-02	4.59E-02	1.05E-02	1.04E-02	8.22E-02
2. Tritium						
H-3	Ci	1.74E+02	3.97E+02	1.69E+02	2.82E+02	1.02E+03
Totals for Period...	Ci	1.74E+02	3.97E+02	1.69E+02	2.82E+02	1.02E+03
3. Dissolved and Entrained Gases						
AR-41	Ci	0.00E+00	3.38E-05	0.00E+00	0.00E+00	3.38E-05
Totals for Period...	Ci	0.00E+00	3.38E-05	0.00E+00	0.00E+00	3.38E-05
4. Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

ATTACHMENT II

Supplemental Information

to the

Liquid and Gaseous Effluents Report

CATAWBA NUCLEAR STATION

2002 EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION

I. REGULATORY LIMITS - PER UNIT

A. NOBLE GASES - AIR DOSE

1. CALENDAR QUARTER - GAMMA DOSE = 5 MRAD
2. CALENDAR QUARTER - BETA DOSE = 10 MRAD
3. CALENDAR YEAR - GAMMA DOSE = 10 MRAD
4. CALENDAR YEAR - BETA DOSE = 20 MRAD

B. LIQUID EFFLUENTS - DOSE

1. CALENDAR QUARTER - TOTAL BODY DOSE = 1.5 MREM
2. CALENDAR QUARTER - ORGAN DOSE = 5 MREM
3. CALENDAR YEAR - TOTAL BODY DOSE = 3 MREM
4. CALENDAR YEAR - ORGAN DOSE = 10 MREM

C. IODINE - 131 AND 133, TRITIUM, PARTICULATES W/T 1/2 > 8 DAYS - ORGAN DOSE

1. CALENDAR QUARTER = 7.5 MREM
2. CALENDAR YEAR = 15 MREM

II. MAXIMUM PERMISSIBLE EFFLUENT CONCENTRATIONS

A. GASEOUS EFFLUENTS - INFORMATION FOUND IN OFFSITE DOSE CALCULATION MANUAL
B. LIQUID EFFLUENTS - INFORMATION FOUND IN 10CFR20, APPENDIX B, TABLE 2, COLUMN 2

III. AVERAGE ENERGY - NOT APPLICABLE

IV. MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

INFORMATION FOUND IN OFFSITE DOSE CALCULATION MANUAL

V. BATCH RELEASES

A. LIQUID EFFLUENT

1. 1.26E+02 = TOTAL NUMBER OF BATCH RELEASES
2. 7.06E+03 = TOTAL TIME (MIN.) FOR BATCH RELEASES.
3. 1.07E+02 = MAXIMUM TIME (MIN.) FOR A BATCH RELEASE.
4. 5.60E+01 = AVERAGE TIME (MIN.) FOR A BATCH RELEASE.
5. 2.90E+01 = MINIMUM TIME (MIN.) FOR A BATCH RELEASE.
6. 5.23E+04 = AVERAGE DILUTION WATER FLOW DURING RELEASES (GPM).

B. GASEOUS EFFLUENT

1. 7.50E+01 = TOTAL NUMBER OF BATCH RELEASES.
2. 1.02E+06 = TOTAL TIME (MIN.) FOR BATCH RELEASES.
3. 4.44E+04 = MAXIMUM TIME (MIN.) FOR A BATCH RELEASE.
4. 1.36E+04 = AVERAGE TIME (MIN.) FOR A BATCH RELEASE.
5. 1.20E+02 = MINIMUM TIME (MIN.) FOR A BATCH RELEASE.

