Southern Nuclear
Operating Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

Tel 205.992.5000

SOUTHERN COMPANY
Energy to Serve Your World℠

April 30, 2007

Docket Nos.: 50-321 50-348 50-424
50-366 50-364 50-425

NL-07-0778

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant
Joseph M. Farley Nuclear Plant
Vogtle Electric Generating Plant
Annual Radioactive Effluent Release Reports for 2006

Ladies and Gentlemen:

In accordance with section 5.6.3 of the referenced plants' Technical Specifications, Southern Nuclear Operating Company hereby submits the Annual Radioactive Effluent Release Reports for 2006. The Annual Radioactive Effluent Release Report for the Edwin I. Hatch Nuclear Plant (Hatch), Joseph M. Farley Nuclear Plant (Farley), and the Vogtle Electric Generating Plant (Vogtle) are provided in Enclosures 1, 2, and 3, respectively.

Technical Specification 5.5.1.c. for each plant requires that the Offsite Dose Calculation Manual (ODCM) be provided as a part of, or concurrent with, the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. During the reporting period for the Annual Radioactive Effluent Release Report for 2006, the Farley and Hatch ODCMs were revised. Accordingly, copies of the Hatch and Farley ODCMs are provided in Enclosures 5 and 6, respectively. Revision bars provided in the Farley ODCM represent changes associated with the Revision 22, dated March 2006. Due to issuance of multiple revisions to the Hatch ODCM during the reporting period, revision bars provided in the Hatch ODCM are identified by the applicable revision and date of the change. A description of the changes for each ODCM, summarized by revision, is provided in Section 8.0 of the Annual Radioactive Effluent Release Report for the corresponding plant.

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

J. M. Godfrey
Manager, Environmental Affairs

JMG/TWS/pr

IE48
A009

Enclosures:
1. Hatch Annual Radioactive Effluent Release Report for 2006
2. Farley Annual Radioactive Effluent Release Report for 2006
3. Vogtle Annual Radioactive Effluent Release Report for 2006
4. Hatch Offsite Dose Calculation Manual – Version 19
5. Farley Offsite Dose Calculation Manual – Version 22

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. J. R. Johnson, Vice President – Farley
Mr. D. R. Madison., Vice President – Hatch
Mr. T. E. Tynan, Vice President – Vogtle
RType: CFA04.054; CHA02.004; CVC7000; LC#14574

U. S. Nuclear Regulatory Commission
Dr. W. D. Travers, Regional Administrator
Ms. K. R. Cotton, NRR Project Manager – Farley
Mr. R. E. Martin, NRR Project Manager – Hatch
Mr. B. K. Singal, NRR Project Manager – Vogtle
Mr. E. L. Crowe, Senior Resident Inspector – Farley
Mr. D. S. Simpkins, Senior Resident Inspector – Hatch
Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

State of Alabama
Mr. K. E. Whatley, Department of Public Health, Division of Radiation Control

State of Georgia
Mr. T. V. Jackson, Department of Natural Resources

Georgia Power Company
Mr. M. C. Nichols

American Nuclear Insurers
Mr. R. A. Oliveira

ENCLOSURE 1

Edwin I. Hatch Nuclear Plant
Annual Radioactive Effluent Release Report for 2006

SOUTHERN COMPANY

E. I. HATCH NUCLEAR PLANT

UNITS NO. 1 & 2

ANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

JANUARY 1, 2006 THROUGH DECEMBER 31, 2006

SECTION	TITLE	PAGE
1.0	Liquid Effluents	1
1.1	Regulatory Requirements	1
1.1.1	Concentration Limits	1
1.1.2	Dose Limits	1
1.2	Effluent Concentration Limit	1
1.3	Measurements and Approximations of Total Radioactivity for Liquid Radwaste	2
1.3.1	Total Radioactivity Determination for Liquid Radwaste	2
1.4	Measurements and Approximations of Total Radioactivity for Groundwater Outfalls – Y22N003A/12B and Y22N008A	4
1.4.1	Total Radioactivity Determination for Groundwater Outfalls	4
1.5	Total Error Estimation	5
1.6	Liquid Effluent Release Data	6
1.7	Radiological Impact Due to Liquid Releases	7
1.8	Liquid Effluents - Batch Releases	7
1.9	Liquid Effluents - Continuous Releases	7

SECTION	TITLE	PAGE
1.10	Liquid Effluents - Abnormal Releases	7
2.0	Gaseous Effluents	29
2.1	Regulatory Requirements	29
2.1.1	Dose Rate Limits	29
2.1.2	Air Doses Due to Noble Gases in Gaseous Releases	29
2.1.3	Doses to a Member of the Public	29
2.2	Measurements and Approximations of Total Radioactivity	30
2.2.1	Sample Collection and Analysis	30
2.2.2	Total Quantities of Radioactivity, Dose Rates and Cumulative Doses	31
2.2.2.1	Fission and Activation Gases	31
2.2.2.2	Radioiodine, Tritium and Particulate Releases	31
2.2.2.3	Gross Alpha Release	32
2.2.3	Total Error Estimation	32
2.3	Gaseous Effluent Release Data	34
2.4	Radiological Impact Due to Gaseous Releases	35
2.5	Gaseous Effluents - Batch Releases	35
2.6	Gaseous Effluents - Abnormal Releases	35
3.0	Solid Waste	67
3.1	Regulatory Requirements	67
3.1.1	Solid Radioactive Waste System	67
3.1.2	Reporting Requirements	67

SECTION	TITLE	PAGE
3.2	Solid Waste Data	68
4.0	Doses to Members of the Public Inside The Site Boundary	72
4.1	Regulatory Requirements	72
4.2	Demonstration of Compliance	72
5.0	Total Dose from Uranium Fuel Cycle (40 CFR 190)	81
5.1	Regulatory Requirements	81
5.2	Demostration of Compliance	81
6.0	Meteorological Data	81
7.0	Program Deviations	81
7.1	Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation	81
7.1.1	Regulatory Requirements	81
7.1.2	Description of Deviations	82
7.2	Tanks Exceeding Curie Content Limits	82
7.2.1	Regulatory Requirements	82
7.2.2	Description of Deviations	82
7.3	Effluent Sample Analysis Exceeding Minimum Detectable Concentration (MDC)	82
7.3.1	Regulatory Requirement	82
7.3.2	Description of Deviation	82

SECTION	TITLE	PAGE
8.0	Changes to the Plant Hatch Offsite Dose Calculation Manual (ODCM)	82
8.1	Regulatory Requirements	82
8.2	Description of Changes	83
9.0	Major Changes to the Liquid, Gaseous or Solid Radwaste Treatment Systems	83
9.1	Regulatory Requirements	83
9.2	Description of Major Changes	84

SOUTHERN COMPANY

E. I. HATCH NUCLEAR PLANT

UNITS NO. 1 & 2

ANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

TABLE	LIST OF TABLES	PAGE
1-1A	Liquid Effluents - Summation of All Releases Unit 1 (Quarters 1, 2, 3 and 4)	8
1-1B	Liquid Effluents - Summation of All Releases Unit 2 (Quarters 1, 2, 3 and 4)	10
1-1C	Liquid Effluents - Summation of All Releases Site (Quarters 1, 2, 3 and 4)	12
1-2A	Liquid Effluents - Unit 1 (Quarters 1, 2, 3 and 4)	14
1-2B	Liquid Effluents - Unit 2 (Quarters 1, 2, 3 and 4)	16
1-2C	Liquid Effluents - Site (Quarters 1, 2, 3 and 4)	18
1-3A	Doses to a Member of The Public Due to Liquid Releases Unit 1 (Quarters 1, 2, 3 and 4)	20
1-3B	Doses to a Member of The Public Due to Liquid Releases Unit 2 (Quarters 1, 2, 3 and 4)	22
1-4	Minimum Detectable Concentration - Liquid Sample Analysis	24
1-5A	Liquid Effluents - Batch Release Summary Unit 1	25
1-5B	Liquid Effluents - Batch Release Summary Unit 2	26

TABLE	LIST OF TABLES	PAGE

1-6A	Liquid Effluents - Abnormal Release Summary Unit 1	27
1-6B	Liquid Effluents - Abnormal Release Summary Unit 2	28
2-1A	Gaseous Effluents - Summation of All Releases - Unit 1 (Quarters 1, 2, 3 and 4)	36
2-1B	Gaseous Effluents - Summation of All Releases -Unit 2 (Quarters 1, 2, 3 and 4)	38
2-1C	Gaseous Effluents - Summation of All Releases - Site (Quarters 1, 2, 3 and 4)	40
2-2A	Gaseous Effluents - Elevated Releases Unit 1 (Quarters 1, 2, 3 and 4)	42
2-2B	Gaseous Effluents - Elevated Releases Unit 2 (Quarters 1, 2, 3 and 4)	44
2-2C	Gaseous Effluents - Elevated Releases Site (Quarters 1, 2, 3 and 4)	46
2-3A	Gaseous Effluents - Ground Level Releases Unit 1 (Quarters 1, 2, 3 and 4)	48
2-3B	Gaseous Effluents - Ground Level Releases Unit 2 (Quarters 1, 2, 3 and 4)	50
2-3C	Gaseous Effluents - Ground Level Releases Site (Quarters 1, 2, 3 and 4)	52
2-4A	Air Doses Due to Noble Gases in Gaseous Releases - Unit 1 (Quarters 1, 2, 3 and 4)	54

TABLE	LIST OF TABLES	PAGE

2-4B	Air Doses Due to Noble Gases in Gaseous Releases- Unit 2 (Quarters 1, 2, 3 and 4)	56
2-5A	Doses to a Member of the Public Due to Radioiodine, Tritium, and Particulates in Gaseous Releases - Unit 1 (Quarters 1, 2, 3 and 4)	58
2-5B	Doses to a Member of the Public Due to Radioiodine, Tritium, and Particulates in Gaseous Releases - Unit 2 (Quarters 1, 2, 3 and 4)	60
2-6	Minimum Detectable Concentration - Gaseous Sample Analyses	62
2-7A	Gaseous Effluents - Batch Release Summary Unit 1	63
2-7B	Gaseous Effluents - Batch Release Summary Unit 2	64
2-8A	Gaseous Effluents - Abnormal Release Summary Unit 1	65
2-8B	Gaseous Effluents - Abnormal Release Summary Unit 2	66
3-1	Solid Waste and Irradiated Fuel Shipments	69
4-1	Doses to a Member of the Public Due to Activities Inside The Site Boundary	73

1.0 Liquid Effluents

1.1 Regulatory Requirements

1.1.1 Concentration Limits

The concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS shall be limited to ten times the concentrations specified in 10 CFR Part 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 1E-04 microcuries/ml total activity.

1.1.2 Dose Limits

The dose or dose commitment, to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS, shall be limited:

a. During any calendar quarter, to less than or equal to 1.5 mrems to the whole body and to less than or equal to 5 mrems to any organ, and

b. During any calendar year, to less than or equal to 3 mrems to the whole body and to less than or equal to 10 mrems to any organ.

1.2 Effluent Concentration Limit

ECL values used in determining allowable liquid radwaste release rates and concentrations, for principal gamma emitters, I-131, tritium, Sr-89, Sr-90 and Fe-55, are taken from 10 CFR Part 20, Appendix B, Table 2, Column 2.
A tolerance factor of up to 10 is utilized to allow flexibility in establishing practical monitor set points which can accommodate effluent releases at concentrations higher than the ECL values stated in 10 CFR 20, Appendix B, Table 2, Column 2.

For dissolved or entrained noble gases in liquid radwaste, the ECL is 1E-04 uCi/ml total activity.

For gross alpha in liquid radwaste, the ECL is 2E-09 uCi/ml.

Furthermore, for all the above radionuclides, or categories of radioactivity, the overall ECL fraction is determined in accordance with 10 CFR Part 20, Appendix B.

The method utilizing the ECL fraction to determine liquid radwaste release rates and effluent radiation monitor set points is described in Subsection 1.3 of this report.

The method utilizing the ECL fraction to determine the dose released from groundwater outfalls is described in Subsection 1.4 of this report.

1.3 Measurements and Approximations of Total Radioactivity for Liquid Radwaste

Prior to the release of any tank containing liquid radwaste, following the required recirculations, samples are collected and analyzed in accordance with the Edwin I. Hatch Nuclear Plant Offsite Dose Calculation Manual (ODCM) Table 2-3. A sample from each tank planned for release is analyzed for principal gamma emitters, I-131, and dissolved and entrained noble gases, by gamma spectroscopy. Monthly and quarterly composites are prepared for analysis by extracting aliquots from each sample taken from the tanks released. Liquid radwaste sample analyses are performed as described in Section 1.3.1.

