BYRON NUCLEAR POWER STATION

ANNUAL RADIOLOGICAL EFFLUENT RELEASE REPORT (ARERR)

2012

BYRON NUCLEAR POWER STATION
UNIT 1/2 DOCKET NUMBER STN-50-454/455
RADIOACTIVE EFFLUENT RELEASE REPORT
January 2012 - December 2012
Supplemental Information

1. Regulatory Limits

   a. Fission and activation products:

Tech Spec Whole Body	=	500 mrem/year
Skin	=	3000 mrem/year
10CFR50 Gamma	=	5 mrad/quarter; 10 mrad/year
Beta	=	10 mrad/quarter; 20 mrad/year

   b. Iodine: (summed with particulate, see below)

   c. Particulates with half-lives > 8 days:

Tech Spec Organ	=	1500 mrem/year
10CFR50 Organ	=	7.5 mrem/quarter; 15 mrem/year

   d. Liquid Effluents:

10CFR50 Whole Body	=	1.5 mrem/quarter; 3 mrem/year
Organ	=	5 mrem/quarter; 10 mrem/year

2. Maximum Permissible Concentration

   a. Fission and Activation Products: 10CFR20 Appendix B Table 2
   b. Iodine: 10CFR20 Appendix B Table 2
   c. Particulates: 10CFR20 Appendix B Table 2
   d. Liquid Effluents: 10 X 10CFR20 Appendix B Table 2

3. Average Energy: This item is not applicable. Release rates are calculated using an isotopic mix rather than average energy.

4. Measurements and Approximations of Total Radioactivity

   a. Fission and activation products: Prior to release, the isotopic content is determined. Released activity is calculated using volume of release, which is determined by the change in tank or containment pressure. Additional methods of calculation utilize historical data and assign an isotopic mix, which is representative of normal vent stack isotopics.

   b. Particulate, tritium and iodine sampling media for the plant vent stacks are collected and isotopically analyzed weekly.

   c. Liquid effluents: Isotopic analysis is performed on each batch release prior to its release. Total release activity is calculated using volume of release. Total tritium activity released is calculated from the highest of a monthly circulating water blowdown composite activity or a sum of the input composite activities.

d. Analysis results that are less than the lower limit of detection (<LLD) are reported in units of uCi/cc or uCi/ml unless otherwise noted. All LLD values are listed in Attachment A.

5. Batch Releases:

a. Liquid:

1. Number of batch releases = 87
2. Total time period for batch releases = 15,141 minutes
3. Maximum time period for a batch release = 555 minutes
4. Average time period for a batch release = 174 minutes
5. Minimum time period for a batch release = 22 minutes
6. Average stream flow during periods of release of effluent into a flowing stream = 102 m^3/sec, based on information from the U.S. Geological Survey Byron Gauging Station.

b. Gaseous:

1. Number of batch releases = 345
2. Total time period for batch releases = 38,478 minutes
3. Maximum time period for a batch release = 4,936 minutes
4. Average time period for batch releases = 112 minutes
5. Minimum time period for a batch release = 10 minutes

6. Abnormal Releases:

a. Liquid - None

b. Gaseous – One (Unit 2, 1/30/12 10:01 – 1/31/12 05:29)

7. There were two Off Site Dose Calculation Manual (ODCM) revisions made in 2012.

ODCM Revision 8 was issued on 6/15/12. The revision incorporated several changes. A statement was added to the Auxiliary Building Vent Effluent monitors section that allows the variation of allocation percentages between the two vent stack noble gas radiation monitors not to exceed a total of 90% of the maximum permissible release rate. To align with current release procedures, a statement was added to the Containment Purge Effluent Monitors section that uses a higher multiplier to calculate containment purge rad monitor setpoints when the containment atmosphere rad monitor is not operational to prevent a spurious alarm based on a grab sample that may not be as representative of the containment atmosphere as monitored by the containment purge rad monitor during non-release periods. The Rated Thermal Power (RTP) definition was updated to reflect a power uprate that was performed in 2012, increasing the RTP from 3586.6 megawatts thermal (MWT) to 3645 MWT for each unit. A large number of administrative changes were made, including the change from thermoluminescent (TLD) dosimeter to "dosimeter" as a result of a recent dosimeter type change, the addition of Carbon-14 (C-14) to tritium (H-3) in the notes of several dose factor tables that describe the units of these isotopes as different from others, a typo in a Global Positioning Satellite (GPS) coordinate location for an air sample station, change of Radiological Effluent Controls (RECS) references to Radiological Effluents (RE) for consistency with the existing TRM, addition of month/year of revision to the document, removal of isopleths from the Annual Radiological Environmental Operating Report (AREOR), and other administrative changes including typos, figure/table titles, incorrect references, and the change of section numbers, table numbers, and page numbers.

ODCM Revision 9 was issued on 10/24/12. The revision incorporated several changes. The reference to Onsite Meteorological Programs was updated from NRC Regulatory Guide 1.23

Revision 0 to Revision 1. The revision was prompted by identification that dew point sensors were being calibrated to the Reg Guide 1.23 Rev 1 standard instead of the Reg Guide 1.23 Rev 0 standard that Byron was committed to in the Updated Final Safety Analysis Report (UFSAR). Since dew point is not used in any off site dose calculations, the change did not impact any calculations or the ability to maintain REMP program requirements. REMP indicator milk sample location BY-30-1 went out of business and was removed from the ODCM. A replacement that meets the distance requirements specified in TRM Table T3.12.a-1 was not found. The change did not impact any off site dose calculations or the ability to maintain REMP program requirements. Administrative changes were made to the REMP sample location map due to discovery of existing errors that still showed old milk sample locations.