VI. ABNORMAL RELEASES

A. LIQUID

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

B. GASEOUS

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

CATAWBA NUCLEAR STATION

The estimated percentage of error for both Liquid and Gaseous effluent release data at Catawba Nuclear Station has been determined to be ± 25.2%. This value was derived by taking the square root of the sum of the squares of the following discrete individual estimates of error:

(1) Flow rate determining devices = ± 20%

(2) Counting error = ± 15%

(3) Sample preparation error = ± 3%

ATTACHMENT III

Solid Waste Disposal Report

CATAWBA NUCLEAR STATION - SOLID RADIOACTIVE WASTE SHIPPED TO A DISPOSAL FACILITY

REPORT PERIOD 1/1/2002 TO 12/31/2002

Type of Waste Shipped	Number of Shipments *	Number of Containers *	Waste Class *	Container Type *	Burial Volume (ft^3)	Burial Volume (m^3)	Total Activity (Curies)
1. Waste from Liquid Systems							
(A) Dewatered Secondary Resins	0	0	NA	NA	0.0	0.00	0.000
(B) Dewatered Primary Resins	4	4	2 AS 2 B	4 HIC	652.2	18.47	195.421
(C) Evaporator Concentrates	0	0	NA	NA	0.0	0.00	0.000
(D) Dewatered Mechanical Filters	1	1	1 C	1 HIC	120.3	3.41	394.400
(E) Dewatered Demineralizers	0	0	NA	NA	0.0	0.00	0.000
(F) Solidified (Cement) Acids, Oils, Sludges	0	0	NA	NA	0.0	0.00	0.000
2. Dry Solid Waste							
(A) Dry Active Waste (compacted)	0	0	NA	NA	0.0	0.00	0.000
(B) Dry Active Waste (non-compacted)	1	1	1 AS	1 HIC	120.3	3.41	36.470
(C) Dry Active Waste (brokered)	NA	NA	NA	NA	1070.4	30.31	2.306
(D) Irradiated Components	0	0	NA	NA	0.0	0.00	0.000
3. All Solid Waste	6 *	6 *	NA *	NA *	1963.2	55.60	628.597

* Does not included brokered Dry Active Waste totals.

CATAWBA NUCLEAR STATION - SOLID RADIOACTIVE WASTE

SUMMARY OF PRINCIPAL RADIONUCLIDE COMPOSITION

REPORT PERIOD 1/1/2002 TO 12/31/2002

Type of Waste Shipped	Radionuclide	% Abundance *
1. Waste from Liquid Systems		
(A) Dewatered Secondary Resins	(None shipped this period)	
(B) Dewatered Primary Resins	Cr-51	0.7%
	Mn-54	5.1%
	Co-57	0.4%
	Co-58	13.4%
	Co-60	10.7%
	Sn-113	0.1%
	Sb-125	0.2%
	Cs-134	0.2%
	Cs-137	0.6%
	C-14	0.2%
	Fe-55	32.7%
	Ni-59	0.2%
	Ni-63	35.7%
(C) Evaporator Concentrates	(None shipped this period)	
(D) Dewatered Mechanical Filters	Mn-54	1.4%
	Co-57	0.1%
	Co-58	0.1%
	Co-60	15.2%
	Zn-65	0.3%
	Ag-110m	0.1%
	Sb-125	0.6%
	Fe-55	68.0%
	Ni-63	14.1%
(E) Dewatered Demineralizers	(None shipped this period)	
(F) Solidified (Cement) Acids, Oils, Sludges	(None shipped this period)	

* Average percent abundance for all shipments during period (unlisted if <0.1%).