1.3.1 Total Radioactivity Determination for Liquid Radwaste

MEASUREMENT	FREQUENCY	METHOD
1. Gamma Isotopic	Each Batch	Gamma Spectroscopy with computerized data reduction.
2. Dissolved or entrained noble gas	Each Batch	Gamma Spectroscopy with computerized data reduction.
3. Tritium	Monthly Composite	Distillation and liquid scintillation counting
4. Gross Alpha	Monthly Composite	Gas flow proportional counting
5. Sr-89 & Sr-90	Quarterly Composite	Chemical separation and gas flow proportional or scintillation counting
6. Fe-55	Quarterly Composite	Chemical separation and liquid scintillation counting

Gamma isotopic measurements are performed in-house using germanium detectors with a resolution of 2.0 keV or lower. The detectors are shielded by four inches of lead. A liquid radwaste sample is typically counted for 2000 seconds and a peak search of the resulting gamma ray spectrum is performed. Energy and net count data for all significant peaks are determined and a quantitative reduction or MDC calculation is performed to ensure that the MDC's are met for the nuclides specified in the ODCM Chapter 10 (i.e., Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144). The quantitative calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio and MDC calculations, are made based on the counts at the location in the spectrum where the peak for that radionuclide would be located, if present. Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

Tritium, Gross Alpha, Sr-89, Sr-90 and Fe-55 are, in some cases, analyzed offsite.

The radionuclide concentrations determined by gamma spectroscopic analysis of samples taken from tanks planned for release, in addition to the most current sample analysis results available for tritium, gross alpha, Sr-89, Sr-90 and Fe-55, are used along with the corresponding ECL values to determine the ECL fraction for these tanks. This ECL fraction is then used, with the appropriate safety factors, tolerance factors, and the expected dilution stream flow to calculate maximum permissible release rate and a liquid effluent monitor setpoint. The monitor setpoint is calculated to assure that the limits of the ODCM are not exceeded.

A monitor reading in excess of the calculated setpoint will result in an automatic termination of the liquid radwaste discharge. Liquid effluent discharge is also automatically terminated if the dilution stream flow rate falls below the minimum assured dilution flow rate used in the setpoint calculations and established as a setpoint on the dilution stream flow monitor.

Radionuclide concentrations, safety factors, dilution stream flow rate, and the liquid effluent radiation monitor calibration factor, are entered into the computer and a pre-release printout is generated. If the release is not permissible, appropriate warnings will be displayed on the computer screen. If the release is permissible, it is approved by the Chemistry Foreman on duty. The pertinent information is transferred manually from the prerelease printout to a one-page release permit, which is forwarded to Radwaste Operations. When the release is completed, the release permit is returned from Radwaste Operations to Chemistry with the actual release data provided. These data are input into the computer and a post-release printout is generated. The post release printout contains the actual release rates, the actual release concentrations and quantities, the actual dilution flow, and the calculated doses to a Member of the Public.

1.4 Measurements and Approximations of Total Radioactivity for Groundwater Outfalls – Y22N003A/12B and Y22N008A

Samples are collected and analyzed in accordance with the Edwin I. Hatch Nuclear Plant Offsite Dose Calculation Manual (ODCM) Table 2-3. Weekly, monthly and quarterly composites are prepared for analysis by extracting aliquots from each outfall's automatic sampler, which collects a composite sample over a seven-day period. Sample analyses are performed as described in Section 1.4.1.

1.4.1 Total Radioactivity Determination for Groundwater Outfalls

MEASUREMENT	FREQUENCY	METHOD
1. Gamma Isotopic	Weekly Composite	Gamma Spectroscopy with computerized data reduction.
2. Tritium	Weekly Composite	Distillation and liquid scintillation counting
3. Gross Beta *	Quarterly Composite	Chemical separation and gas flow proportional or scintillation counting
4. Sr-89 & Sr-90 **	Quarterly Composite (as required)	Chemical separation and gas flow proportional or scintillation counting

* Gross Beta analysis is used for sample screening.
** If the Gross Beta analysis yields a detectable value above background, a Sr-89/90 analysis will be performed.

Gamma isotopic measurements are performed in-house using germanium detectors with a resolution of 2.0 keV or lower. The detectors are shielded by four inches of lead. A weekly composite sample is typically counted to Environmental MDC's and a peak search of the resulting gamma ray spectrum is performed. Energy and net count data for all significant peaks are determined and a quantitative reduction or MDC calculation is performed to ensure that the MDC's are met for the nuclides specified in the ODCM Chapter 10 (i.e., Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144). The quantitative calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio and MDC calculations, are made based on the counts at the location in the spectrum where the peak for that radionuclide would be located, if present. Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

Tritium, Gross Beta, Sr-89 and Sr-90 are, in some cases, analyzed offsite.

The radionuclide concentrations determined by gamma spectroscopic analysis of the weekly composite sample, in addition to the most current sample analysis results available for tritium, gross beta, Sr-89 and Sr-90, are used along with the corresponding ECL values to determine the ECL fraction for these composite samples. This ECL fraction is then used, with the appropriate safety factors, tolerance factors, and the expected dilution stream flow to calculate projected dose released.

Radionuclide concentrations, safety factors and dilution stream flow rate are entered into the computer and a pre-release printout is generated for each release period. When the release period is complete, the release permit is updated with the actual release data collected during the release period. These data are input into the computer and a post-release printout is generated. The post release printout contains the actual release rates, the actual release concentrations and quantities, the actual dilution flow, and the calculated doses to a Member of the Public. Cumulative dose results are tabulated along with the percent of the ODCM limit for each release period, for the current quarter and year.

1.5 Total Error Estimation

The maximum error associated with volume and flow measurements, based upon plant calibration practice, is estimated to be + or - 10%. The average error associated with counting is estimated to be less than + or - 15%. Therefore, the total error estimation is + or - 18%.

1.6 Liquid Effluent Release Data

Regulatory Guide 1.21, Tables 2A and 2B are found in this report as Table 1-1A, for Unit 1, Table 1-1B, for Unit 2 and Table 1-1C, for the site; and Table 1-2A, for Unit 1, 1-2B, for Unit 2, and Table 1-2C, for the site. Typical liquid minimum detectable concentrations (MDC's) used for analyses are found in Table 1-4.

The evaluation for the release of radioactive RHR Service Water for 2006 can be found in Appendix A of this report.

The values for the four categories of Tables 1-1A, and 1-1B, and 1-1C, are calculated and the Tables completed as follows:

1. Fission and activation products - The total release values (not including tritium, gases, and alpha) are comprised of the sum of the measured individual radionuclide activities. This sum is for each batch released to the river for the respective quarter.

2. Tritium - The measured tritium concentrations in the monthly composite samples are used to calculate the total release and average diluted concentration during each period.

3. Dissolved and entrained gases - Concentrations of dissolved and entrained gases in liquid effluents are measured by germanium spectroscopy using a one liter sample from each liquid radwaste batch. The measured concentrations are used to calculate the total release and the average diluted concentration during the period. Radioisotopes of iodine in any form are also determined during the isotopic analysis for each batch; therefore, a separate analysis for possible gaseous forms is not performed because it would not provide additional information.

4. Gross alpha radioactivity - The measured gross alpha concentrations in the monthly composite samples are used to calculate the total release of alpha radioactivity.

1.7 Radiological Impact Due to Liquid Releases

Doses to a Member of the Public due to radioactivity in liquid effluents were calculated in accordance with the Offsite Dose Calculation Manual. Results are presented in Table 1-3A for Unit 1, and 1-3B for Unit 2, for all four quarters.

1.8 Liquid Effluents - Batch Releases

Batch Release information for Units 1 and 2 is summarized in the following tables:

Unit 1 Liquid Batch Releases:	Table 1-5A
Unit 2 Liquid Batch Releases:	Table 1-5B

1.9 Liquid Effluents - Continuous Releases

Continuous Release information is summarized in the following tables:

Unit 1 Liquid Continuous Releases:	Table 1-2A
Unit 2 Liquid Continuous Releases:	Table 1-2B
Hatch Site Conitinuous Releases:	Table 1-2C

1.10 Liquid Effluents - Abnormal Releases

In 2006, Plant Hatch permitted two outfalls (one subsurface and one surface) which discharge directly into the river and showed constant levels of tritium in them. These release points are discussed in Section 1.4. In addition, Plant Hatch has seen sporadic indications of tritium in three other outfalls which discharge into the onsite swamp. The levels of tritium in these outfalls varied from non-detectable to a maximum value of 9180 pCi/L. The sporadic source of tritium in these drains is believed to be gaseous tritium which washed out from the permitted gaseous effluent release points during rain events. Samples were collected during two rain events in July and August 2006. The samples from the roof of the reactor buildings and turbine building showed detectable levels of tritium from 1.8E4 to 4.6E5 pCi/L. No detectable levels of tritium above background were seen in the 2006 river water samples.

TABLE 1-1A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	1.03E-03	3.58E-04	4.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.88E-09	1.48E-09	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	5.32E+00	3.84E+00	3.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.00E-05	1.59E-05	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	0.00E+00	6.18E-06	1.00E+02
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	0.00E+00	2.56E-11	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	2.27E-07	3.35E-07	1.20E+02
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	1.11E+06	1.07E+06	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	2.66E+08	2.41E+08	1.60E+02

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	1.39E-03	5.98E-04	4.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.69E-09	2.27E-09	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	4.23E+00	4.79E+00	3.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.22E-06	1.82E-05	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.78E-06	0.00E+00	1.00E+02
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.46E-12	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	4.83E-13	3.52E-07	1.20E+02
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	1.81E+07	1.44E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	5.15E+08	2.63E+08	1.60E+02

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	1.74E-04	2.42E-04	4.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.56E-09	8.48E-11	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	3.36E+00	5.03E+00	3.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.00E-05	1.77E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	0.00E+00	7.03E-07	1.00E+02
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	0.00E+00	2.47E-13	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	1.20E+02
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	6.31E+05	7.50E+06	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	1.12E+08	2.85E+09	1.60E+02

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	6.53E-05	1.62E-04	4.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.21E-11	4.77E-11	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	8.04E+00	3.96E+00	3.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.49E-06	1.16E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	1.00E+02
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	1.20E+02
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	6.48E+06	3.05E+06	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	5.41E+09	3.40E+09	1.60E+02

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1C
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	1.21E-03	6.00E-04	4.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.19E-09	1.94E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	8.68E+00	8.87E+00	3.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.30E-05	2.87E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	0.00E+00	6.88E-06	1.00E+02
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	0.00E+00	2.23E-12	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	2.27E-07	3.35E-07	1.20E+02
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	1.75E+06	8.57E+06	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	3.78E+08	3.09E+09	1.60E+02

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1C
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	1.45E-03	7.60E-04	4.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.45E-10	2.08E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.23E+01	8.75E+00	3.70E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.07E-06	2.39E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.78E-06	0.00E+00	1.00E+02
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.00E-13	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	4.83E-13	3.52E-07	1.20E+02
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	2.46E+07	1.75E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	5.92E+09	3.66E+09	1.60E+02

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-2A*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	0.00E+00	5.32E+00	3.84E+00
FISSION & ACTIVATION PRODUCTS					
AS-76	CURIES	0.00E+00	0.00E+00	6.54E-06	0.00E+00
CE-141	CURIES	0.00E+00	0.00E+00	0.00E+00	2.23E-06
CO-60	CURIES	0.00E+00	0.00E+00	4.38E-04	1.31E-04
CR-51	CURIES	0.00E+00	0.00E+00	0.00E+00	1.11E-05
CS-134	CURIES	0.00E+00	0.00E+00	7.35E-06	0.00E+00
CS-137	CURIES	0.00E+00	0.00E+00	2.34E-04	3.16E-05
FE-55	CURIES	0.00E+00	0.00E+00	1.79E-04	1.20E-04
MN-54	CURIES	0.00E+00	0.00E+00	5.73E-05	4.34E-05
NA-24	CURIES	0.00E+00	0.00E+00	1.41E-05	5.94E-06
SR-89	CURIES	0.00E+00	0.00E+00	1.08E-12	1.14E-12
ZN-65	CURIES	0.00E+00	0.00E+00	9.40E-05	1.31E-05
TOTALS	CURIES	0.00E+00	0.00E+00	1.03E-03	3.58E-04
DISSOLVED AND ENTRAINED GASES					
XE-133	CURIES	0.00E+00	0.00E+00	0.00E+00	4.55E-06
XE-135	CURIES	0.00E+00	0.00E+00	0.00E+00	1.63E-06
TOTALS	CURIES	0.00E+00	0.00E+00	0.00E+00	6.18E-06
G-ALPHA	CURIES	0.00E+00	0.00E+00	2.27E-07	3.35E-07