8. 2012 Radiological Groundwater Protection Program (RGPP) Results Summary:

In 2012, fifteen (15) Radiological Groundwater Protection Program (RGPP) monitoring wells were sampled. The samples were obtained in March, May, August, and October and analyzed for tritium. In addition, a study of gamma, beta, and alpha radioisotopes was performed in accordance with Nuclear Energy Institute (NEI) 07-07, Groundwater Protection Initiative, for the samples obtained in May. None of the May samples showed concentrations of radionuclides above what is considered background levels. Three wells contained levels of tritium above the lower limit of detection (LLD) of 200 pCi/L. They were: AR-4 (861 pCi/L in March, 802 pCi/L in May, 872 pCi/L in August, 830 pCi/L in October), AR-7 (234 pCi/L in January), and AR-11 (1,100 pCi/L in March, 1,110 pCi/L in May, 1,210 pCi/L in August, 994 pCi/L in November). Wells AR-4 and AR-11 are near the Circulating Water Blowdown piping, where historical leakage through vacuum breakers was known to have occurred. Both of these wells are showing a slow but gradual decrease in tritium concentration since first sampled in 2006. In May 2012, the area around well AR-7, located just west of the plant structures, was excavated and re-packed with clay-based soil. This well had detected tritium just above the LLD (234 – 291 pCi/L) in 2011/2012 that was believed to have originated from precipitation recapture of permitted gaseous releases of tritium from the plant that had entered the well during rainfall events as a result of improperly compacted soil around the well during original installation. Tritium has not been detected in this well above the 200 pCi/L LLD since January 2012. The off site dose consequence from tritium present in wells AR-4 and AR-11 is negligible.

SUMMARY

Calculations based on gaseous and liquid effluents and meteorological data indicate that public dose due to radioactive material attributable to Byron Station during the period does not exceed any regulatory or Offsite Dose Calculation Manual (ODCM) limits.

The Total Effective Dose Equivalent (TEDE) due to licensed activities at Byron Station calculated for the maximum exposed individual for the period is 2.75E-01 mrem. The annual limit on TEDE is 100 mrem.

The assessment of radiation doses to the public is performed in accordance with the ODCM. The results of these analyses confirm that the station is operating in compliance with 10CFR50 Appendix I, 10CFR20 and 40CFR190.

There were no additional operational controls implemented in 2012 that affected radiological effluents.

There were no measurements which exceeded the reporting levels, including any that would not have been attributable to station effluents.

The results of the current radiological environmental monitoring program are approximately the same as those found during the pre-operational studies conducted at Byron Station.

RELEASES

Gaseous Effluents to the Atmosphere

A total of 1.98E+02 curies of fission and activation gases were released with a maximum average quarterly release rate of 2.51E+01 µCi/sec.

A total of 1.37E-05 curies of 1-131 were released during the year with a maximum average quarterly release rate of 1.59E-06 µCi/sec.

A total of 1.13E-06 curies were released as airborne particulate matter with a maximum average quarterly release rate of 1.43E-07 µCi/sec.

A total of 8.47E+00 curies of other (C-14) radioisotopes were released with a maximum average quarterly release rate of 2.89E-01 µCi/sec.

A total of 5.56E+01 curies of tritium were released with a maximum average quarterly release rate of 2.20E+00 µCi/sec.

Gross alpha-emitting radionuclides were below detectable limits.

Liquids Released to Rock River

A total of 2.60E+10 liters of radioactive liquid wastes containing 1.79E-02 curies of fission and activation products were discharged with a maximum quarterly average concentration of 1.95E-09 µCi/ml.

A total of 2.68E+03 curies of tritium were discharged with a maximum quarterly average concentration of 3.34E-04 uCi/ml.

A total of 3.06E-03 curies of dissolved and entrained gases were discharged with a maximum quarterly average concentration of 6.88E-10 uCi/ml.

Gross alpha-emitting radionuclides were below detectable limits.

DOSE TO MAN

GASEOUS EFFLUENT PATHWAYS

Noble Gas - Gamma Dose Rates

Offsite Gamma air and whole body dose rates for the period were calculated based on measured release rates, isotopic composition of the noble gases, and average meteorological data. The maximum gamma air dose was 1.83E-03 mrad based on measured effluents and average meteorological data, and 4.42E-04 mrad based on measured effluents and concurrent meteorological data.

Noble Gas - Beta Air and Skin Dose Rates

The range of beta particles in air is relatively small (on the order of a few meters or less). Consequently, plumes of gaseous effluents may be considered "semi-infinite" for the purpose of calculating the dose from beta radiation incident on the skin. However, the actual dose to sensitive skin tissues is difficult to calculate due to the effect of the beta particle energies, thickness of inert skin, and clothing covering sensitive tissues. For purposes of this report the skin is taken to have a thickness of 7.0 mg/cm^2 and an occupancy factor of 1.0 is used. The skin dose was 2.21E-04 mrem based on measured effluents and average meteorological data, and 1.66E-03 mrem based on measured effluents and concurrent meteorological data.

The maximum offsite beta air dose for the year based on measured effluents and average meteorological data was 3.14E-03 mrad, and 3.08E-03 mrad based on measured effluents and concurrent meteorological data.

Radioactive Iodine & Particulate

The human thyroid exhibits a significant capacity to concentrate ingested or inhaled iodine. I-131 released during routine operation of the station may be made available to man resulting in dose to the thyroid. C-14 is also included in this category. C-14 exhibits a capacity to concentrate in bone. C-14 is released in gaseous form and is absorbed into vegetation through photosynthesis. The principal pathways of interest for C-14 are the consumption of vegetation by humans and milk from which animals have ingested C-14 through the consumption of vegetation. With the requirement to begin reporting C-14 dose in 2011 and the addition of C-14 to plant effluents, human dose in this category is primarily driven by the release of C-14 from the plant.

The hypothetical dose to the maximum exposed individual living near the station via ingestion of milk and vegetation was calculated. The source of milk and vegetation was assumed to be at the nearest site boundary with the cows pastured and vegetation grown

from May through October. The maximum organ dose from radioactive iodine and particulate (including C-14) to any organ was 6.90E-01 mrem (child/bone) based on measured effluents and average meteorological data, and 8.63E-01 mrem (child/bone) based on measured effluents and concurrent meteorological data. The maximum dose from radioactive iodine and particulate (including C-14) to the whole body was 1.41E-01 mrem (child) based on measured effluents and average meteorological data, and 1.77E-01 mrem (child) based on measured effluents and concurrent meteorological data.

Gaseous Total Dose

The maximum total dose from gaseous releases to any organ was 6.90E-01 mrem (child/bone) based on measured effluents and average meteorological data, and 8.63E-01 mrem (child/bone) based on measured effluents and concurrent meteorological data. The maximum total dose from gaseous releases to the whole body was 1.41E-01 mrem (child) based on measured effluents and average meteorological data, and 1.77E-01 mrem (child) based on measured effluents and concurrent meteorological data .