CATAWBA NUCLEAR STATION - SOLID RADIOACTIVE WASTE

SUMMARY OF PRINCIPAL RADIONUCLIDE COMPOSITION

REPORT PERIOD 1/1/2002 TO 12/31/2002

Type of Waste Shipped	Radionuclide	% Abundance *
2. Dry Solid Waste		
(A) Dry Active Waste (compacted)	(None shipped this period)	
(B) Dry Active Waste (non-compacted)	H-3	1.5%
	Cr-51	1.6%
	Mn-54	1.9%
	Co-57	0.1%
	Co-58	12.3%
	Co-60	13.9%
	Nb-95	0.4%
	Zr-95	0.3%
	Ag-110m	0.2%
	Sb-124	0.1%
	Sb-125	0.5%
	Cs-134	0.1%
	Cs-137	0.1%
	Ba/La-140	0.2%
	Ce-144	0.1%
	Fe-55	57.6%
	Ni-63	9.1%
(C) Dry Active Waste (brokered)	H-3	1.5%
	Cr-51	1.4%
	Mn-54	1.9%
	Co-57	0.1%
	Co-58	11.7%
	Co-60	14.1%
	Nb-95	0.3%
	Zr-95	0.2%
	Ag-110m	0.2%
	Sb-124	0.1%
	Sb-125	0.5%
	Cs-134	0.1%
	Cs-137	0.1%
	Ba/La-140	0.2%
	Ce-144	0.1%
	Fe-55	58.1%
	Ni-63	9.3%
(D) Irradiated Components	(None shipped this period)	

* Average percent abundance for all shipments during period (unlisted if <0.1%).

CATAWBA NUCLEAR STATION - SOLID RADIOACTIVE WASTE

SUMMARY OF PRINCIPAL RADIONUCLIDE COMPOSITION

REPORT PERIOD 1/1/2002 TO 12/31/2002

Type of Waste Shipped	Radionuclide	% Abundance *
3. All Solid Waste	H-3	0.1%
	Cr-51	0.3%
	Mn-54	2.6%
	Co-57	0.2%
	Co-58	5.0%
	Co-60	13.7%
	Zn-65	0.2%
	Ag-110m	0.1%
	Sb-125	0.5%
	Cs-134	0.1%
	Cs-137	0.2%
	C-14	0.1%
	Fe-55	56.4%
	Ni-59	0.1%
	Ni-63	20.6%

* Average percent abundance for all shipments during period (unlisted if <0.1%).

ATTACHMENT IV

Meteorological Data

CATAWBA NUCLEAR STATION

2002 METEOROLOGICAL JOINT FREQUENCY DISTRIBUTIONS

OF WIND SPEED, WIND DIRECTION, AND ATMOSPHERIC STABILITY

USING WINDS AT THE 10 M LEVEL

(Hours of Occurrence)

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 1
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY A

	WIND SPEED CLASS								
	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-5.99	6.00-7.99	8.00-9.99	TOTAL
	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
SECTOR									
-N-	.	.	.	3	28	11	1	.	43
-NNE-	.	.	.	5	12	6	2	.	25
-NE-	.	1	.	1	.	4	.	.	6
-E-	.	.	.	2	.	.	.	.	2
-ESE-	.	.	.	1	.	.	.	.	1
-SE-	.	.	5	8	.	.	.	.	13
-SSE-	.	.	9	18	1	.	.	.	28
-S-	.	1	1	3	1	.	.	.	6
-SSW-	.	.	5	30	11	.	.	.	46
-SW-	.	1	9	26	6	.	.	.	42
-WSW-	.	.	7	10	2	1	.	.	20
-W-	1	1	11	5	5	.	.	.	23
-WNW-	1	.	1	10	9	4	2	1	28
-NW-	.	.	2	5	2	2	1	1	13
-NNW-	.	.	.	.	1	10	3	.	14
TOTAL	2	4	50	127	78	38	9	2	310

10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY B

	WIND SPEED CLASS							
	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-5.99	6.00-7.99	8.00-9.99	TOTAL
	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
SECTOR								
-N-	.	.	17	23	2	.	.	42
-NNE-	1	1	11	21	6	4	.	44
-NE-	.	.	1	3	2	.	.	6
-ENE-	.	.	3	.	1	.	.	4
-E-	1	4	.	.	.	.	.	5
-ESE-	.	5	.	.	.	.	.	5
-SE-	.	7	4	.	.	.	.	11
-SSE-	2	16	11	.	.	.	.	29
-S-	.	12	6	5	.	.	.	23
-SSW-	1	20	37	10	.	.	.	68
-SW-	2	27	21	6	1	2	.	59
-WSW-	1	13	5	1	.	.	.	20
-W-	.	10	3	1	.	.	.	14
-WNW-	1	9	4	6	1	.	.	21
-NW-	.	4	6	8	2	.	.	20
-NNW-	.	.	1	6	7	.	1	15
TOTAL	9	128	130	90	22	6	1	386