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

TABLE 1-2A*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	1.74E-02	1.63E-02	4.22E+00	4.78E+00
FISSION & ACTIVATION PRODUCTS					
CO-60	CURIES	0.00E+00	0.00E+00	5.26E-04	2.22E-04
CS-137	CURIES	0.00E+00	0.00E+00	2.75E-04	2.07E-04
FE-55	CURIES	0.00E+00	0.00E+00	2.27E-04	1.15E-04
MN-54	CURIES	0.00E+00	0.00E+00	9.87E-05	2.44E-05
NA-24	CURIES	0.00E+00	0.00E+00	2.32E-05	1.77E-05
SR-89	CURIES	0.00E+00	0.00E+00	2.02E-04	7.66E-06
ZN-65	CURIES	0.00E+00	0.00E+00	3.36E-05	3.49E-06
TOTALS	CURIES	0.00E+00	0.00E+00	1.39E-03	5.98E-04
DISSOLVED AND ENTRAINED GASES					
XE-133	CURIES	0.00E+00	0.00E+00	9.96E-07	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	7.84E-07	0.00E+00
TOTALS	CURIES	0.00E+00	0.00E+00	1.78E-06	0.00E+00
G-ALPHA	CURIES	0.00E+00	0.00E+00	4.83E-13	3.52E-07

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

TABLE 1-2B*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	6.02E-02	3.36E+00	4.97E+00
FISSION & ACTIVATION PRODUCTS					
AS-76	CURIES	0.00E+00	0.00E+00	1.49E-06	0.00E+00
CO-60	CURIES	0.00E+00	0.00E+00	3.04E-05	2.77E-05
CS-134	CURIES	0.00E+00	0.00E+00	1.08E-06	0.00E+00
CS-137	CURIES	0.00E+00	0.00E+00	3.23E-05	6.36E-06
FE-55	CURIES	0.00E+00	0.00E+00	8.45E-05	1.65E-04
I-133	CURIES	0.00E+00	0.00E+00	0.00E+00	1.86E-06
MN-54	CURIES	0.00E+00	0.00E+00	4.29E-06	5.37E-06
NA-24	CURIES	0.00E+00	0.00E+00	4.04E-06	1.37E-06
ZN-65	CURIES	0.00E+00	0.00E+00	1.64E-05	3.38E-05
TOTALS	CURIES	0.00E+00	0.00E+00	1.74E-04	2.42E-04
DISSOLVED AND ENTRAINED GASES					
XE-135	CURIES	0.00E+00	0.00E+00	0.00E+00	7.03E-07
TOTALS	CURIES	0.00E+00	0.00E+00	0.00E+00	7.03E-07

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

TABLE 1-2B*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	4.58E-02	4.40E-02	8.00E+00	3.91E+00
FISSION & ACTIVATION PRODUCTS					
CO-60	CURIES	0.00E+00	0.00E+00	4.24E-05	3.51E-06
CS-137	CURIES	0.00E+00	0.00E+00	5.97E-06	7.11E-06
FE-55	CURIES	0.00E+00	0.00E+00	2.05E-11	2.39E-05
I-131	CURIES	0.00E+00	0.00E+00	0.00E+00	4.03E-07
MN-54	CURIES	0.00E+00	0.00E+00	1.95E-06	0.00E+00
NA-24	CURIES	0.00E+00	0.00E+00	2.60E-06	1.34E-05
SR-89	CURIES	0.00E+00	1.13E-04	0.00E+00	0.00E+00
ZN-65	CURIES	0.00E+00	0.00E+00	1.25E-05	9.57E-07
TOTALS	CURIES	0.00E+00	1.13E-04	6.53E-05	4.93E-05
DISSOLVED AND ENTRAINED GASES					
	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

TABLE 1-2C*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	6.02E-02	8.68E+00	8.81E+00
FISSION & ACTIVATION PRODUCTS					
AS-76	CURIES	0.00E+00	0.00E+00	8.03E-06	0.00E+00
CE-141	CURIES	0.00E+00	0.00E+00	0.00E+00	2.23E-06
CO-60	CURIES	0.00E+00	0.00E+00	4.69E-04	1.59E-04
CR-51	CURIES	0.00E+00	0.00E+00	0.00E+00	1.11E-05
CS-134	CURIES	0.00E+00	0.00E+00	8.43E-06	0.00E+00
CS-137	CURIES	0.00E+00	0.00E+00	2.67E-04	3.80E-05
FE-55	CURIES	0.00E+00	0.00E+00	2.64E-04	2.85E-04
I-133	CURIES	0.00E+00	0.00E+00	0.00E+00	1.86E-06
MN-54	CURIES	0.00E+00	0.00E+00	6.16E-05	4.88E-05
NA-24	CURIES	0.00E+00	0.00E+00	1.82E-05	7.31E-06
SR-89	CURIES	0.00E+00	0.00E+00	1.08E-12	1.14E-12
ZN-65	CURIES	0.00E+00	0.00E+00	1.10E-04	4.68E-05
TOTALS	CURIES	0.00E+00	0.00E+00	1.21E-03	6.00E-04
DISSOLVED AND ENTRAINED GASES					
XE-133	CURIES	0.00E+00	0.00E+00	0.00E+00	4.55E-06
XE-135	CURIES	0.00E+00	0.00E+00	0.00E+00	2.33E-06
TOTALS	CURIES	0.00E+00	0.00E+00	0.00E+00	6.88E-06
G-ALPHA	CURIES	0.00E+00	0.00E+00	2.27E-07	3.35E-07

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

TABLE 1-2C*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	6.32E-02	6.03E-02	1.22E+01	8.69E+00
FISSION & ACTIVATION PRODUCTS					
CO-60	CURIES	0.00E+00	0.00E+00	5.68E-04	2.26E-04
CS-137	CURIES	0.00E+00	0.00E+00	2.81E-04	2.14E-04
FE-55	CURIES	0.00E+00	0.00E+00	2.27E-04	1.39E-04
I-131	CURIES	0.00E+00	0.00E+00	0.00E+00	4.03E-07
MN-54	CURIES	0.00E+00	0.00E+00	1.01E-04	2.44E-05
NA-24	CURIES	0.00E+00	0.00E+00	2.58E-05	3.10E-05
SR-89	CURIES	0.00E+00	1.13E-04	2.02E-04	7.66E-06
ZN-65	CURIES	0.00E+00	0.00E+00	4.61E-05	4.44E-06
TOTALS	CURIES	0.00E+00	1.13E-04	1.45E-03	6.47E-04
DISSOLVED AND ENTRAINED GASES					
XE-133	CURIES	0.00E+00	0.00E+00	9.96E-07	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	7.84E-07	0.00E+00
TOTALS	CURIES	0.00E+00	0.00E+00	1.78E-06	0.00E+00
G-ALPHA	CURIES	0.00E+00	0.00E+00	4.83E-13	3.52E-07

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

TABLE 1-3A
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 1
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Units	Quarter 1	% of Tech Spec Limit	Quarter 2	% of Tech Spec Limit
Bone	5.0	mrem	8.19E-04	1.64E-02	1.08E-04	2.15E-03
Liver	5.0	mrem	1.21E-03	2.41E-02	1.81E-04	3.62E-03
TBody	1.5	mrem	8.20E-04	5.47E-02	1.32E-04	8.77E-03
Thyroid	5.0	mrem	3.55E-05	7.09E-04	2.65E-05	5.31E-04
Kidney	5.0	mrem	4.38E-04	8.76E-03	7.91E-05	1.58E-03
Lung	5.0	mrem	1.62E-04	3.25E-03	4.30E-05	8.60E-04
GILLI	5.0	mrem	2.89E-04	5.78E-03	1.02E-04	2.04E-03

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	10.0	mrem	9.27E-04	9.27E-03
Liver	10.0	mrem	1.39E-03	1.39E-02
TBody	3.0	mrem	9.52E-04	3.17E-02
Thyroid	10.0	mrem	6.20E-05	6.20E-04
Kidney	10.0	mrem	5.17E-04	5.17E-03
Lung	10.0	mrem	2.05E-04	2.05E-03
GILLI	10.0	mrem	3.91E-04	3.91E-03

TABLE 1-3A
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 1
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Units	Quarter 3	% of Tech Spec Limit	Quarter 4	% of Tech Spec Limit
Bone	5.0	mrem	9.21E-04	1.84E-02	7.61E-04	1.52E-02
Liver	5.0	mrem	1.31E-03	2.62E-02	1.15E-03	2.30E-02
TBody	1.5	mrem	8.92E-04	5.95E-02	7.98E-04	5.32E-02
Thyroid	5.0	mrem	5.02E-05	1.00E-03	1.03E-04	2.06E-03
Kidney	5.0	mrem	4.76E-04	9.52E-03	4.57E-04	9.13E-03
Lung	5.0	mrem	1.89E-04	3.78E-03	2.20E-04	4.41E-03
GILLI	5.0	mrem	3.46E-04	6.93E-03	2.44E-04	4.87E-03

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	10.0	mrem	2.61E-03	2.61E-02
Liver	10.0	mrem	3.84E-03	3.84E-02
TBody	3.0	mrem	2.64E-03	8.80E-02
Thyroid	10.0	mrem	2.15E-04	2.15E-03
Kidney	10.0	mrem	1.45E-03	1.45E-02
Lung	10.0	mrem	6.15E-04	6.15E-03
GILLI	10.0	mrem	9.81E-04	9.81E-03

TABLE 1-3B
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 2
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Units	Quarter 1	% of Tech Spec Limit	Quarter 2	% of Tech Spec Limit
Bone	5.0	mrem	1.23E-04	2.45E-03	2.62E-05	5.24E-04
Liver	5.0	mrem	2.01E-04	4.02E-03	8.19E-05	1.64E-03
TBody	1.5	mrem	1.42E-04	9.45E-03	6.56E-05	4.37E-03
Thyroid	5.0	mrem	2.63E-05	5.26E-04	3.95E-05	7.90E-04
Kidney	5.0	mrem	8.71E-05	1.74E-03	5.69E-05	1.14E-03
Lung	5.0	mrem	4.52E-05	9.05E-04	4.20E-05	8.40E-04
GILLI	5.0	mrem	4.97E-05	9.94E-04	6.20E-05	1.24E-03

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	10.0	mrem	1.49E-04	1.49E-03
Liver	10.0	mrem	2.83E-04	2.83E-03
TBody	3.0	mrem	2.07E-04	6.91E-03
Thyroid	10.0	mrem	6.58E-05	6.58E-04
Kidney	10.0	mrem	1.44E-04	1.44E-03
Lung	10.0	mrem	8.72E-05	8.72E-04
GILLI	10.0	mrem	1.12E-04	1.12E-03

TABLE 1-3B
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 2
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Units	Quarter 3	% of Tech Spec Limit	Quarter 4	% of Tech Spec Limit
Bone	5.0	mrem	2.56E-05	5.12E-04	5.18E-05	1.04E-03
Liver	5.0	mrem	1.01E-04	2.02E-03	7.03E-05	1.41E-03
TBody	1.5	mrem	8.87E-05	5.91E-03	5.79E-05	3.86E-03
Thyroid	5.0	mrem	6.21E-05	1.24E-03	3.48E-05	6.95E-04
Kidney	5.0	mrem	7.64E-05	1.53E-03	4.51E-05	9.02E-04
Lung	5.0	mrem	6.58E-05	1.32E-03	3.63E-05	7.26E-04
GILLI	5.0	mrem	9.04E-05	1.81E-03	3.89E-05	7.78E-04

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	10.0	mrem	2.26E-04	2.26E-03
Liver	10.0	mrem	4.54E-04	4.54E-03
TBody	3.0	mrem	3.54E-04	1.18E-02
Thyroid	10.0	mrem	1.63E-04	1.63E-03
Kidney	10.0	mrem	2.65E-04	2.65E-03
Lung	10.0	mrem	1.89E-04	1.89E-03
GILLI	10.0	mrem	2.41E-04	2.41E-03

Table 1-4
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
MINIMUM DETECTABLE CONCENTRATIONS - LIQUID SAMPLE ANALYSES
STARTING: 1-Jan-2006 ENDING: 31-Dec-2006

The values in this table represent a priori Minimum Detectable Concentrations (MDC) that are typically achieved in laboratory analyses of liquid radwaste samples.