LIQUID EFFLUENT PATHWAYS

The principal pathways through the aquatic environment for potential doses to man from liquid waste are ingestion of potable water and eating aquatic foods. Liquid dose was calculated based on the ingestion of potable water and sport fish. It should be noted, however, there are currently no communities within 10 km downstream of the plant using the Rock River for drinking water. NRC-developed equations are used to calculate the doses to the whole body, bone, liver, thyroid, kidney, lung, lower GI tract, and skin. Specific parameters for use in the equations are given in the Exelon Offsite Dose Calculation Manual (ODCM).

The maximum dose from liquid releases to any organ was 2.75E-01 mrem (adult/gilli). The maximum dose from liquid releases to the whole body was 1.61E-01 mrem (adult).

GASEOUS + LIQUID TOTAL DOSE

The maximum total dose to any organ via both gaseous and liquid effluents is 7.10E-01 mrem (child/bone). The maximum dose to the whole body via both gaseous and liquid effluents is 2.75E-01 mrem (child).

Dose Limits to Members of the Public

Byron Station did not exceed any of the dose limits as shown below based on concurrent or historical meteorological data.

- The RETS limits on dose or dose commitment to a member of the public due to radioactive materials in liquid effluents from each reactor is 1.5 mrem to the whole body or 5 mrem to any organ during any calendar quarter and 3 mrem to the whole body or 10 mrem to any organ during a calendar year.

- The RETS limits on air dose due to noble gases released in gaseous effluents to a member of the public from each reactor is 5 mrad for gamma radiation or 10 mrad for beta radiation during any calendar quarter and 10 mrad for gamma radiation or 20 mrad for beta radiation during a calendar year.

- The RETS limits on dose to a member of the public due to radioactive iodine & particulate with half-lives greater than eight days in gaseous effluents released from each reactor is 7.5 mrem to any organ during any calendar quarter and 15 mrem to any organ during a calendar year.

- The 10CFR20 limit on Total Effective Dose Equivalent to individual members of the public is 100 mrem.

SITE METEOROLOGY

Detailed records of the site meteorological measurements taken during each calendar quarter of the year are maintained by the meteorological vendor, retained on site, and are available upon request. The data are presented as cumulative joint frequency distributions of the wind direction for the 250' level and wind speed class by atmospheric stability class determined from the temperature difference between the 250' and 30' levels. Data recovery for all measurements on the meteorological tower was 99.7% during 2012.

SOLID RADIOACTIVE WASTE FOR BURIAL 1ST QUARTER 2012

DATE	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME (m^3) PER SHIPMENT	CURIES* PER SHIPMENT
1/18/12 RWS 12-001	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK (1), NONE	EXCLUSIVE-USE	Clive, UT	4.53E+00	4.87E+00
1/19/12 RWS 12-002	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(2), NONE	EXCLUSIVE-USE	Kingston, TN	1.49E+01	2.91E-02
1/20/12 RWS 12-003	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	2.18E+01	2.78E-02
2/28/12 RWS 12-004	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.16E+01	1.34E-02
3/20/12 RWS 12-005	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK (1), NONE	EXCLUSIVE-USE	Clive, UT	4.53E+00	4.66E+00
Quarterly Totals		Number of Shipments:	5	1.17E+02	9.60E+00
* Calculated using measured ratios				CUBIC M	CURIES

SOLID RADIOACTIVE WASTE FOR BURIAL 2ND QUARTER 2012

DATE	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME (m^3) PER SHIPMENT	CURIES* PER SHIPMENT
4/18/12 RWS 12-006	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	3.40E+01	2.55E-01
5/23/12 RWS 12-007	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	1.89E+00	8.60E-03
6/6/12 RWS 12-008	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK(1), NONE	EXCLUSIVE-USE	Clive, UT	4.67E+00	3.94E+00
6/12/12 RWS 12-009	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.61E+01	9.85E-03
6/12/12 RWS 12-010	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.16E+01	2.16E-02
6/28/12 RWS 12-011	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.61E+01	1.10E-02
6/28/12 RWS 12-012	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.61E+01	1.08E-02
6/28/12 RWS 12-013	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.61E+01	1.10E-02
Quarterly Totals		Number of Shipments:	8	1.77E+02	4.27E+00
* Calculated using measured ratios				CUBIC M	CURIES

SOLID RADIOACTIVE WASTE FOR BURIAL 3RD QUARTER 2012

DATE Shipment #	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME (m^3) PER SHIPMENT	CURIES* PER SHIPMENT
7/24/12 RWS 12-014	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7, UN2916, FISSILE EXCEPTED, CLASS B, CASK(1), NONE	EXCLUSIVE-USE	Andrews, TX	2.58E+00	1.61E+02
7/31/12 RWS 12-015	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7, UN2916, FISSILE EXCEPTED, CLASS B, CASK(1), NONE	EXCLUSIVE-USE	Andrews, TX	2.58E+00	2.10E+02
8/07/12 RWS 12-016	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7, UN2916, FISSILE EXCEPTED, CLASS B, CASK(1), NONE	EXCLUSIVE-USE	Andrews, TX	2.58E+00	1.11E+02
8/14/12 RWS 12-017	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7, UN2916, FISSILE EXCEPTED, CLASS B, CASK(1), NONE	EXCLUSIVE-USE	Andrews, TX	2.69E+00	5.66E+01
8/15/12 RWS 12-018	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.16E+01	1.09E-02
8/15/12 RWS 12-019	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.61E+01	8.62E-03
8/15/12 RWS 12-020	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.61E+01	8.32E-03
8/20/12 RWS 12-021	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7, UN2916, FISSILE EXCEPTED, CLASS B, CASK(1), NONE	EXCLUSIVE-USE	Andrews, TX	2.58E+00	8.29E+01
8/23/12 RWS 12-022	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	5.37E+01	5.59E-03
8/23/12 RWS 12-023	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(6), NONE	EXCLUSIVE-USE	Kingston, TN	1.45E+01	8.46E-03
8/23/12 RWS 12-024	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	5.44E+01	6.25E-03
8/30/12 RWS 12-025	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	3.04E+01	4.63E-03
8/30/12 RWS 12-026	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.16E+01	1.53E-02
9/6/12 RWS 12-027	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	1.26E+01	4.77E-03
9/28/12 RWS 12-028	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	6.62E+01	3.12E-02
Quarterly Totals		Number of Shipments:	15	4.20E+02	6.22E+02
* Calculated using measured ratios				CUBIC M	CURIES