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 3
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY C

	WIND SPEED CLASS								
	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-5.99	6.00-7.99	8.00-9.99	TOTAL
	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
SECTOR									
-N-	.	1	10	35	37	4	1	.	88
-NNE-	.	2	6	19	50	6	4	.	87
-NE-	.	.	4	5	16	9	.	.	34
-ENE-	.	.	.	3	3	3	.	.	9
-E-	.	2	4	2	.	.	.	.	8
-ESE-	.	.	6	1	1	.	.	.	8
-SE-	.	8	7	4	.	.	.	.	19
-SSE-	.	9	34	18	1	.	.	.	62
-S-	.	5	19	7	1	.	.	.	32
-SSW-	.	10	46	27	7	2	1	.	93
-SW-	1	3	27	13	2	1	2	.	49
-WSW-	.	12	28	2	1	.	.	.	43
-W-	.	4	13	2	1	.	.	.	20
-WNW-	1	3	17	7	7	1	3	.	39
-NW-	.	2	10	6	3	3	.	.	24
-NNW-	.	.	9	7	5	3	2	1	27
TOTAL	2	61	240	158	135	32	13	1	642

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 4
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY D

	WIND SPEED CLASS										
	0.45-0.74	0.75-0.99	1.00-1.24	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-7.99	8.00-9.99	TOTAL
SECTOR	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
-N-	.	1	.	5	33	106	185	131	37	12	.	510
-NNE-	.	.	.	3	10	51	260	294	64	10	.	692
-NE-	.	.	.	.	3	12	93	111	32	2	.	253
-ENE-	.	.	.	3	10	10	18	4	6	.	.	51
-E-	.	.	1	1	9	8	4	2	.	1	.	26
-ESE-	.	1	1	5	7	10	1	1	.	.	.	26
-SE-	.	3	1	3	23	16	13	3	.	.	.	62
-SSE-	.	2	5	14	48	79	23	8	.	.	.	179
-S-	.	.	6	8	56	79	30	18	3	.	.	200
-SSW-	2	1	5	17	56	181	59	22	8	4	.	355
-SW-	.	2	8	18	71	60	33	14	7	2	.	215
-WSW-	.	4	4	14	30	41	10	3	.	.	.	106
-W-	.	3	6	14	22	29	6	3	.	.	.	83
-WNW-	.	3	6	9	25	40	15	8	2	2	.	110
-NW-	.	.	1	9	33	47	15	7	4	.	.	116
-NNW-	.	1	3	4	45	94	59	18	6	6	2	238
TOTAL	2	21	47	127	481	863	824	647	169	39	2	3222

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 5
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY E

	WIND SPEED CLASS										
	0.45-0.74	0.75-0.99	1.00-1.24	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-5.99	6.00-7.99	TOTAL
SECTOR	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
-N-	.	.	3	2	6	66	75	17	2	.	171
-NNE-	.	.	.	2	4	19	15	9	.	.	49
-NE-	.	.	1	1	2	7	6	13	20	1	51
-ENE-	.	.	1	2	4	6	9	5	3	1	31
-E-	.	.	.	.	2	6	5	2	.	.	15
-ESE-	.	.	1	3	2	9	2	1	.	.	18
-SE-	.	3	1	4	6	31	17	13	.	.	75
-SSE-	.	1	6	13	46	52	26	4	.	.	148
-S-	.	6	25	41	114	149	35	3	2	1	376
-SSW-	1	8	27	53	124	106	34	14	4	.	371
-SW-	2	10	29	51	69	56	25	7	.	.	249
-WSW-	.	13	24	29	35	13	6	1	.	.	121
-W-	2	7	13	25	41	23	1	1	.	.	113
-WNW-	.	3	15	22	43	36	12	2	.	.	133
-NW-	.	5	12	19	44	44	17	4	5	.	150
-NNW-	.	1	7	6	37	124	59	4	.	.	238
TOTAL	5	57	165	273	579	747	344	100	36	3	2309