RADIONUCLIDE	***MDC***	***UNITS***
Mn-54	1.97E-08	uCi/ml
Fe-59	3.94E-08	uCi/ml
Co-58	1.59E-08	uCi/ml
Co-60	1.72E-08	uCi/ml
Zn-65	2.92E-08	uCi/ml
Mo-99	1.20E-07	uCi/ml
Cs-134	1.75E-08	uCi/ml
Cs-137	1.62E-08	uCi/ml
Ce-141	1.92E-08	uCi/ml
Ce-144	8.83E-08	uCi/ml
I-131	1.43E-08	uCi/ml
Xe-135	1.03E-08	uCi/ml
Fe-55	2.34E-08	uCi/ml
Sr-89	1.44E-08	uCi/ml
Sr-90	8.50E-09	uCi/ml
H-3	6.00E-07	uCi/ml

Table 1-5A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 1
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF RELEASES	:	67	
TOTAL TIME FOR ALL RELEASES	:	8848.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	184.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	132.06	MINUTES
MINIMUM TIME FOR A RELEASE	:	82.00	MINUTES
PRE-DILUTED VOLUME DISCHARGED	:	2.183E+06	LITERS
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	15490	CFS

Table 1-5A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 1
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF RELEASES	:	99	
TOTAL TIME FOR ALL RELEASES	:	13146.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	180.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	132.79	MINUTES
MINIMUM TIME FOR A RELEASE	:	86.00	MINUTES
PRE-DILUTED VOLUME DISCHARGED	:	3.141E+06	LITERS
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	15490	CFS

Table 1-5B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 2
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF RELEASES	:	50	
TOTAL TIME FOR ALL RELEASES	:	5300.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	147.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	106.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	78.00	MINUTES
PRE-DILUTED VOLUME DISCHARGED	:	1.441E+06	LITERS
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	15490	CFS

Table 1-5B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 2
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF RELEASES	:	66	
TOTAL TIME FOR ALL RELEASES	:	7152.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	125.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	108.36	MINUTES
MINIMUM TIME FOR A RELEASE	:	80.00	MINUTES
PRE-DILUTED VOLUME DISCHARGED	:	1.971E+06	LITERS
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	15490	CFS

Table 1-6A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 1
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal liquid releases for this reporting period.

Table 1-6A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 1
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal liquid releases for this reporting period.

Table 1-6B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 2
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal liquid releases for this reporting period.

Table 1-6B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
LIQUID EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 2
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal liquid releases for this reporting period.

2.0 *Gaseous Effluents*

2.1 Regulatory Requirements

The ODCM Specifications presented in this section are for Unit 1 and Unit 2.

2.1.1 Dose Rate Limits

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to the following:

a. For noble gases: Less than or equal to 500 mrems/yr. to the whole body and less than or equal to 3000 mrems/yr. to the skin and,

b. For Iodine-131, Iodine-133, tritium and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrems/yr. to any organ.

2.1.2 Air Doses Due To Noble Gases in Gaseous Effluents

The air dose due to noble gases released in gaseous effluents, from each unit, to areas at and beyond the SITE BOUNDARY, shall be limited to the following:

a. During any calendar quarter: Less than or equal to 5 mrads for gamma radiation and less than or equal to 10 mrads for beta radiation, and

b. During any calendar year: Less than or equal to 10 mrads for gamma radiation and less than or equal to 20 mrads for beta radiation.

2.1.3 Doses To A Member of the Public

The dose to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluents released from each unit, to areas at and beyond the SITE BOUNDARY, shall be limited to the following.

a. During any calendar quarter: Less than or equal to 7.5 mrems to any organ.

b. During any calendar year: Less than or equal to 15 mrems to any organ.

2.2 *Measurements and Approximations of Total Radioactivity*

Waste gas release at Plant Hatch is confined to four paths: main stack (also called the offgas vent), Unit 1 reactor building vent; Unit 2 reactor building vent, and the recombiner building vent. Each of these four paths is continuously monitored for gaseous radioactivity.

2.2.1 *Sample Collection and Analysis*

Each of the four gaseous effluent paths is equipped with an integrating-type sample collection device for collecting particulates and iodines. Unless required more frequently under certain circumstances, samples are collected as follows:

1. Noble gas samples are collected by grab sampling monthly.

2. Tritium samples are collected by grab sampling monthly.

3. Radioiodine samples are collected by pulling the sample stream through a charcoal cartridge over a 7-day period.

4. Particulates are collected by pulling the sample stream through a particulate filter over a 7-day period.

5. The 7-day particulate filters above are analyzed for gross alpha activity.

6. Quarterly composite samples are prepared from the particulate filters collected over the previous quarter and the samples are analyzed for Sr-89 and Sr-90.

Sample analyses results and release flow rates from the four release points form the basis for calculating released quantities of radionuclide-specific radioactivity, the dose rates associated with gaseous releases, and the cumulative doses for the current quarter and year. This task is normally performed with computer assistance.

The noble gas grab sample analysis results are used along with maximum expected release flow rates from each of the four vents to calculate monitor setpoints for the gaseous effluent monitors serving the four release points. Calculation of monitor setpoints is described in the ODCM. Typically achieved minimum detectable concentrations for gaseous effluents sample and analyses are reported in Table 2-6.

For each release period, released radioactivity, dose rates, and cumulative doses are calculated. Cumulative dose results are tabulated along with the percent of the ODCM limit for each release, for the current quarter and year.

2.2.2 Total Quantities of Radioactivity, Dose Rates, and Cumulative Doses

The methods for determining release quantities of radioactivity, dose rates, and cumulative doses follow:

2.2.2.1 Fission and Activation Gases

The released radioactivity is determined using sample analyses results collected as described above and the average release flow rates over the period represented by the collected sample.

Dose rates due to noble gases, radioiodines, tritium, and particulates are calculated (with computer assistance). The calculated dose rates are compared to the dose rate limits specified in ODCM 3.1.2 for noble gases, radioiodine, tritium, and particulates. Dose rate calculation methodology is presented in the ODCM.

Beta and gamma air doses due to noble gases are calculated for the location in the unrestricted area with the potential for the highest exposure due to gaseous releases. Air doses are calculated for each release period and cumulative totals are kept for each unit for the calendar quarter and year. Cumulative air doses are compared to the dose limits specified in ODCM 3.1.3. The current percent of the ODCM limits are shown on the printout for each release period. Air dose calculation methodology is presented in the ODCM.

2.2.2.2 Radioiodine, Tritium and Particulate Releases

Released quantities of radioiodines are determined using the weekly samples and release flow rates for the four release points. Radioiodine concentrations are determined by gamma spectroscopy.

Release quantities of particulates are determined using the weekly (filter) samples and release flow rates for the four release points. Gamma spectroscopy is used to quantify concentrations of principal gamma emitters.

After each quarter, the particulate filters from each vent are combined, fused, and a strontium separation is performed. Since sample flows and vent flows are almost constant over each quarterly period the filters from each vent can be dissolved together. Decay corrections are performed back to the middle of the quarterly collection period. If Sr-89 or Sr-90 is not detected, MDC's are calculated. Strontium concentrations are input into the composite file of the computer and used for release dose rate and dose calculations for a Member of the Public.

Tritium samples are obtained monthly from each vent by passing the sample stream through a cold trap. The grams of water vapor/cubic foot is measured upstream of the cold trap in order to alleviate the difficulties in determining water vapor collection efficiencies. The tritium samples are analyzed by an independent laboratory and the results are furnished in uCi/ml of water. The tritium concentration in water is converted to the tritium concentration in air and this value is input into the composite file of the computer and used in release, dose rate, and individual dose calculations.

Dose rates due to radioiodine, tritium and particulates are calculated for a hypothetical child exposed to the inhalation pathway at the location in the unrestricted area where the potential dose rate is expected to be the highest. Dose rates are calculated, for each release point for each release period, and the dose rates from each release point are compared to the dose rate limits as described in ODCM 3.1.2 Doses due to radioiodine, tritium and particulates are calculated for the controlling receptor, which is described in the ODCM. Doses to a Member of the Public are calculated for each release period, and cumulative totals are kept for each unit, for the current calendar quarter and year. Cumulative doses are compared to the dose limits specified in ODCM 3.1.4. The current percent of ODCM limits are shown on the printout for each release period.

2.2.2.3 Gross Alpha Release

The gross alpha release is computed each month by counting the particulate filters, for each week for gross alpha activity in a proportional counter. The four or five weeks' numbers are then recorded on a data sheet and the activity is summed at the end of the month. The summed activity is then divided by the total monthly volume to determine the concentration. This concentration is input into the composite file of the computer and used for release calculations.

2.2.3 Total Error Estimation

The total or maximum error associated with the effluent measurement will include the cumulative errors resulting from the total process of sampling and measurement. Due to the difficulty with assigning error terms for each parameter affecting the final measurement, detailed statistical evaluation of error is not suggested. The objective is to obtain an overall estimate of the error associated with measurements of radioactive materials released in liquid and gaseous effluents and solid waste.

Estimated errors are associated with counting equipment calibration, counting statistics, vent-flow rates, vent sample flow rates, non steady release rates, chemical yield factors and sample losses for such items as charcoal cartridges.

Fission and activation total release was calculated from sample analysis results and release point flow rates.

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Non-steady release rates	20%
TOTAL ERROR	65%

I-131 releases were calculated from each weekly sample.

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	10%
Non-steady release rates	10%
Losses from charcoal cartridges	10%
TOTAL ERROR	64%

Particulates with half lives greater than 8 days releases were calculated from sample analysis results and release point flow rates.

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	10%
Non-steady release rates	10%
TOTAL ERROR	63%

Total tritium releases were calculated from sample analysis results and release point flow rates.

Water vapor in sample stream determination	20%
Vent flow rates	10%
Counting calibration and statistics	10%
Non-steady release rates	50%
TOTAL ERROR	56%

Gross Alpha radioactivity was calculated from sample analysis results and release point flow rates.

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	10%
Non-steady release rates	10%
TOTAL ERROR	63%

2.3 Gaseous Effluent Release Data

Regulatory Guide 1.21 Tables 1A, 1B, and 1C are found in this report as Tables 2-1A, 2-1B, 2-1C, 2-2A, ,2-2B, 2-2C, 2-3A, 2-3B, 2-3C. Data is presented on a quarterly basis as required by Regulatory Guide 1.21 for all quarters.

To complete table 2-1A, 2-1B, and 2-1C, total release for each of the four categories (fission and activation gases, iodines, particulates, and tritium) was divided by the number of seconds in the quarter to obtain a release rate in uCi/second for each category for each quarter. However, the percent of the ODCM limits are not applicable because we have no curie limits for gaseous releases. Applicable limits are expressed in terms of dose. Noble gases are limited as specified in ODCM 3.1.2. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in ODCM 3.1.2.

Dose rates due to noble gas releases, and due to radioiodine, tritium, and particulates were calculated as part of the pre-release and post-release permits on individual permits. No limits were exceeded for this reporting period.

Gross alpha radioactivity is reported in Table 2-1A, 2-1B, and 2-1C, as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are specified in ODCM 3.1.3. Cumulative air doses are presented in Table 2-4A and 2-4B, along with percent of ODCM limits.

Limits for cumulative doses to a Member of the Public due to radioiodine, tritium and particulates, are specified in ODCM 3.1.4. Cumulative doses to a Member of the Public doses are presented in Table 2-5A, and 2-5B, along with percent of ODCM limits.

2.4 *Radiological Impact Due to Gaseous Releases*

Dose rates due to noble gas release were calculated for the site in accordance with ODCM 3.1.2. Dose rates due to radioiodine, tritium, and particulates in gaseous releases were calculated in accordance with ODCM 3.1.2.

These dose rates were calculated as part of the pre-release and post release on individual release permits. No limits were exceeded for this reporting period.

Cumulative air doses due to noble gas releases were calculated for each unit in accordance with ODCM 3.1.3. These results are presented in Tables 2-4A and 2-4B.

Cumulative doses to a Member of the Public due to radioiodine, tritium and particulates in gaseous releases were calculated for each unit in accordance with ODCM 3.1.4. These results are presented in Tables 2-5A and 2-5B.

Dose rates and doses were calculated using the methodology presented in the ODCM.