SOLID RADIOACTIVE WASTE FOR BURIAL 4TH QUARTER 2012

DATE Shipment #	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME(m^3) PER SHIPMENT	CURIES* PER SHIPMENT
10/7/12 RWS 12-030	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	3.47E+01	1.24E-01
10/10/12 RWS 12-029	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	2.95E+01	8.33E+00
11/27/12 RWS 12-031	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	5.37E+01	4.32E-03
11/28/12 RWS 12-032	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.16E+01	1.44E-02
11/28/12 RWS 12-033	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX(2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.16E+01	1.19E-02
12/18/12 RWS 12-034	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, FISSILE EXCEPTED, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK(1), NONE	EXCLUSIVE-USE	Oak Ridge, TN	4.65E+00	1.08E+01
Quarterly Totals		Number of Shipments:	6	2.66E+02	1.93E+01
* Calculated using measured ratios				CUBIC M	CURIES

SOLID RADIOACTIVE WASTE FOR BURIAL
Estimated Solid Waste Composition
2012

Resins, Filters, Evap Bottoms			
2012			
Volume (m3) 9.20E+00			
Class A			
Nuclide	% Abund	Curies	uCi/ml
H-3	38.380	3.38E+00	3.67E-01
C-14	0.081	7.11E-03	7.73E-04
Mn-54	0.267	2.35E-02	2.55E-03
Fe-55	11.149	9.81E-01	1.07E-01
Co-57	0.196	1.73E-02	1.88E-03
Co-58	27.186	2.39E+00	2.60E-01
Co-60	4.261	3.75E-01	4.08E-02
Ni-59	0.247	2.17E-02	2.36E-03
Ni-63	17.833	1.57E+00	1.71E-01
Zn-65	0.054	4.73E-03	5.14E-04
Nb-95	0.131	1.16E-02	1.26E-03
Sb-125	0.094	8.25E-03	8.97E-04
Cs-137	0.063	5.57E-03	6.05E-04
Ce-144	0.058	5.11E-03	5.55E-04

Resins, Filters, Evap Bottoms			
2012			
Volume (m3) 1.30E+01			
Class B			
Nuclide	% Abund	Curies	uCi/ml
H-3	0.770	4.79E+00	3.68E-01
C-14	0.031	1.90E-01	1.46E-02
Mn-54	2.050	1.27E+01	9.77E-01
Fe-55	10.623	6.60E+01	5.08E+00
Co-57	0.392	2.44E+00	1.88E-01
Co-58	5.090	3.16E+01	2.43E+00
Co-60	17.819	1.11E+02	8.54E+00
Ni-59	0.793	4.93E+00	3.79E-01
Ni-63	60.635	3.77E+02	2.90E+01
Zn-65	0.115	7.16E-01	5.51E-02
Sr-89	0.000	5.45E-04	4.19E-05
Sr-90	0.012	7.41E-02	5.70E-03
Tc-99	0.001	3.91E-03	3.01E-04
Sb-125	0.445	2.76E+00	2.12E-01
Cs-134	0.177	1.10E+00	8.46E-02
Cs-137	0.981	6.09E+00	4.68E-01
Ce-144	0.045	2.82E-01	2.17E-02
Pu-238	0.000	7.45E-04	5.73E-05
Pu-239	0.000	2.40E-04	1.85E-05
Pu-241	0.020	1.26E-01	9.69E-03
Am-241	0.000	3.57E-04	2.75E-05
Cm-242	0.000	6.30E-05	4.85E-06
Cm-243	0.000	1.14E-03	8.77E-05

Dry Active Waste			
2012			
Volume (m3) 9.04E+02			
Class A			
Nuclide	% Abund	Curies	uCi/ml
H-3	0.336	2.16E-03	2.39E-06
Cr-51	6.267	4.03E-02	4.46E-05
Mn-54	0.972	6.25E-03	6.91E-06
Fe-55	46.405	2.98E-01	3.30E-04
Fe-59	0.794	5.10E-03	5.64E-06
Co-57	0.132	8.51E-04	9.41E-07
Co-58	27.163	1.75E-01	1.94E-04
Co-60	7.003	4.50E-02	4.98E-05
Ni-63	5.155	3.31E-02	3.66E-05
Zn-65	0.202	1.30E-03	1.44E-06
Zr-95	1.904	1.22E-02	1.35E-05
Nb-95	3.006	1.93E-02	2.13E-05
Sn-113	0.115	7.41E-04	8.20E-07
Sb-125	0.321	2.06E-03	2.28E-06
Te-123m	0.003	1.72E-05	1.90E-08
Cs-137	0.129	8.28E-04	9.16E-07
Ce-144	0.092	5.94E-04	6.57E-07

Irradiated Components			
2012 - No Shipments			
Volume (m3) 0			
Class N/A			
	% Abund	Curies	uCi/ml

Other Waste			
Combined Packages, Oil, Sea Lands			
2012			
Volume (m3) 5.32E+01			
Class A			
	% Abund	Curies	uCi/ml
H-3	11.799	2.81E+00	5.28E-02
C-14	0.110	2.63E-02	4.94E-04
Cr-51	3.318	7.90E-01	1.48E-02
Mn-54	1.272	3.03E-01	5.70E-03
Fe-55	31.567	7.52E+00	1.41E-01
Fe-59	0.239	5.70E-02	1.07E-03
Co-57	0.158	3.76E-02	7.07E-04
Co-58	22.362	5.33E+00	1.00E-01
Co-60	14.714	3.50E+00	6.58E-02
Ni-59	0.053	1.27E-02	2.39E-04
Ni-63	11.165	2.66E+00	5.00E-02
Zn-65	0.061	1.46E-02	2.74E-04
Zn-69m	0.000	1.36E-51	2.56E-53
Kr-88	0.000	1.91E-24	3.59E-26
Sr-90	0.006	1.48E-03	2.78E-05
Zr-95	0.553	1.32E-01	2.48E-03
Nb-95	1.237	2.95E-01	5.55E-03
Mo-99	0.000	1.62E-23	3.05E-25
Tc-99	0.130	3.10E-02	5.83E-04
Ru-103	0.017	4.00E-03	7.52E-05
Ru-106	0.024	5.68E-03	1.07E-04
Ag-110m	0.009	2.09E-03	3.93E-05
Sn-113	0.136	3.25E-02	6.11E-04
Sb-124	0.001	1.45E-04	2.73E-06
Sb-125	0.693	1.65E-01	3.10E-03
Te-123m	0.005	1.13E-03	2.12E-05
I-129	0.000	8.12E-06	1.53E-07
I-131	0.000	5.37E-10	1.01E-11
I-133	0.000	1.04E-48	1.95E-50
I-135	0.000	7.58E-56	1.42E-57
Xe-133	0.000	9.08E-15	1.71E-16
Cs-137	0.088	2.09E-02	3.93E-04
Ce-141	0.003	8.17E-04	1.54E-05
Ce-144	0.211	5.02E-02	9.44E-04
Hf-181	0.007	1.78E-03	3.35E-05
W-187	0.000	1.01E-48	1.90E-50
Pu-238	0.001	1.20E-04	2.26E-06
Pu-239	0.000	4.61E-05	8.67E-07
Pu-241	0.059	1.40E-02	2.63E-04
Am-241	0.000	3.14E-05	5.90E-07
Cm-242	0.000	4.32E-05	8.12E-07
Cm-243	0.000	2.42E-05	4.55E-07