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 6
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY F

	WIND SPEED CLASS									
	0.45-0.74	0.75-0.99	1.00-1.24	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-5.99	TOTAL
	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
SECTOR										
-N-	.	.	1	.	4	22	11	.	.	38
-NNE-	.	.	.	1	.	2	1	1	.	5
-NE-	.	.	.	.	.	.	2	1	2	5
-E-	.	.	1	.	1	1	.	.	.	3
-ESE-	.	.	.	1	1	2	.	1	1	6
-SE-	.	.	1	1	2	9	3	6	1	23
-SSE-	.	3	2	5	21	11	2	.	.	44
-S-	2	1	19	41	81	14	.	.	.	158
-SSW-	.	6	18	38	80	14	1	.	.	157
-SW-	1	9	20	30	17	4	.	.	.	81
-WSW-	.	7	14	12	16	6	.	.	.	55
-W-	2	11	13	7	29	17	1	.	.	80
-WNW-	1	3	10	13	24	23	1	.	.	75
-NW-	.	3	12	14	28	13	.	.	.	70
-NNW-	.	1	1	14	47	87	6	1	.	157
-CALM-	2	.	.	.	.	.	.	.	.	2
TOTAL	8	44	112	177	351	225	28	10	4	959

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 7
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

PASQUILL STABILITY G

	WIND SPEED CLASS							
	0.45-0.74	0.75-0.99	1.00-1.24	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	TOTAL
	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
SECTOR								
-N-	.	1	.	.	6	13	1	21
-NNE-	.	.	.	.	.	1	.	1
-SSE-	.	1	3	5	10	1	.	20
-S-	.	7	21	43	48	4	.	123
-SSW-	.	9	22	35	43	6	.	115
-SW-	1	9	17	20	19	5	.	71
-WSW-	5	11	10	10	9	3	.	48
-W-	1	11	19	14	14	8	.	67
-WNW-	4	9	9	10	15	2	.	49
-NW-	2	10	10	23	20	4	.	69
-NNW-	.	2	5	17	40	23	.	87
-CALM-	3	.	.	.	.	.	.	3
TOTAL	16	70	116	177	224	70	1	674

CATAWBA NUCLEAR STN. METEOROLOGY (2002) PROG=XOQFREQ 14:08 Monday, February 24, 2003 8
10M WIND SPEED/DIRECTION/DELTA-T STABILITY
STABILITY CLASSES BASED ON DELTA-T BETWEEN UPPER-LOWER LEVELS

ALL STABILITY CLASSES

	WIND SPEED CLASS											
	0.45-0.74	0.75-0.99	1.00-1.24	1.25-1.49	1.50-1.99	2.00-2.99	3.00-3.99	4.00-4.99	5.00-5.99	6.00-7.99	8.00-9.99	TOTAL
SECTOR	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
-N-	.	2	4	7	50	217	327	236	56	14	.	913
-NNE-	.	.	.	6	17	80	311	387	82	20	.	903
-NE-	.	.	1	1	6	23	108	144	69	3	.	355
-ENE-	.	.	1	5	14	16	33	12	13	1	.	95
-E-	.	.	2	1	15	23	13	4	.	1	.	59
-ESE-	.	1	2	9	10	32	5	4	1	.	.	64
-SE-	.	6	3	8	39	75	49	22	1	.	.	203
-SSE-	.	7	16	37	136	202	98	14	.	.	.	510
-S-	2	14	71	133	305	278	81	28	5	1	.	918
-SSW-	3	24	72	143	314	378	188	64	14	5	.	1205
-SW-	4	30	74	120	182	188	118	35	9	6	.	766
-WSW-	5	35	52	65	103	111	33	8	1	.	.	413
-W-	5	32	51	61	111	111	18	11	.	.	.	400
-WNW-	5	18	40	56	111	128	49	32	8	7	1	455
-NW-	2	18	35	65	127	124	49	24	16	1	1	462
-NNW-	.	5	16	41	169	337	132	35	26	11	4	776
-CALM-	5	.	.	.	.	.	.	.	.	.	.	5
TOTAL	31	192	440	758	1709	2323	1612	1060	301	70	6	8502