2.5 *Gaseous Effluents - Batch Releases*

There are no gaseous batch releases from Plant Hatch.

2.6 *Gaseous Effluents - Abnormal Releases*

There were no unplanned or uncontrolled gaseous releases during this reporting period.

TABLE 2-1A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	4.69E-02	0.00E+00	6.50E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.03E-03	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.70E-05	3.06E-05	6.40E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.18E-06	3.89E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	1.17E-06	1.42E-05	6.30E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.50E-07	1.81E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	4.20E+00	3.59E+00	5.60E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.40E-01	4.56E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	6.50E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	2.21E-05	1.18E-05	6.40E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.79E-06	1.48E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	3.86E-06	3.35E-06	6.30E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	4.86E-07	4.22E-07	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	1.72E+01	1.00E+01	5.60E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.17E+00	1.26E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	6.50E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	2.62E-05	3.03E-05	6.40E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.36E-06	3.85E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	2.90E-06	2.06E-05	6.30E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.73E-07	2.62E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	9.31E+00	9.93E+00	5.60E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.20E+00	1.26E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	6.50E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	2.20E-05	1.17E-05	6.40E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.76E-06	1.47E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	4.72E-06	6.98E-06	6.30E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.94E-07	8.79E-07	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	8.61E+00	2.10E+01	5.60E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.08E+00	2.64E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1C
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	4.69E-02	0.00E+00	6.50E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.03E-03	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	4.31E-05	6.08E-05	6.40E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.55E-06	7.74E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	4.06E-06	3.48E-05	6.30E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.23E-07	4.43E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	1.35E+01	1.35E+01	5.60E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.74E+00	1.72E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1C
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	6.50E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	4.41E-05	2.35E-05	6.40E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.55E-06	2.96E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	8.58E-06	1.03E-05	6.30E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.08E-06	1.30E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	2.58E+01	3.10E+01	5.60E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.25E+00	3.90E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-2A*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Elevated Level Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
IODINES					
I-133	CURIES	6.61E-05	2.32E-04	0.00E+00	0.00E+00
I-131	CURIES	9.37E-06	3.03E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	7.55E-05	2.62E-04	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	3.46E-07	3.89E-06	0.00E+00	0.00E+00
SR-90	CURIES	1.71E-09	3.55E-15	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.48E-07	3.89E-06	0.00E+00	0.00E+00
H-3	CURIES	4.06E-01	8.95E-01	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-2A*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Elevated Level Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
IODINES					
I-133	CURIES	1.58E-04	8.15E-05	0.00E+00	0.00E+00
I-131	CURIES	2.20E-05	1.17E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.80E-04	9.32E-05	0.00E+00	0.00E+00
PARTICULATES					
BA-140	CURIES	3.62E-07	0.00E+00	0.00E+00	0.00E+00
SR-89	CURIES	2.48E-06	2.83E-06	0.00E+00	0.00E+00
SR-90	CURIES	2.46E-08	2.45E-08	0.00E+00	0.00E+00
CS-137	CURIES	0.00E+00	1.85E-07	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	2.87E-06	3.04E-06	0.00E+00	0.00E+00
H-3	CURIES	1.53E+00	2.50E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-2B*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Elevated Level Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
IODINES					
I-133	CURIES	7.78E-05	2.32E-04	0.00E+00	0.00E+00
I-131	CURIES	1.61E-05	3.03E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	9.38E-05	2.62E-04	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	9.41E-07	3.89E-06	0.00E+00	0.00E+00
SR-90	CURIES	1.71E-09	3.55E-15	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	9.43E-07	3.89E-06	0.00E+00	0.00E+00
H-3	CURIES	6.67E-01	8.95E-01	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-2B*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Elevated Level Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
IODINES					
I-133	CURIES	1.58E-04	8.15E-05	0.00E+00	0.00E+00
I-131	CURIES	2.20E-05	1.17E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.80E-04	9.32E-05	0.00E+00	0.00E+00
PARTICULATES					
BA-140	CURIES	3.62E-07	0.00E+00	0.00E+00	0.00E+00
SR-89	CURIES	2.48E-06	2.83E-06	0.00E+00	0.00E+00
SR-90	CURIES	2.46E-08	2.45E-08	0.00E+00	0.00E+00
CS-137	CURIES	0.00E+00	1.85E-07	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	2.87E-06	3.04E-06	0.00E+00	0.00E+00
H-3	CURIES	1.53E+00	2.50E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-2C*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Elevated Level Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
IODINES					
I-133	CURIES	1.44E-04	4.64E-04	0.00E+00	0.00E+00
I-131	CURIES	2.54E-05	6.06E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.69E-04	5.24E-04	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	1.29E-06	7.78E-06	0.00E+00	0.00E+00
SR-90	CURIES	3.41E-09	7.11E-15	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.29E-06	7.78E-06	0.00E+00	0.00E+00
H-3	CURIES	1.07E+00	1.79E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-2C*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Elevated Level Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
IODINES					
I-133	CURIES	3.15E-04	1.63E-04	0.00E+00	0.00E+00
I-131	CURIES	4.39E-05	2.34E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.59E-04	1.86E-04	0.00E+00	0.00E+00
PARTICULATES					
BA-140	CURIES	7.25E-07	0.00E+00	0.00E+00	0.00E+00
SR-89	CURIES	4.96E-06	5.65E-06	0.00E+00	0.00E+00
SR-90	CURIES	4.92E-08	4.91E-08	0.00E+00	0.00E+00
CS-137	CURIES	0.00E+00	3.70E-07	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	5.74E-06	6.07E-06	0.00E+00	0.00E+00
H-3	CURIES	3.05E+00	5.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-3A*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
XE-133	CURIES	4.69E-02	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.69E-02	0.00E+00	0.00E+00	0.00E+00
IODINES					
I-133	CURIES	5.53E-08	2.80E-06	0.00E+00	0.00E+00
I-131	CURIES	7.61E-06	2.83E-07	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	7.66E-06	3.08E-06	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	8.20E-07	1.03E-05	0.00E+00	0.00E+00
SR-90	CURIES	9.71E-12	2.86E-17	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	8.20E-07	1.03E-05	0.00E+00	0.00E+00
H-3	CURIES	3.79E+00	2.69E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-3A*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
IODINES					
I-133	CURIES	1.80E-07	0.00E+00	0.00E+00	0.00E+00
I-131	CURIES	1.81E-07	8.48E-08	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.61E-07	8.48E-08	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	9.92E-07	3.16E-07	0.00E+00	0.00E+00
SR-90	CURIES	1.56E-17	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	9.92E-07	3.16E-07	0.00E+00	0.00E+00
H-3	CURIES	1.57E+01	7.50E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-3B*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
IODINES					
I-131	CURIES	1.01E-05	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.01E-05	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	1.95E-06	1.67E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.95E-06	1.67E-05	0.00E+00	0.00E+00
H-3	CURIES	8.64E+00	9.04E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-3B*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
PARTICULATES					
SR-89	CURIES	1.83E-06	3.95E-06	0.00E+00	0.00E+00
SR-90	CURIES	1.69E-08	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.85E-06	3.95E-06	0.00E+00	0.00E+00
H-3	CURIES	7.08E+00	1.85E+01	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-3C*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
XE-133	CURIES	4.69E-02	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.69E-02	0.00E+00	0.00E+00	0.00E+00
IODINES					
I-133	CURIES	5.53E-08	2.80E-06	0.00E+00	0.00E+00
I-131	CURIES	1.77E-05	2.83E-07	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.78E-05	3.08E-06	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	2.77E-06	2.70E-05	0.00E+00	0.00E+00
SR-90	CURIES	9.71E-12	2.86E-17	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	2.77E-06	2.70E-05	0.00E+00	0.00E+00
H-3	CURIES	1.24E+01	1.17E+01	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-3C*
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE**	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
IODINES					
I-133	CURIES	1.80E-07	0.00E+00	0.00E+00	0.00E+00
I-131	CURIES	1.81E-07	8.48E-08	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.61E-07	8.48E-08	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	2.83E-06	4.26E-06	0.00E+00	0.00E+00
SR-90	CURIES	1.69E-08	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	2.84E-06	4.26E-06	0.00E+00	0.00E+00
H-3	CURIES	2.28E+01	2.60E+01	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

** There are no batch mode radioactive gaseous release pathways at Plant Hatch.

TABLE 2-4A
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO GASEOUS RELEASES
Unit: 1
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Type of Radi-ation	Tech Spec Limit	Units	Quarter 1	% of Tech Spec Limit	Quarter 2	% of Tech Spec Limit
Gamma	5.0	mrad	4.39E-06	8.79E-05	0.00E+00	0.00E+00
Beta	10.0	mrad	1.31E-05	1.31E-04	0.00E+00	0.00E+00

Cumulative Doses per Year

Type of Radi-ation	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Gamma	10.0	mrad	4.39E-06	4.39E-05
Beta	20.0	mrad	1.31E-05	6.54E-05

TABLE 2-4A
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO GASEOUS RELEASES
Unit: 1
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Type of Radi-ation	Tech Spec Limit	Units	Quarter 3	% of Tech Spec Limit	Quarter 4	% of Tech Spec Limit
Gamma	5.0	mrad	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta	10.0	mrad	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Cumulative Doses per Year

Type of Radi-ation	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Gamma	10.0	mrad	4.39E-06	4.39E-05
Beta	20.0	mrad	1.31E-05	6.54E-05

TABLE 2-4B
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO GASEOUS RELEASES
Unit: 2
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Type of Radi-ation	Tech Spec Limit	Units	Quarter 1	% of Tech Spec Limit	Quarter 2	% of Tech Spec Limit
Gamma	5.0	mrad	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta	10.0	mrad	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Cumulative Doses per Year

Type of Radi-ation	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Gamma	10.0	mrad	0.00E+00	0.00E+00
Beta	20.0	mrad	0.00E+00	0.00E+00

TABLE 2-4B
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO GASEOUS RELEASES
Unit: 2
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Type of Radi-ation	Tech Spec Limit	Units	Quarter 3	% of Tech Spec Limit	Quarter 4	% of Tech Spec Limit
Gamma	5.0	mrad	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta	10.0	mrad	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Cumulative Doses per Year

Type of Radi-ation	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Gamma	10.0	mrad	0.00E+00	0.00E+00
Beta	20.0	mrad	0.00E+00	0.00E+00

TABLE 2-5A
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM,
AND PARTICULATES IN GASEOUS RELEASES
Unit: 1
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Unit	Quarter 1	% of Tech Spec Limit	Quarter 2	% of Tech Spec Limit
Bone	7.5	mrem	1.14E-05	1.52E-04	1.12E-04	1.50E-03
Liver	7.5	mrem	1.97E-03	2.62E-02	1.40E-03	1.87E-02
TBody	7.5	mrem	1.97E-03	2.62E-02	1.40E-03	1.87E-02
Thyroid	7.5	mrem	2.10E-03	2.80E-02	1.48E-03	1.97E-02
Kidney	7.5	mrem	1.97E-03	2.62E-02	1.40E-03	1.87E-02
Lung	7.5	mrem	1.97E-03	2.62E-02	1.40E-03	1.87E-02
GILLI	7.5	mrem	1.97E-03	2.62E-02	1.41E-03	1.87E-02

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	15.0	mrem	1.24E-04	8.25E-04
Liver	15.0	mrem	3.37E-03	2.25E-02
TBody	15.0	mrem	3.37E-03	2.25E-02
Thyroid	15.0	mrem	3.58E-03	2.39E-02
Kidney	15.0	mrem	3.37E-03	2.25E-02
Lung	15.0	mrem	3.37E-03	2.25E-02
GILLI	15.0	mrem	3.37E-03	2.25E-02

TABLE 2-5A
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM,
AND PARTICULATES IN GASEOUS RELEASES
Unit: 1
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Unit	Quarter 3	% of Tech Spec Limit	Quarter 4	% of Tech Spec Limit
Bone	7.5	mrem	3.89E-04	5.19E-03	1.26E-05	1.69E-04
Liver	7.5	mrem	2.36E-03	3.14E-02	1.77E-03	2.36E-02
TBody	7.5	mrem	2.32E-03	3.10E-02	1.77E-03	2.36E-02
Thyroid	7.5	mrem	2.32E-03	3.09E-02	1.79E-03	2.39E-02
Kidney	7.5	mrem	2.31E-03	3.08E-02	1.77E-03	2.36E-02
Lung	7.5	mrem	2.31E-03	3.09E-02	1.77E-03	2.36E-02
GILLI	7.5	mrem	2.31E-03	3.08E-02	1.77E-03	2.36E-02