Revision 8 of RW-AA-100, Process Control Program (PCP) for Radioactive Waste, was issued in July, 2012. The revision incorporated the following changes:

- Step 4.1.8 was added to allow an Exelon Nuclear plant to store waste from another Exelon Nuclear plant provided formal NRC approval is granted for the transfer of waste. The addition of this procedural step for the transfer and storage of radioactive waste at an Exelon Nuclear plant from another Exelon Nuclear plant to the Process Control Program ensures that if the storage of water from another site is implemented, that a formal NRC review and approval process for the storage of waste from another site will address the site specific effects on the UFSAR and regulatory bases.

- Step 4.2.8 was modified to add "in the pool or loading the processed activated hardware into the Dry Cask storage system." to further clarify the storage of activated hardware. The additional wording has been added to clarify the storage of activated hardware are generic and remain consistent with the UFSAR description of the Spent fuel Pool and Dry Cask Storage Systems.

- Step 4.4.4. was added to state that, "Shipments sent for offsite storage SHALL meet the storage site's waste acceptance criteria." The addition of this procedural step for the transfer and storage of radioactive waste at an Exelon Nuclear plant from another Exelon Nuclear plant to the Process Control Program ensures that if the storage of water from another site is implemented, that a formal NRC review and approval process for the storage of waste from another site will address the site specific effects on the UFSAR and regulatory bases.

- Numerous minor wording and editorial changes were made throughout the document to correct grammatical errors and to improve document readability.

Error Analysis

The following is an estimate of the errors associated with effluent monitoring and analysis. The estimate is calculated using the square root of the sum of the squares methodology.

1. Gaseous Effluents

   Qme=3.33%
   RM=N/A
   ECe=5%
   Stdcse/Smplcse=5%
   qme=N/A

   Total error = 7.8%

2. Liquid Effluents

   Qme=3.33%
   RM=N/A
   ECe=N/A
   Stdcse/Smplcse=5%
   qme=2.22%

   Total error = 6.4%

3. Waste Resin

   Qme=10.0%
   RM=N/A
   ECe=5%
   Stdcse/Smplcse=5%
   qme=1.0%

   Total error = 12.3%

4. DAW, Mechanical Filters, and Contaminated Metal

   Qme=10.0%
   RM=N/A
   ECe=N/A
   Stdcse/Smplcse=5%
   qme=N/A

   Instrument calibration error = 10%

   Total error = 11.2%

Qme = the process quantity measurement error associated with the release point (e.g. flow, level measurements)

RM = error associated with the radiation monitor used in quantifying releases through the release point

ECe = error associated with the collection efficiency of the sample media

Stdcse = one-sigma counting error associated with the counting instrument of interest

Smplcse = one-sigma counting error associated with a sample of a given geometry that is used for the release point of interest

qme = sample quantity measurement error associated with the sample of interest

Miscellaneous Information

A. As required by Technical Specification 5.6.2, meteorological and environmental impact information is reported in the 2012 Annual Radiological Environmental Operating Report (AREOR) or is retained on file to be provided upon request.

B. No limits were exceeded in liquid hold up tanks as stated in Technical Specification 5.5.12 or in waste gas decay tanks as stated in Technical Specification 5.5.12 during the 2012 reporting period.

C. There were no irradiated fuel shipments during the 2012 reporting period. Independent Spent Fuel Storage Installation (ISFSI) campaign began in 2010 when used fuel was removed from the Spent Fuel Pool (SFP), placed into six (6) casks, each containing 32 fuel bundles, and transferred to an outdoor storage pad. No additional casks were placed on the pad in 2011. In 2012, eight (8) additional casks were placed on the pad for a total of fourteen (14) casks. In 2010, additional dosimeters were placed at the site boundary nearest to the storage pad (in between the pad and the nearest resident) in order to measure any potential off site dose from the storage pad. Since the dosimeters were placed, data from the dosimeters, when compared to the existing environmental dosimeters, have shown no statistical difference. As a result, there is currently no offsite dose contribution from the ISFSI facility.

D. There were no REMP sample results that exceeded any technical specification limits or analytical results investigation levels during the 2012 reporting period. REMP composite surface water samples from point BY-12, Rock River downstream of the plant liquid effluent discharge, detected tritium results of 2680 pCi/L (1st Quarter) and 570 pCi/L (3rd Quarter), against a lower detection limit of 200 pCi/L. These positive sample results can be attributed to one or more weekly samples being obtained shortly after a permitted liquid discharge, and are not unexpected. The results are well below the TRM reportable limit of 30,000 pCi/L. There are no communities using the Rock River for drinking water within 10 km downstream of the station. In May, the REMP semi-annual sediment sample from point BY-12 during June 2010, Rock River downstream of the plant liquid effluent discharge, measured a Cs-137 result of 196 pCi/L against a detection limit of 180 pCi/L. There was no Cs-137 present in any of the liquid release tanks discharged in 2012. Cs-137 can be present in local sediment/soil samples as a result of fallout from weapons testing and/or the Chernobyl and Fukushima accidents and is not attributed to Byron plant effluents.