ATTACHMENT V

Unplanned Offsite Releases

CATAWBA NUCLEAR STATION

UNPLANNED RELEASES

(January 1, 2002 through December 31, 2002)

There were no unplanned liquid or gaseous radioactive effluent releases to the environment in 2002.

ATTACHMENT VI

Assessment of Radiation Dose from

Radioactive Effluents to

Members of the Public

(includes fuel cycle dose calculation results)

CATAWBA NUCLEAR STATION

Assessment of Radiation Dose from Radioactive Effluents to Members of the Public

(January 1, 2002 through December 31, 2002)

This attachment includes an assessment of radiation doses to the maximum exposed member of the public due to radioactive liquid and gaseous effluents released from the site for each calendar quarter for the calendar year of this report, as well as the total dose for the calendar year. This attachment also includes an assessment of radiation doses to the maximum exposed member of the public from all uranium fuel cycle sources within 10 miles of Catawba for the calendar year of this report to show conformance with 40 CFR 190. Methods for calculating the dose contribution from liquid and gaseous effluents are given in the ODCM.

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

1st Quarter 2002

=== IODINE, H3, AND PARTICULATE DOSE LIMIT ANALYSIS======= Quarter 1 2002 ====

Period-Limit	Critical Group	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q1 - Maximum Organ Dose	CHILD	LIVER	2.76E-01	1.50E+01	1.84E+00

Maximum Organ Dose Receptor Location: 0.5 Mile N
Critical Pathway: Vegetation

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

=== NOBLE GAS DOSE LIMIT ANALYSIS========================= Quarter 1 2002 ====

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q1 - Maximum Gamma Air Dose	4.99E-03	1.00E+01	4.99E-02

Maximum Gamma Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	9.98E+01

Q1 - Maximum Beta Air Dose	2.07E-03	2.00E+01	1.04E-02

Maximum Beta Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	8.47E+01
KR-85	1.42E+01

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

2nd Quarter 2002

=== IODINE, H3, AND PARTICULATE DOSE LIMIT ANALYSIS======= Quarter 2 2002 ====

Period-Limit	Critical Group	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q2 - Maximum Organ Dose	CHILD	LIVER	2.55E-01	1.50E+01	1.70E+00

Maximum Organ Dose Receptor Location: 0.5 Mile N
Critical Pathway: Vegetation

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

=== NOBLE GAS DOSE LIMIT ANALYSIS========== Quarter 2 2002 ====

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q2 - Maximum Gamma Air Dose	2.90E-03	1.00E+01	2.90E-02

Maximum Gamma Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	9.14E+01
XE-133	8.53E+00

Q2 - Maximum Beta Air Dose	1.78E-03	2.00E+01	8.89E-03

Maximum Beta Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	5.26E+01
XE-133	4.14E+01
KR-85	5.84E+00

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

3rd Quarter 2002

=== IODINE, H3, AND PARTICULATE DOSE LIMIT ANALYSIS======= Quarter 3 2002 ====

Period-Limit	Critical Group	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q3 - Maximum Organ Dose	CHILD	LIVER	3.41E-01	1.50E+01	2.27E+00

Maximum Organ Dose Receptor Location: 0.5 Mile N
Critical Pathway: Vegetation

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

=== NOBLE GAS DOSE LIMIT ANALYSIS========== Quarter 3 2002 ====

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q3 - Maximum Gamma Air Dose	3.92E-03	1.00E+01	3.92E-02