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	15.0	mrem	4.75E-04	3.17E-03
Liver	15.0	mrem	7.23E-03	4.82E-02
TBody	15.0	mrem	7.20E-03	4.80E-02
Thyroid	15.0	mrem	8.60E-03	5.73E-02
Kidney	15.0	mrem	7.19E-03	4.79E-02
Lung	15.0	mrem	7.19E-03	4.79E-02
GILLI	15.0	mrem	7.18E-03	4.79E-02

TABLE 2-5B
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM,
AND PARTICULATES IN GASEOUS RELEASES
Unit: 2
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Unit	Quarter 1	% of Tech Spec Limit	Quarter 2	% of Tech Spec Limit
Bone	7.5	mrem	1.96E-05	2.61E-04	1.75E-04	2.33E-03
Liver	7.5	mrem	4.48E-03	5.97E-02	4.69E-03	6.25E-02
TBody	7.5	mrem	4.48E-03	5.97E-02	4.69E-03	6.25E-02
Thyroid	7.5	mrem	4.67E-03	6.22E-02	4.76E-03	6.34E-02
Kidney	7.5	mrem	4.48E-03	5.97E-02	4.69E-03	6.25E-02
Lung	7.5	mrem	4.48E-03	5.97E-02	4.69E-03	6.25E-02
GILLI	7.5	mrem	4.48E-03	5.97E-02	4.69E-03	6.26E-02

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	15.0	mrem	1.94E-04	1.30E-03
Liver	15.0	mrem	9.16E-03	6.11E-02
TBody	15.0	mrem	9.17E-03	6.11E-02
Thyroid	15.0	mrem	9.42E-03	6.28E-02
Kidney	15.0	mrem	9.16E-03	6.11E-02
Lung	15.0	mrem	9.17E-03	6.11E-02
GILLI	15.0	mrem	9.17E-03	6.11E-02

TABLE 2-5B
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM,
AND PARTICULATES IN GASEOUS RELEASES
Unit: 2
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	Tech Spec Limit	Unit	Quarter 3	% of Tech Spec Limit	Quarter 4	% of Tech Spec Limit
Bone	7.5	mrem	5.95E-05	7.93E-04	4.75E-05	6.34E-04
Liver	7.5	mrem	3.68E-03	4.91E-02	9.59E-03	1.28E-01
TBody	7.5	mrem	3.69E-03	4.92E-02	9.60E-03	1.28E-01
Thyroid	7.5	mrem	3.73E-03	4.98E-02	9.62E-03	1.28E-01
Kidney	7.5	mrem	3.68E-03	4.91E-02	9.59E-03	1.28E-01
Lung	7.5	mrem	3.68E-03	4.91E-02	9.59E-03	1.28E-01
GILLI	7.5	mrem	3.68E-03	4.91E-02	9.60E-03	1.28E-01

Cumulative Doses per Year

Organ	Tech Spec Limit	Units	Year to Ending Date	% of Tech Spec Limit
Bone	15.0	mrem	3.01E-04	2.01E-03
Liver	15.0	mrem	2.24E-02	1.50E-01
TBody	15.0	mrem	2.25E-02	1.50E-01
Thyroid	15.0	mrem	2.28E-02	1.52E-01
Kidney	15.0	mrem	2.24E-02	1.50E-01
Lung	15.0	mrem	2.24E-02	1.50E-01
GILLI	15.0	mrem	2.24E-02	1.50E-01

TABLE 2-6
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
MINIMUM DETECTABLE CONCENTRATIONS - GASEOUS SAMPLE ANALYSES
STARTING: 1-Jan-2006 ENDING: 31-Dec-2006

The values in this table represent a priori Minimum Detectable Concentration (MDC) that are typically achieved in laboratory analyses of gaseous radwaste samples.

RADIONUCLIDE	***MDC***	***UNITS***
Kr-87	2.94E-08	uCi/cc
Kr-88	3.22E-08	uCi/cc
Xe-133	2.30E-08	uCi/cc
Xe-133m	7.30E-08	uCi/cc
Xe-135	8.73E-09	uCi/cc
Xe-138	1.99E-07	uCi/cc
I-131	1.34E-13*	uCi/cc
I-133	1.53E-13*	uCi/cc
Mn-54	1.62E-13*	uCi/cc
Fe-59	3.42E-13*	uCi/cc
Co-58	1.30E-13*	uCi/cc
Co-60	1.54E-13*	uCi/cc
Zn-65	2.54E-13*	uCi/cc
Mo-99	9.61E-13*	uCi/cc
Cs-134	1.42E-13*	uCi/cc
Cs-137	1.28E-13*	uCi/cc
Ce-141	1.26E-13*	uCi/cc
Ce-144	5.64E-13*	uCi/cc
Sr-89	1.10E-16	uCi/cc
Sr-90	6.70E-16	uCi/cc
H-3	4.00E-07	uCi/cc

** Based on an estimated sample quantity of 4.078E+07 cc's.*

Table 2-7A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 1
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF BATCH RELEASES	:	0	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	0	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	0	MINUTES
AVERAGE TIME FOR BATCH RELEASES	:	0	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	0	MINUTES

There were no batch gaseous releases for this reporting period.

Table 2-7A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 1
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF BATCH RELEASES	:	0	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	0	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	0	MINUTES
AVERAGE TIME FOR BATCH RELEASES	:	0	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	0	MINUTES

There were no batch gaseous releases for this reporting period.

Table 2-7B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 2
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF BATCH RELEASES	:	0	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	0	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	0	MINUTES
AVERAGE TIME FOR BATCH RELEASES	:	0	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	0	MINUTES

There were no batch gaseous releases for this reporting period.

Table 2-7B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - BATCH RELEASE SUMMARY
UNIT 2
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF BATCH RELEASES	:	0	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	0	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	0	MINUTES
AVERAGE TIME FOR BATCH RELEASES	:	0	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	0	MINUTES

There were no batch gaseous releases for this reporting period.

Table 2-8A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 1
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal gaseous releases for this reporting period.

Table 2-8A
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 1
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal gaseous releases for this reporting period.

Table 2-8B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 2
STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal gaseous releases for this reporting period.

Table 2-8B
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
GASEOUS EFFLUENTS - ABNORMAL RELEASE SUMMARY
UNIT 2
STARTING: 1-Jul-2006 ENDING: 31-Dec-2006

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0	MINUTES
AVERAGE TIME FOR A RELEASE	:	0	MINUTES
MINIMUM TIME FOR A RELEASE	:	0	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

There were no abnormal gaseous releases for this reporting period.

3.0 Solid Waste

3.1 Regulatory Requirements

The Process Control Program (PCP) and the ODCM requirements presented in this section are for Unit 1 and Unit 2 and are stated in part.

3.1.1 Solid Radioactive Waste System

PCP Section A.3.1 Solid Radioactive Waste System control states:

The solid radwaste system shall be used in accordance with the PROCESS CONTROL PROGRAM to provide for the SOLIDIFICATION of wet solid wastes and for the SOLIDIFICATION and packaging of other radioactive wastes, as required, to ensure that they meet requirements of 10 CFR Parts 20 and 71, prior to shipment of radioactive wastes from the site.

3.1.2 Reporting Requirements

Technical Specification 5.6.3 requires in part:

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and the Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

PCP Section A.4.1 states in part:

The Radioactive Effluent Release Report, submitted in accordance with Technical Specification 5.6.3, shall include a summary of the quantities of solid radwaste released from the units as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," Revision 1, June 1974, with data summarized on a 6 month basis following the format of Appendix B thereof.

For each type of solid radwaste shipped offsite during the report period, the report shall include the following information:

a. Container volume.

b. Total curie quantity (specify whether determined by measurement or estimate).

c. Principal radionuclides (specify whether determined by measurement or estimate).

d. Type of waste (such as spent resin, compacted dry waste, evaporator bottoms).

e. Type of container (such as LSA, type A, type B, large quantity).

f. Solidification agent (such as cement).

Major changes to the solid radioactive waste treatment system shall be reported to the Nuclear Regulatory Commission in the Radioactive Effluent Release Report for the period in which the evaluation was reviewed and accepted by the PRB.

3.2 Solid Waste Data

Regulatory Guide 1.21, Table 3 is found in this report as Table 3-1.

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-Jan-2006 ***ENDING: 30-Jun-2006***

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of waste	UNIT	6 month period	Est. Total ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	1.330E+01	
	Ci	8.280E+02	1.00 E 01
b. Dry compressible waste, contaminated equip. etc.	m^3	1.271E+02	
	Ci	1.170E+01	2.00 E 01
c. Irradiated components, control rods,	m^3		
	Ci		
d. Control Rod Drive Filters	m^3		
	Ci		
e. Other (describe) Equip. etc.	m^3		
	Ci		

2. Estimate of major nuclide composition (by type of waste)

ISOTOPE	PERCENT	CURIES
a.Fe-55	22.4	1.853E+02
Co-60	31.5	2.610E+02
Zn-65	9.70	8.010E+01
Mn-54	23.8	1.968E+02
Cr-51	4.80	3.990E+01
Other	7.80	6.490E+01
b.Fe-55	22.1	2.582E+00
Co-60	25.5	2.978E+00
Mn-54	5.70	6.643E-01
Zn-65	35.1	4.102E+00
Other	11.7	1.374E+00
c.		
d.		
e.		

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
All waste sent to processors	N/A	N/A

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-Jul-2006 ***ENDING: 31-Dec-2006***

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of waste	UNIT	6 month period	Est. Total ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	9.70E+00	
	Ci	5.00E+01	1.00 E 01
b. Dry compressible waste, contaminated equip. etc.	m^3	1.45E+02	
	Ci	2.74E-01	2.00 E 01
c. Irradiated components, control rods,	m^3		
	Ci		
d. Control Rod Drive Filters	m^3		
	Ci		
e. Other (describe) Equip. etc.	m^3		
	Ci		

2. Estimate of major nuclide composition (by type of waste)

ISOTOPE	PERCENT	CURIES
a.Fe-55	16.7	8.36E+00
Co-60	47.0	2.35E+01
Zn-65	18.7	9.33E+00
Mn-54	9.9	4.96E+00
Other	7.6	3.81E+00
b.Fe-55	22.2	6.08E-02
Co-60	25.6	7.02E-02
Mn-54	5.71	1.56E-02
Zn-65	35.2	9.65E-02
Other	11.3	3.09E-02
c.		
d.		
e.		

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
All waste sent to processors	N/A	N/A

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-Jan-2006 ENDING: 30-Jun-2006

TYPE OF WASTE	CURIE QUANTITY/ DETERMINED	PRINCIPAL NUCLIDES/ DETERMINATION	BURIAL CONTAINER DESCRIPTION	NUMBER OF CONTAINERS SHIPPED	VOLUME OF EACH CONTAINER CUBIC FEET (FT 3)	TYPE SHIPMENT/ CONTAINER	SOLIDIFICATION AGENT
Dewatered Resins	828	Zn-65,Fe-55,Co-60 Mn-54, Cr-51	High Intergrity Container	3.9 * See Note	120.3	14-210 DOT 7A TYPE A CASK/ 8-120(B) CASK/ 14-210**STC Cask	N/A
Dry Active Waste	11.7	Fe-55,Co-60,Mn-54 Zn-65	B-25 Boxes/High Integrity Container	49.9 * See Note	90/120.3/ 202.1	**STC (B-25)/DOT 7A TYPE A CASK	N/A

* **Note: The actual size and number of the containers may vary from the recorded values due to the use of different containers by waste processors.**

** **STC-Strong Tight Container**

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-JUL-2006 ENDING:31-DEC-2006

TYPE OF WASTE	CURIE QUANTITY/ DETERMINED	PRINCIPAL NUCLIDES/ DETERMINATION	BURIAL CONTAINER DESCRIPTION	NUMBER OF CONTAINERS SHIPPED	VOLUME OF EACH CONTAINER CUBIC FEET (FT 3)	TYPE SHIPMENT/ CONTAINER	SOLIDIFICATION AGENT
Dewatered Resins	50	Zn-65,Fe-55,Co-60 Mn-54	High Intergrity Container	2.85 * See Note	120.3	14-210(H) TYPE A CASK/ 14-210**STC Cask	N/A
Dry Active Waste	0.274	Fe-55,C0-60,Mn-54 Zn-65	B-25 Boxes/High Integrity Container	53.3 * See Note	96	Excepted Packages (B-25)	N/A

* **Note: The actual type, size and number of the containers may vary from the recorded values due to the use of different containers by waste processors for final disposal of processed resin and DAW.**

4.0 Doses to Members of the Public Inside the Site Boundary

4.1 Regulatory Requirements

ODCM 7.2.2.3 states in part that the Radioactive Effluent Release Report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY during the report period; this assessment must be performed in accordance with the ODCM.