E. There were no elevated releases during the 2012 reporting period. All planned gaseous releases were via vent stacks and are considered to be mixed mode releases.

F. There were no plant effluent radiation release monitors that exceeded inoperability time limits as stated in Technical Requirements Manual (TRM) TLCO 3.11.a, TRM TLCO 3.11.b, or Technical Specification 5.5.12.

G. There was one unplanned release of radioactivity from the site to unrestricted areas during the 2012 reporting period.

On 1/30/12 10:01, Byron Unit 2 tripped due to a loss of off site power. As designed, auxiliary feedwater (AF) was used to supply cooling to the steam generators. As a result, steam generator power operated relief valves (PORVs), were opened to relieve secondary system pressure. These valves relieve directly to atmosphere. The secondary system contains minor amounts of tritium. The secondary tritium concentration was 2.75E-05 uCi/ml as measured on 1/30/12 prior to the event. The secondary water contained no measurable gamma isotopes. The makeup source for the auxiliary feedwater pumps is clean, non-tritiated water from the condensate storage tanks (CST). Because secondary steam containing tritium at a concentration above ODCM-required limits of detection left the plant via an unmonitored release pathway, the radiological release was quantified, and an abnormal gaseous release permit was generated. The release duration was considered to be the

amount of time the aux feed system was in operation and the SG PORVs were open (1168 minutes). The secondary tritium concentration (2.75E-05 uCi/ml) was assumed to be constant throughout the release although it would have been continuously decreasing because the makeup source was non-tritiated. An Abnormal Batch Gaseous Release Report using Byron's current off site dose calculation software (RETDAS) was prepared using 186,000 gallons as the release volume containing tritium at a concentration of 2.75E-05 uCi/ml. The permit calculated the organ dose to the maximally exposed individual as a result of this release to be 1.09E-06 mrem, which is well below the quarterly limit of 7.5 mrem and annual limit of 15 mrem.

H. Attached are offsite dose calculation reports for January through December of 2012.

The following are the maximum annual calculated cumulative offsite doses resulting from Byron airborne releases in 2012 based on concurrent meteorological data:

Unit 1:

Dose	*Maximum Value*	*Sector Affected*
gamma air [1]	4.360 x 10^{-4} mrad	North-Northwest
beta air [2]	3.070 x 10^{-3} mrad	North-Northwest
whole body [3]	8.261 x10^{-2} mrem	North-Northwest
skin [4]	1.650 x 10^{-3} mrem	North-Northwest
organ [5] (child-bone)	4.057 x 10^{-1} mrem	North-Northwest

Unit 1 Compliance Status

10 CFR 50 Appendix I	**Yearly Objective**	**% of Appendix I**
gamma air	10.0 mrad	0.00
beta air	20.0 mrad	0.02
whole body	5.0 mrem	1.65
skin	15.0 mrem	0.01
organ	15.0 mrem	2.70

Unit 2:

Dose	*Maximum Value*	*Sector Affected*
gamma air [1]	5.870 x 10^{-6} mrad	North-Northwest
beta air [2]	1.190 x 10^{-5} mrad	North-Northwest
whole body [3]	9.440 x10^{-2} mrem	North-Northwest
skin [4]	8.470 x 10^{-6} mrem	North-Northwest
organ [5] (child-bone)	4.565 x 10^{-1} mrem	North-Northwest

Unit 2 Compliance Status

10 CFR 50 Appendix I	**Yearly Objective**	**% of Appendix I**
gamma air	10.0 mrad	0.00
beta air	20.0 mrad	0.00
whole body	5.0 mrem	1.89
skin	15.0 mrem	0.00
organ	15.0 mrem	3.04

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(1) Gamma Air Dose - GASPAR II, NUREG-0597
(2) Beta Air Dose - GASPAR II, NUREG-0597
(3) Whole Body Dose - GASPAR II, NUREG-0597
(4) Skin Dose - GASPAR II, NUREG-0597
(5) Inhalation and Food Pathways Dose - GASPAR II, NUREG-0597

Data recovery: 99.7%

Attachment A, 2012 Radioactive Effluent Release Report
2012 Lower Limits of Detection (LLD's)

Nuclide	Gaseous LLD (uCi/cc)	Nuclide	Liquid LLD (uCi/ml)
H3	4.47E-08	H3	1.79E-06
Ar41	3.58E-07	Na24	3.27E-08
Cr51	3.00E-12	Cr51	2.01E-07
Mn54	3.72E-13	Mn54	3.88E-08
Co58	3.63E-13	Fe55	5.48E-07
Fe59	1.35E-12	Co57	2.20E-08
Co60	1.23E-12	Co58	3.18E-08
Ni63	7.19E-15	Fe59	1.11E-07
Zn65	1.45E-12	Co60	5.67E-08
Br82	6.08E-13	Ni63	5.63E-07
Kr85m	1.72E-07	Zn65	5.30E-08
Kr87	3.71E-07	Sr85	3.36E-08
Kr88	5.16E-07	Sr89	2.77E-08
Sr89	2.52E-14	Sr-90	7.68E-09
Sr-90	2.96E-15	Sr92	4.08E-08
Mo99	2.56E-13	Nb95	3.14E-08
I131	7.18E-13	Zr95	5.19E-08
Xe131m	5.79E-06	Mo99	1.82E-08
I133	5.94E-13	Ag110m	3.87E-08
Xe133	2.50E-07	Sb122	5.02E-08
Xe133m	1.17E-06	Te123m	2.01E-08
Cs134	6.06E-13	Sb124	3.07E-08
I135	3.92E-12	Sb125	5.64E-08
Xe135	1.08E-07	Te125m	5.61E-06
Cs137	5.86E-13	Sb126	2.70E-08
Xe138	6.46E-07	I131	3.05E-08
Ba140	1.70E-12	I132	3.58E-08
La140	2.76E-13	Te132	2.08E-08
Ce141	3.89E-13	I133	2.68E-08
Ce144	1.58E-12	Xe133	4.53E-08
Gross Alpha	4.23E-15	Cs134	4.17E-08
		Xe135	2.30E-08
		Cs137	3.80E-08
		Ba140	9.55E-08
		La140	1.45E-08
		Ce141	3.91E-08
		Ce144	1.50E-07
		Gross Alpha	2.67E-07
		Gross Beta	2.31E-07