Maximum Gamma Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	9.91E+01

Q3 - Maximum Beta Air Dose	1.55E-03	2.00E+01	7.73E-03

Maximum Beta Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	8.87E+01
XE-133	6.09E+00
KR-85	5.09E+00

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

4th Quarter 2002

=== IODINE, H3, AND PARTICULATE DOSE LIMIT ANALYSIS======= Quarter 4 2002 ====

Period-Limit	Critical Group	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q4 - Maximum Organ Dose	CHILD	LIVER	2.93E-01	1.50E+01	1.95E+00

Maximum Organ Dose Receptor Location: 0.5 Mile N
Critical Pathway: Vegetation

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

=== NOBLE GAS DOSE LIMIT ANALYSIS========== Quarter 4 2002 ====

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q4 - Maximum Gamma Air Dose	4.66E-03	1.00E+01	4.66E-02

Maximum Gamma Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	9.60E+01

Q4 - Maximum Beta Air Dose	2.23E-03	2.00E+01	1.11E-02

Maximum Beta Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	7.09E+01
XE-133	1.99E+01
KR-85	6.99E+00

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
GASEOUS ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

ANNUAL 2002

=== IODINE, H3, AND PARTICULATE DOSE LIMIT ANALYSIS======= Annual 2002 ========

Period-Limit	Critical Group	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Yr - Maximum Organ Dose	CHILD	LIVER	1.16E+00	3.00E+01	3.88E+00

Maximum Organ Dose Receptor Location: 0.5 Mile N
Critical Pathway: Vegetation

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

=== NOBLE GAS DOSE LIMIT ANALYSIS========== Annual 2002 ========

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Yr - Maximum Gamma Air Dose	1.65E-02	2.00E+01	8.24E-02

Maximum Gamma Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	9.71E+01

Yr - Maximum Beta Air Dose	7.63E-03	4.00E+01	1.91E-02

Maximum Beta Air Dose Receptor Location: 0.5 Mile NNE

Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
AR-41	7.40E+01
XE-133	1.70E+01
KR-85	8.30E+00

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

1st Quarter 2002

=== BATCH LIQUID RELEASES ========== Quarter 1 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q1 - Maximum Organ Dose	ADULT	GI-LLI	1.47E-02	1.00E+01	1.47E-01
Q1 - Total Body Dose	ADULT		8.60E-03	3.00E+00	2.87E-01

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	4.51E+01
NB-95	2.28E+01
CO-60	1.60E+01
CO-58	9.16E+00
MN-54	6.45E+00

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	7.72E+01
CS-137	9.66E+00
CO-60	7.82E+00

=== CONTINUOUS LIQUID RELEASES (WC) ========== Quarter 1 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q1 - Maximum Organ Dose	ADULT	LIVER	1.07E-03	1.00E+01	1.07E-02
Q1 - Total Body Dose	ADULT		1.07E-03	3.00E+00	3.57E-02

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

2nd Quarter 2002

=== BATCH LIQUID RELEASES ========== Quarter 2 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q2 - Maximum Organ Dose	TEEN	LIVER	5.02E-02	1.00E+01	5.02E-01
Q2 - Total Body Dose	ADULT		3.80E-02	3.00E+00	1.27E+00

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
CS-137	5.51E+01
H-3	2.31E+01
CO-60	1.18E+01
CS-134	6.27E+00

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
CS-137	4.56E+01
H-3	4.14E+01
CS-134	6.68E+00

=== CONTINUOUS LIQUID RELEASES (WC) ========== Quarter 2 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q2 - Maximum Organ Dose	ADULT	LIVER	8.75E-04	1.00E+01	8.75E-03
Q2 - Total Body Dose	ADULT		8.75E-04	3.00E+00	2.92E-02