4.2 Demonstration of Compliance

The locations of concern within the site boundary are the Roadside Park, the Camping Area, the Recreation Area, and the Visitors Center. Listed in Table 4-1 are: The distance and direction from a point midway between the center of Unit 1 and the Unit 2 reactors, the dispersion and deposition factors for any releases from the Main Stack (elevated) and from the reactor building (ground level); and the estimated maximum occupancy factor for an individual and the assumed age group of this individual.

The source term is not listed in Table 4-1 . The source term is listed in Tables 2-2A and 2-2B, for the elevated releases. Similarly the source term is listed in Tables 2-3A and 2-3B for the ground level releases.

The maximum doses in units of mrem accumulated by an individual MEMBER OF THE PUBLIC due to their activities inside the site boundary during the reporting period are presented in Table 4-1.

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	ROADSIDE PARK
Distance (kilometers)	1.18E+00
Sector	WNW
Occupancy Factor	2.28E-04 (2.00E+00 hr/yr)
Age Group	CHILD

Ground Level Releases:

Noble Gas X/Q (sec/m3)	7.83E-06
Particulate X/Q (sec/m3)	7.00E-06
Particulate D/Q (m-2)	2.01E-08

Mixed Mode Releases:

Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

Elevated Releases:

Noble Gas X/Q (sec/m3)	2.42E-08
Particulate X/Q (sec/m3)	2.37E-08
Particulate D/Q (m-2)	1.29E-09

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	9.72E-10	8.90E-10	1.86E-09	1.86E-09
Liver	mrem	7.36E-07	6.83E-07	1.42E-06	1.42E-06
TBody	mrem	7.36E-07	6.83E-07	1.42E-06	1.42E-06
Thyroid	mrem	7.50E-07	6.85E-07	1.44E-06	1.44E-06
Kidney	mrem	7.36E-07	6.83E-07	1.42E-06	1.42E-06
Lung	mrem	7.36E-07	6.86E-07	1.42E-06	1.42E-06
GI-LLI	mrem	7.36E-07	6.84E-07	1.42E-06	1.42E-06

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	CAMPING AREA
Distance (kilometers)	1.27E+00
Sector	WNW
Occupancy Factor	5.48E-03 (4.80E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	7.03E-06
Particulate X/Q (sec/m3)	6.27E-06
Particulate D/Q (m-2)	1.80E-08
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A
Elevated Releases:	
Noble Gas X/Q (sec/m3)	2.38E-08
Particulate X/Q (sec/m3)	2.33E-08
Particulate D/Q (m-2)	1.21E-09

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	2.10E-08	1.92E-08	4.02E-08	4.02E-08
Liver	mrem	1.58E-05	1.47E-05	3.06E-05	3.06E-05
TBody	mrem	1.58E-05	1.47E-05	3.06E-05	3.06E-05
Thyroid	mrem	1.62E-05	1.47E-05	3.09E-05	3.09E-05
Kidney	mrem	1.58E-05	1.47E-05	3.06E-05	3.06E-05
Lung	mrem	1.58E-05	1.48E-05	3.06E-05	3.06E-05
GI-LLI	mrem	1.58E-05	1.47E-05	3.06E-05	3.06E-05

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	RECREATION AREA
Distance (kilometers)	1.03E+00
Sector	SSE
Occupancy Factor	2.37E-02 (2.08E+02 hr/yr)
Age Group	CHILD

Ground Level Releases:

Noble Gas X/Q (sec/m3)	6.42E-06
Particulate X/Q (sec/m3)	5.73E-06
Particulate D/Q (m-2)	2.36E-08

Mixed Mode Releases:

Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

Elevated Releases:

Noble Gas X/Q (sec/m3)	3.30E-08
Particulate X/Q (sec/m3)	3.21E-08
Particulate D/Q (m-2)	1.56E-09

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	8.49E-08	7.68E-08	1.62E-07	1.62E-07
Liver	mrem	6.26E-05	5.82E-05	1.21E-04	1.21E-04
TBody	mrem	6.26E-05	5.82E-05	1.21E-04	1.21E-04
Thyroid	mrem	6.39E-05	5.83E-05	1.22E-04	1.22E-04
Kidney	mrem	6.26E-05	5.82E-05	1.21E-04	1.21E-04
Lung	mrem	6.26E-05	5.84E-05	1.21E-04	1.21E-04
GI-LLI	mrem	6.26E-05	5.82E-05	1.21E-04	1.21E-04

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	VISITORS CENTER
Distance (kilometers)	6.94E-01
Sector	WSW
Occupancy Factor	4.57E-04 (4.00E+00 hr/yr)
Age Group	CHILD

Ground Level Releases:

Noble Gas X/Q (sec/m3)	1.87E-05
Particulate X/Q (sec/m3)	1.72E-05
Particulate D/Q (m-2)	5.47E-08

Mixed Mode Releases:

Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

Elevated Releases:

Noble Gas X/Q (sec/m3)	5.00E-08
Particulate X/Q (sec/m3)	4.97E-08
Particulate D/Q (m-2)	2.26E-09

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	4.69E-09	4.35E-09	9.04E-09	9.04E-09
Liver	mrem	3.62E-06	3.37E-06	6.99E-06	6.99E-06
TBody	mrem	3.62E-06	3.37E-06	6.99E-06	6.99E-06
Thyroid	mrem	3.70E-06	3.37E-06	7.07E-06	7.07E-06
Kidney	mrem	3.62E-06	3.37E-06	6.99E-06	6.99E-06
Lung	mrem	3.62E-06	3.38E-06	7.01E-06	7.01E-06
GI-LLI	mrem	3.62E-06	3.37E-06	6.99E-06	6.99E-06

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	ROADSIDE PARK
Distance (kilometers)	1.18E+00
Sector	WNW
Occupancy Factor	2.28E-04 (2.00E+00 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	7.83E-06
Particulate X/Q (sec/m3)	7.00E-06
Particulate D/Q (m-2)	2.01E-08
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A
Elevated Releases:	
Noble Gas X/Q (sec/m3)	2.42E-08
Particulate X/Q (sec/m3)	2.37E-08
Particulate D/Q (m-2)	1.29E-09

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	5.93E-10	1.73E-10	7.66E-10	2.63E-09
Liver	mrem	1.29E-06	1.45E-06	2.73E-06	4.15E-06
TBody	mrem	1.29E-06	1.45E-06	2.73E-06	4.15E-06
Thyroid	mrem	1.29E-06	1.45E-06	2.73E-06	4.17E-06
Kidney	mrem	1.29E-06	1.45E-06	2.73E-06	4.15E-06
Lung	mrem	1.29E-06	1.45E-06	2.73E-06	4.16E-06
GI-LLI	mrem	1.29E-06	1.45E-06	2.73E-06	4.15E-06

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	CAMPING AREA
Distance (kilometers)	1.27E+00
Sector	WNW
Occupancy Factor	5.48E-03 (4.80E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	7.03E-06
Particulate X/Q (sec/m3)	6.27E-06
Particulate D/Q (m-2)	1.80E-08
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A
Elevated Releases:	
Noble Gas X/Q (sec/m3)	2.38E-08
Particulate X/Q (sec/m3)	2.33E-08
Particulate D/Q (m-2)	1.21E-09

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	1.28E-08	3.77E-09	1.66E-08	5.67E-08
Liver	mrem	2.77E-05	3.11E-05	5.89E-05	8.94E-05
TBody	mrem	2.77E-05	3.11E-05	5.89E-05	8.94E-05
Thyroid	mrem	2.77E-05	3.12E-05	5.89E-05	8.98E-05
Kidney	mrem	2.77E-05	3.11E-05	5.89E-05	8.94E-05
Lung	mrem	2.77E-05	3.12E-05	5.89E-05	8.95E-05
GI-LLI	mrem	2.77E-05	3.11E-05	5.89E-05	8.94E-05

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	RECREATION AREA
Distance (kilometers)	1.03E+00
Sector	SSE
Occupancy Factor	2.37E-02 (2.08E+02 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	6.42E-06
Particulate X/Q (sec/m3)	5.73E-06
Particulate D/Q (m-2)	2.36E-08
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A
Elevated Releases:	
Noble Gas X/Q (sec/m3)	3.30E-08
Particulate X/Q (sec/m3)	3.21E-08
Particulate D/Q (m-2)	1.56E-09

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	5.12E-08	1.66E-08	6.78E-08	2.29E-07
Liver	mrem	1.10E-04	1.23E-04	2.33E-04	3.54E-04
TBody	mrem	1.10E-04	1.23E-04	2.33E-04	3.54E-04
Thyroid	mrem	1.10E-04	1.23E-04	2.33E-04	3.55E-04
Kidney	mrem	1.10E-04	1.23E-04	2.33E-04	3.54E-04
Lung	mrem	1.10E-04	1.23E-04	2.33E-04	3.54E-04
GI-LLI	mrem	1.10E-04	1.23E-04	2.33E-04	3.54E-04

TABLE 4-1
E. I. HATCH NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	VISITORS CENTER
Distance (kilometers)	6.94E-01
Sector	WSW
Occupancy Factor	4.57E-04 (4.00E+00 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	1.87E-05
Particulate X/Q (sec/m3)	1.72E-05
Particulate D/Q (m-2)	5.47E-08
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A
Elevated Releases:	
Noble Gas X/Q (sec/m3)	5.00E-08
Particulate X/Q (sec/m3)	4.97E-08
Particulate D/Q (m-2)	2.26E-09

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	2.90E-09	7.90E-10	3.69E-09	1.27E-08
Liver	mrem	6.34E-06	7.12E-06	1.35E-05	2.05E-05
TBody	mrem	6.34E-06	7.12E-06	1.35E-05	2.05E-05
Thyroid	mrem	6.34E-06	7.12E-06	1.35E-05	2.05E-05
Kidney	mrem	6.34E-06	7.12E-06	1.35E-05	2.05E-05
Lung	mrem	6.34E-06	7.13E-06	1.35E-05	2.05E-05
GI-LLI	mrem	6.34E-06	7.12E-06	1.35E-05	2.05E-05

5.0 Total Dose from Uranium Fuel Cycle (40 CFR 190)

5.1 Regulatory Requirements

The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to less than or equal to 25 mrems to the whole body or to any organ, except the thyroid, which shall be limited to less than or equal to 75 mrems.

5.2 Demonstration of Compliance

No dose limits stated in ODCM Sections 2.1.3, 3.1.3, and 3.1.4 were exceeded. Therefore, compliance with 40 CFR 190 dose limits was demonstrated in accordance with the requirements of ODCM Section 5.1.3.

6.0 Meteorological Data

The Radioactive Effluent Release Report, to be submitted by May 1 of each year, shall include an annual summary of hourly meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing of wind speed, wind direction, atmospheric stability, and precipitation (if measured), on magnetic tape, or, in the form of joint frequency distributions of wind speed, wind direction and atmospheric stability.

In lieu of submission with the Radioactive Effluent Release Report, the licensee has retained this summary of required meteorological data on site in a file. It will be provided to the NRC upon request.

7.0 Program Deviations

7.1 Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation

7.1.1 Regulatory Requirements

ODCM, Chapter 7, Section 7.2.2.6.2 states that the Radioactive Effluent Release Report shall include deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements included in Sections 2.1.1 and 3.1.1, respectively.

7.1.2 Description of Deviations

There were no deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements during this reporting period.

7.2 Tanks Exceeding Curie Content Limits

7.2.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include notifications if the contents within any outside temporary tank, for liquids, exceed the limit of Technical Specification 5.5.8.b.

7.2.2 Description of Deviations

There were no outside temporary tanks, for liquids, that exceeded the limit of Technical Specification 5.5.8.b during this reporting period.

7.3 Effluent Sample Analysis Exceeding Minimum Detectable Concentration (MDC)

7.3.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that deviations from MDC(s) required in Table 3-3 shall be included in the Radioactive Effluent Release Report.

7.3.2 Description of Deviation

There were no deviations from MDC(s) required in Table 3-3 during this reporting period.