EFFLUENT AND WASTE DISPOSAL REPORT
SUPPLEMENTAL INFORMATION
GASEOUS EFFLUENTS - BATCH MODE
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		50	46	59	42	197
Total release time	minutes	4.89E+03	2.50E+03	1.98E+04	2.37E+03	2.96E+04
Maximum release time	minutes	1.73E+03	1.17E+02	4.94E+03	1.70E+02	4.94E+03
Average release time	minutes	9.77E+01	5.43E+01	3.36E+02	5.65E+01	1.50E+02
Minimum release time	minutes	2.70E+01	2.60E+01	1.60E+01	1.30E+01	1.30E+01

Note: Waste Gas Decay Tank releases are included with Unit 1 data

EFFLUENT AND WASTE DISPOSAL REPORT
SUPPLEMENTAL INFORMATION
GASEOUS EFFLUENTS - BATCH MODE
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		38	38	36	36	148
Total release time	minutes	3.32E+03	1.87E+03	1.93E+03	1.76E+03	8.87E+03
Maximum release time	minutes	1.17E+03	7.00E+01	8.80E+01	6.90E+01	1.17E+03
Average release time	minutes	8.74E+01	4.92E+01	5.35E+01	4.88E+01	6.00E+01
Minimum release time	minutes	1.00E+01	1.10E+01	2.20E+01	2.10E+01	1.00E+01

EFFLUENT AND WASTE DISPOSAL REPORT
SUPPLEMENTAL INFORMATION
LIQUID EFFLUENTS - BATCH MODE
Unit 1 & Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		21	14	35	17	87
Total release time	minutes	5.60E+03	2.50E+03	5.94E+03	1.10E+03	1.51E+04
Maximum release time	minutes	5.55E+02	3.65E+02	3.89E+02	1.08E+02	5.55E+02
Average release time	minutes	2.67E+02	1.79E+02	1.70E+02	6.49E+01	1.74E+02
Minimum release time	minutes	5.20E+01	5.40E+01	5.80E+01	2.20E+01	2.20E+01
Avg. dilution water flow	gpm	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Note: Liquid releases are divided evenly between units

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1A
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	3.89E-01	1.97E+02	4.02E-01	4.08E-02	1.97E+02
2. Avg. Release Rate	uCi/sec	4.95E-02	2.50E+01	5.06E-02	5.13E-03	6.24E+00
Iodine-131						
1. Total Release	Ci	6.54E-07	1.16E-07	4.73E-06	8.27E-09	5.51E-06
2. Avg. Release Rate	uCi/sec	8.32E-08	1.48E-08	5.96E-07	1.04E-09	1.74E-07
Particulates Half Life >= 8 days						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Release Rate	uCi/sec	(1)	(1)	(1)	(1)	(1)
Others						
1. Total Release	Ci	1.03E+00	1.09E+00	7.91E-01	1.06E+00	3.98E+00
2. Avg. Release Rate	uCi/sec	1.32E-01	1.39E-01	9.95E-02	1.33E-01	1.26E-01
Tritium						
1. Total Release	Ci	7.36E+00	4.47E+00	2.05E+00	3.74E+00	1.76E+01
2. Avg. Release Rate	uCi/sec	9.36E-01	5.68E-01	2.58E-01	4.70E-01	5.57E-01
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Release Rate	uCi/sec	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1C
GASEOUS EFFLUENTS - MIXED MODE RELEASES - CONTINUOUS MODE
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
XE-131M	Ci	(1)	1.97E+02	(1)	(1)	1.97E+02
XE-133	Ci	3.77E-01	5.21E-02	2.56E-01	3.53E-02	7.20E-01
Totals for Period...	Ci	3.77E-01	1.97E+02	2.56E-01	3.53E-02	1.97E+02
Iodines						
I-131	Ci	6.54E-07	1.16E-07	4.73E-06	8.27E-09	5.51E-06
Totals for Period...	Ci	6.54E-07	1.16E-07	4.73E-06	8.27E-09	5.51E-06
Particulates Half Life >= 8 days						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Others						
C-14	Ci	1.03E+00	1.09E+00	7.91E-01	1.06E+00	3.98E+00
Totals for Period...	Ci	1.03E+00	1.09E+00	7.91E-01	1.06E+00	3.98E+00
Tritium						
H-3	Ci	5.38E+00	4.24E+00	1.63E+00	3.70E+00	1.50E+01
Totals for Period...	Ci	5.38E+00	4.24E+00	1.63E+00	3.70E+00	1.50E+01
Gross Alpha Radioactivity						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1C
GASEOUS EFFLUENTS - MIXED MODE RELEASES - BATCH MODE
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
AR-41	Ci	1.59E-03	1.16E-02	6.29E-03	3.61E-03	2.31E-02
KR-85M	Ci	(1)	(1)	2.04E-04	(1)	2.04E-04
XE-133	Ci	1.05E-02	8.95E-04	1.37E-01	2.53E-04	1.49E-01
XE-133M	Ci	1.04E-04	(1)	5.37E-04	1.64E-03	2.27E-03
XE-135	Ci	3.35E-05	(1)	1.73E-03	(1)	1.75E-03
Totals for Period...	Ci	1.22E-02	1.25E-02	1.46E-01	5.50E-03	1.76E-01
Iodines						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Particulates Half Life >= 8 days						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Others						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Tritium						
H-3	Ci	1.98E+00	2.31E-01	4.17E-01	3.31E-02	2.66E+00
Totals for Period...	Ci	1.98E+00	2.31E-01	4.17E-01	3.31E-02	2.66E+00
Gross Alpha Radioactivity						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1A
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	3.91E-01	5.79E-02	2.86E-01	4.31E-02	7.78E-01
2. Avg. Release Rate	uCi/sec	4.98E-02	7.36E-03	3.60E-02	5.42E-03	2.46E-02
Iodine-131						
1. Total Release	Ci	(1)	(1)	7.92E-06	3.03E-07	8.22E-06
2. Avg. Release Rate	uCi/sec	(1)	(1)	9.96E-07	3.82E-08	2.60E-07
Particulates Half Life >= 8 days						
1. Total Release	Ci	1.13E-06	(1)	(1)	(1)	1.13E-06
2. Avg. Release Rate	uCi/sec	1.43E-07	(1)	(1)	(1)	3.56E-08
Others						
1. Total Release	Ci	9.85E-01	1.14E+00	1.13E+00	1.24E+00	4.49E+00
2. Avg. Release Rate	uCi/sec	1.25E-01	1.45E-01	1.42E-01	1.56E-01	1.42E-01
Tritium						
1. Total Release	Ci	9.93E+00	8.79E+00	1.26E+01	6.60E+00	3.80E+01
2. Avg. Release Rate	uCi/sec	1.26E+00	1.12E+00	1.59E+00	8.30E-01	1.20E+00
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Release Rate	uCi/sec	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1C
GASEOUS EFFLUENTS - MIXED MODE RELEASES - CONTINUOUS MODE
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
XE-133	Ci	3.77E-01	5.21E-02	2.56E-01	3.53E-02	7.20E-01
Totals for Period...	Ci	3.77E-01	5.21E-02	2.56E-01	3.53E-02	7.20E-01
Iodines						
I-131	Ci	(1)	(1)	7.92E-06	3.03E-07	8.22E-06
I-132	Ci	(1)	(1)	1.13E-04	(1)	1.13E-04
Totals for Period...	Ci	(1)	(1)	1.21E-04	3.03E-07	1.21E-04
Particulates Half Life >= 8 days						
CO-58	Ci	1.13E-06	(1)	(1)	(1)	1.13E-06
Totals for Period...	Ci	1.13E-06	(1)	(1)	(1)	1.13E-06
Others						
C-14	Ci	9.85E-01	1.14E+00	1.13E+00	1.24E+00	4.49E+00
Totals for Period...	Ci	9.85E-01	1.14E+00	1.13E+00	1.24E+00	4.49E+00
Tritium						
H-3	Ci	9.86E+00	8.73E+00	1.26E+01	6.49E+00	3.76E+01
Totals for Period...	Ci	9.86E+00	8.73E+00	1.26E+01	6.49E+00	3.76E+01
Gross Alpha Radioactivity						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1C
GASEOUS EFFLUENTS - MIXED MODE RELEASES - BATCH MODE
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
AR-41	Ci	2.46E-03	2.65E-03	3.93E-03	7.56E-03	1.66E-02
XE-133	Ci	1.15E-02	1.63E-03	2.38E-02	2.53E-04	3.72E-02
XE-133M	Ci	1.03E-04	1.49E-03	5.33E-04	(1)	2.13E-03
XE-135	Ci	3.34E-05	(1)	1.72E-03	(1)	1.76E-03
Totals for Period...	Ci	1.41E-02	5.77E-03	3.00E-02	7.81E-03	5.77E-02
Iodines						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Particulates Half Life >= 8 days						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Others						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Tritium						
H-3	Ci	7.29E-02	5.81E-02	8.58E-02	1.09E-01	3.26E-01
Totals for Period...	Ci	7.29E-02	5.81E-02	8.58E-02	1.09E-01	3.26E-01
Gross Alpha Radioactivity						
** No Nuclide Activities **		(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
1. Total Release	Ci	1.87E-03	2.29E-03	3.12E-03	1.68E-03	8.96E-03
2. Avg. Diluted Conc.	uCi/ml	5.99E-10	6.76E-10	9.74E-10	5.14E-10	6.90E-10
Tritium						
1. Total Release	Ci	5.22E+02	2.16E+02	5.20E+02	7.74E+01	1.34E+03
2. Avg. Diluted Conc.	uCi/ml	1.67E-04	6.39E-05	1.62E-04	2.36E-05	1.03E-04
Dissolved and Entrained Gases						
1. Total Release	Ci	4.21E-04	9.93E-06	1.10E-03	(1)	1.53E-03
2. Avg. Diluted Conc.	uCi/ml	1.35E-10	2.94E-12	3.44E-10	(1)	1.18E-10
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Volume of liquid waste	liters	3.12E+09	3.38E+09	3.20E+09	3.27E+09	1.30E+10