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

3rd Quarter 2002

=== BATCH LIQUID RELEASES ========== Quarter 3 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q3 - Maximum Organ Dose	ADULT	GI-LLI	7.54E-03	1.00E+01	7.54E-02
Q3 - Total Body Dose	ADULT		6.15E-03	3.00E+00	2.05E-01

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	7.07E+01
CO-58	1.50E+01
CO-60	1.09E+01

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	8.66E+01
CS-137	7.12E+00

=== CONTINUOUS LIQUID RELEASES (WC) ========== Quarter 3 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q3 - Maximum Organ Dose	ADULT	LIVER	4.28E-04	1.00E+01	4.28E-03
Q3 - Total Body Dose	ADULT		4.28E-04	3.00E+00	1.43E-02

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

4th Quarter 2002

=== BATCH LIQUID RELEASES ========== Quarter 4 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q4 - Maximum Organ Dose	ADULT	GI-LLI	1.27E-02	1.00E+01	1.27E-01
Q4 - Total Body Dose	ADULT		1.10E-02	3.00E+00	3.65E-01

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	7.88E+01
CO-60	1.12E+01
CO-58	8.15E+00

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	9.15E+01

=== CONTINUOUS LIQUID RELEASES (WC) ========== Quarter 4 2002 ======

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q4 - Maximum Organ Dose	ADULT	LIVER	7.83E-05	1.00E+01	7.83E-04
Q4 - Total Body Dose	ADULT		7.83E-05	3.00E+00	2.61E-03

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
PERIOD 1/1/02 TO 1/1/03
LIQUID ANNUAL DOSE SUMMARY REPORT

Catawba Nuclear Station Units 1 & 2

ANNUAL 2002

=== BATCH LIQUID RELEASES ========== Annual 2002 =========

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Yr - Maximum Organ Dose	TEEN	LIVER	7.11E-02	2.00E+01	3.56E-01
Yr - Total Body Dose	ADULT		6.07E-02	6.00E+00	1.01E+00

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
CS-137	3.91E+01
H-3	3.81E+01
CO-60	1.48E+01

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	6.05E+01
CS-137	2.87E+01

=== CONTINUOUS LIQUID RELEASES (WC) ========== Annual 2002 =========

Period-Limit	Critical Age	Critical Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Yr - Maximum Organ Dose	ADULT	LIVER	2.40E-03	2.00E+01	1.20E-02
Yr - Total Body Dose	ADULT		2.40E-03	6.00E+00	4.00E-02

Maximum Organ
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Total Body
Critical Pathway: Fresh Water Fish
Major Isotopic Contributors (5% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Catawba Nuclear Station
2002 Radioactive Effluent Releases
40CFR190 Uranium Fuel Cycle Dose* Calculation Results

Maximum Total Body Dose = 1.21E+00 mrem

Maximum Location: 0.5 Mile, North Sector
Critical Age = Child

Liquid and Gas Effluent Contribution to Maximum Total Body Dose

Liquid Effluent Dose = 4.46E-02 mrem = 4% of total

Critical Path = Potable Water
Major Contributors = H-3 (80.1%)
Cs-137 (8.4%)
Co-60 (7.0%)

Gas Effluent Dose = 1.16E+00 mrem = 96% of total

Critical Path = Vegetation
Major Contributor = H-3 (100%)

Maximum Organ Dose = 1.23E+00 mrem

Maximum Location: 0.5 Mile, North Sector
Critical Age = Child
Critical Organ = LIVER

Liquid and Gas Effluent Contribution to Maximum Organ Dose

Liquid Effluent Dose = 6.75E-02 mrem = 5% of total

Critical Path = Fresh Water Fish
Major Contributors = H-3 (52.9%)
Cs-137 (37.1%)

Gas Effluent Dose = 1.16E+00 mrem = 95% of total

Critical Path = Vegetation
Major Contributor = H-3 (100%)

* Annual dose limits from 40CFR190.10(a) of 25 mrem whole body, 75 mrem to the thyroid, and 25 mrem to any other organ.