8.0 Changes to the Plant Hatch Offsite Dose Calculation Manual (ODCM)

8.1 Regulatory Requirements

Pursuant to Technical Specification 5.5.1 and ODCM Section 7.2.2.5, licensee initiated changes shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

8.2 *Description of Changes*

There were three revisions to the Hatch ODCM in 2006. They are described below.

Version 17, May 2006
In Tables 2-1, 2-2, 2-3, and 2-4, Groundwater Outfall Y22N008A was added as a radioactive liquid release point along with the associated instrumentation (auto sampler and flow totalizer) and sampling, monitoring, and action requirements. The Figure 2-3, Site Subsurface Drainage Systems, was added to show the liquid flow path to Y22N008A. Additionally, Section 7.2.2.1 was revised to reflect appropriate Appendix I guidance regarding unplanned liquid releases to the environment.

Version 18, August 2006
Groundwater Outfall Y22N003A was added as a permitted liquid effluent release point along with the associated instrumentation (auto sampler and flow meter), sampling, monitoring, and action requirements. Figure 2-4, Northwest Surface Drainage System, was added to show the drainage flow path to outfall Y22N003A.

Version 19, November 2006
Per CR 2006110471, clarified Table 2-1 and 2-2 for groundwater outfall instrumentation operational requirements. The instruments listed in the table are monitoring separate streams therefore each one is required to be operable and they can not be substituted for each other. Also revised Action 108 in Table 3-1, Radioactive Gaseous Effluent Monitoring Instrumentation, to clarify the actions for the Condenser Offgas Pretreatment Radiation Monitor per Tech Spec Surveillance Requirement 3.7.6.1 when the minimum number of operable channels is less than required.

9.0 *Major Changes to Liquid, Gaseous, or Solid Radwaste Treatment Systems*

9.1 *Regulatory Requirements*

The Radioactive Effluent Release Report shall include. . . . any major change to liquid, gaseous, or solid radwaste treatment systems pursuant to ODCM Chapter 7, Section 7.2.2.7.

9.2 Description of Major Changes

Gaseous Radwaste System

There were no major changes to the gaseous radwaste system during this reporting period.

Solid Radwaste System

There were no major changes to the solid radwaste system during this reporting period.

Liquid Radwaste System

There were no major changes to the Liquid Radwaste Treatment System during this reporting period.

SOUTHERN COMPANY

E. I. HATCH NUCLEAR PLANT

UNITS NO. 1 & 2

ANNUAL REPORT

JANUARY 1, 2006 - DECEMBER 31, 2006

APPENDIX A

Release of Radioactive RHR Service Water for 2006

The following historical information is provided to create a perspective for the release of radioactivity during the year 2006 relative to the RHR Service Water System.

In 1996, the analysis of samples from the Unit 1 RHR "B" Loop service water (RHRSW) system identified several radionuclides at very low concentrations. The first indication of contamination was noted on August 8, 1996 and the second indication was noted on August 23, 1996. The total activity in the RHRSW contained within the heat exchanger, which has a volume of approximately 4000 gallons, was respectively estimated to be about 13.7 μCi and 25.6 μCi. On August 23, 1996 repairs were made to a Δp instrument in an effort to stop the inleakage into the service water side of the heat exchanger. To determine if the leak had been repaired, the service water loop of the heat exchanger was decontaminated by flushing and the service water in the loop was then resampled and analyzed. The circulating water flume has a blowdown line, which diverts a small portion of the total circulating water to the river via the discharge structure. This resulted in a release to an unrestricted area. Though this release was both monitored and controlled, it was not through the normally utilized liquid radwaste system but the release to the unrestricted area did in fact take the same release path to the river. The regulatory discreteness of this release is discussed in the 1996 evaluation of the release, which is documented in the 10CFR50.59 Evaluation titled "Unit 1 RHR Service Water: Release of Contaminated Water."

The requirements of the Radioactive Effluent Controls Program are spelled out in TS 5.5.4. The Offsite Dose Calculation Manual (ODCM) implements this program and it conforms to the requirements of 10CFR50.36a for the control of radioactive effluents and for maintaining the doses as low as reasonable achievable. Compliance with TS 5.5.4 regarding liquid releases can be assured by adhering to the requirements of ODCM sections 2.1.2, 2.1.3 and 2.1.4 which respectively provide limits on the concentration of the radioactive material at the point of release to an unrestricted area, the resultant dose to a member of the public from the release, and the necessity of using the radwaste treatment system.

MWO 1-96-02845 was worked during the Unit 1 outage to repair the leaks in the U1 RHR "B" Heat Exchanger. The RHR side of the Heat Exchanger was pressurized with helium and a helium detector on the RHRSW side was used to look for the presence of leaks. Based on this it was determined that one of the outermost tubes (tube 1-1) was definitely leaking. No other tubes were identified as definite leakers; however, the eight tubes closest to tube 1-1 were identified as possible leakers.

Integrated Technologies, Inc. performed an eddy current inspection of 245 of the tubes, including all of the suspected leakers and surrounding tubes. This inspection also identified tube 1-1 as a leaker. The tube breach is located next to the top support in the outlet leg. The cause is unknown. No other leaking tubes were identified.

The conservative decision was made to plug the leaker as well as the eight surrounding tubes. After plugging the tubes a hydrostatic pressure test was conducted at 300 psi and the Heat Exchanger was inspected for signs of leakage. No leakage was noted at this time. The Heat Exchanger was deconned, closed up and placed back in service. The Chemistry Department has sampled and monitored the activity during the operation of the Heat Exchanger.

The highest concentrations of radionuclides found in the RHRSW samples for 2006 were from 4/12/06, when the total concentration released was 6.36E-7 μCi/ml. This was a short term increase because results after 4/12/06 returned to the level of approximately 3.0E-8 μCi/ml. As shown in the following table, the highest concentrations were found in 1997, when the total concentration released was 1.21E-5 μCi/ml.

Radio-nuclide	1997 (μCi/ml)	1998 (μCi/ml)	1999 (μCi/ml)	2000 (μCi/ml)	2001 (μCi/ml)
Cr-51	1.07E-6				3.16E-7
Mn-54	2.37E-6	4.95E-7		2.49E-7	2.53E-7
Fe-59					1.19E-7
Co-60	4.94E-6	1.12E-6	2.27E-8	2.82E-7	1.99E-7
Zn-65	2.06E-6	7.96E-8			2.24E-7
Co-58	1.06E-6				
Cs-134	2.10E-7				
Cs-137	4.43E-7				

Radio-nuclide	2002 (μCi/ml)	2003 (μCi/ml)	2004 (μCi/ml)	2005 (μCi/ml)	2006 (μCi/ml)
Cr-51					
Mn-54	2.78E-8	1.46E-8		8.59E-9	
Fe-59					
Co-60	1.99E-7	2.65E-7	3.78E-8	2.96E-8	1.24E-7
Zn-65					
Co-58					
Cs-134					
Cs-137					

Fe-59 was identified in one sample (7/18/01). Heat exchanger testing and the analysis result indicate no new leaks to the system. The results of the samples analyzed in 2005 indicate we are monitoring residual contamination from the 1996 leaks.

ODCM section 2.1.2 requires that the concentrations of the radioactive materials released be limited to 10 times (10X) the concentrations specified in 10CFR20, Appendix B, Table 2, Column 2, with the exception for dissolved or entrained noble gases whose concentration shall be limited to 1.0E-4 μCi/ml.

The following discussion is based on a release duration of 1 minute, a release volume of 4,000 gallons, a total dilution of <u>only</u> 10,000 gallons, and the radionuclide concentrations from 1997. This is a very conservative estimate, since credit for the additional dilution provided by the circulating water flume was not taken into consideration and the activity from 1997 was higher with more radionuclides. The sum of the ratios of the concentration of each radionuclide

in the mixture to its effluent concentration limit (ECL) was 1.15. The sum of the ECL fractions must be less than ten (<10) to ensure that the concentration limit for the mixture is not exceeded. As can be seen, the sum is much less that ten. (10CFR20 Appendix B states that the sum of the fractions of the nuclides divided by their effluent concentration limits (ECLs) must be less than one. Further NRC guidance, Technical Specifications, and the ODCM allow the ECLs in Appendix B to be increased by a factor of 10. Mathematically this can be achieved by dividing the nuclides by the original 10CFR 20 Appendix B ECLs and insuring that the sum of the fractions is less than 10. The plant software performs the sum of the ECL fractions and comparisons this way to insure compliance with 10CRF20 limits.)

ODCM section 2.1.3 requires that the annual dose to a member of the public, in unrestricted areas, due to liquid releases from each unit be limited to 3 mrem to the total body and 10 mrem to any organ. The dose in any quarter is limited to half of the annual limits. Dose calculations were performed for this release, in accordance with ODCM section 2.4, to evaluate the doses relative to this release. The total body dose was 6.66 E-5 mrem (2.2 E-3 % of its annual limit) and the highest organ dose was 7.39 E-5 mrem to the GI-LLI, gastrointestinal track, (7.4 E-4 % of its annual limit). The resultant doses are quite low and essentially do not contribute to the quarterly and/or the annual dose limits. This provides a high degree of assurance that the release in no way presented a threat to the health and safety of a member of the public, even using the very low dilution rate. With a higher dilution value the ECL fraction and the resultant doses are reduced further and become even less significant.

ODCM section 2.1.4 requires that the radwaste system be employed to reduce the radioactivity in the liquid waste prior to its discharge whenever the projected dose due to the release would exceed 0.06 mrem to the total body and 0.2 mrem to any organ. As shown in the previous paragraph, the total body dose due to the release of the RHRSW was much less than 0.06 mrem and the maximum organ dose was much less than 0.2 mrem.

10CFR20.1302 (b)(I) requires that a licensee show compliance with the annual limit of 100 mrem to any member of the public by demonstrating that certain concentration limits of the effluent at the point of release are not exceeded. This was addressed above in the assessment of ODCM section 2.1.2.

10CFR20.1501 (a)(2)(ii) & (iii) requires the licensee to evaluate the concentration or quantities of radioactive materials and the potential radiological hazard, respectively. The concentrations and quantity of the radioactive materials in the release was evaluated by sampling and analysis as discussed above. The potential radiological hazard was also evaluated by performance of the dose calculations, which would be a result of the release, as discussed above in the assessment of ODCM section 2.1.3.

This release does not constitute a Licensee Event Report (LER) based on the following. 10CFR 50.73 (A)(2)(VIII)(B) requires the licensee to report any liquid effluent release which exceeds 20 times the applicable concentration specified in 10CFR20, Appendix B, Table 2, column 2, at the point of entry into the receiving waters (i.e., unrestricted area). This is justified as discussed above in the assessment of ODCM section 2.1.3; it can be seen that the concentrations are much less that the applicable limits.

Design Criterion 64 in Appendix A to 10CFR50 requires the monitoring of effluent discharge paths. Performance of the sampling and analysis of the RHRSW service water before its release complied with this criterion.
Compliance with Appendix I to 10CFR50 was assured by adherence to the applicable ODCM sections as discussed above. Furthermore, Appendix I is the bases for one of these ODCM sections.

40CFR190 is concerned with the annual dose to any member of the public due to releases of radioactivity and to radiation from the uranium fuel cycle sources. This is addressed by TS 5.5.4.j and implemented by ODCM section 5.1.2, which states that additional calculation and reporting is required when any of the dose limits as specified in the ODCM sections 2.1.3, 3.1.3, or 3.1.4 are exceeded by a factor of two. This requirement is not applicable for the release based on the doses as discussed above in the assessment of ODCM section 2.1.3.

NRC Bulletin 80-10, "Contamination of Nonradioactive Systems and Resulting Potential for Unmonitored, Uncontrolled Releases of Radioactivity to the Environment" lists four actions for the licensee. First: identify the affected systems; the Unit 1 RHR "B" loop was identified. Second: establish a sampling/analysis of monitoring program for the affected systems; this was done. Third: restrict use of the system until the cause of the contamination is identified and corrected, and the system is decontaminated. The release was the result of identifying the leakage, implementation of corrective action and of decontaminating the system. The third action also states, that, if it is considered necessary to continue operation of the system as contaminated, then a 10CFR50.59 evaluation must be performed. This was done in 1996. The fourth action calls attention to the regulations to be complied with and states that releases must be monitored and controlled. The release of the RHR service water was sampled and monitored (evaluated) by the sampling and analysis prior to the flush taking place; the release was controlled in the fact that the flush was a planned evolution.

Administrative controls and sampling have been established to ensure that any future releases would be within 10CFR20 limits, reference Lab Standing Order, SO-HPC-001-0402, and 64CH-SAM-028-0.