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2A - Release Tank
LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
1. Total Release	Ci	1.87E-03	2.29E-03	3.12E-03	1.68E-03	8.96E-03
2. Avg. Diluted Conc.	uCi/ml	2.06E-06	3.93E-06	2.07E-06	2.53E-06	2.45E-06
Tritium						
1. Total Release	Ci	4.63E+02	1.98E+02	4.60E+02	6.77E+01	1.19E+03
2. Avg. Diluted Conc.	uCi/ml	5.11E-01	3.41E-01	3.05E-01	1.02E-01	3.25E-01
Dissolved and Entrained Gases						
1. Total Release	Ci	4.21E-04	9.93E-06	1.10E-03	(1)	1.53E-03
2. Avg. Diluted Conc.	uCi/ml	4.64E-07	1.71E-08	7.30E-07	(1)	4.18E-07
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Volume of liquid waste	liters	9.07E+05	5.82E+05	1.51E+06	6.66E+05	3.66E+06

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2A - Circulating Water Blowdown
LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Tritium						
1. Total Release	Ci	5.88E+01	1.76E+01	6.02E+01	9.67E+00	1.46E+02
2. Avg. Diluted Conc.	uCi/ml	1.88E-05	5.21E-06	1.88E-05	2.96E-06	1.13E-05
Dissolved and Entrained Gases						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Volume of liquid waste	liters	3.12E+09	3.38E+09	3.20E+09	3.27E+09	1.30E+10

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2B
LIQUID EFFLUENTS - CONTINUOUS MODE
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Tritium						
H-3	Ci	5.88E+01	1.76E+01	6.02E+01	9.67E+00	1.46E+02
Totals for Period...	Ci	5.88E+01	1.76E+01	6.02E+01	9.67E+00	1.46E+02
Dissolved and Entrained Gases						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Gross Alpha Radioactivity						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2B
LIQUID EFFLUENTS - BATCH MODE
Unit 1

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
CO-57	Ci	2.09E-06	2.26E-06	8.87E-06	(1)	1.32E-05
CO-58	Ci	1.27E-03	7.41E-04	1.07E-03	1.11E-03	4.19E-03
CO-60	Ci	3.89E-04	5.58E-04	1.52E-03	2.15E-04	2.68E-03
CR-51	Ci	1.07E-04	(1)	1.90E-04	2.69E-04	5.66E-04
CS-134	Ci	(1)	(1)	(1)	6.10E-06	6.10E-06
FE-59	Ci	2.51E-06	4.35E-06	(1)	3.00E-05	3.69E-05
I-132	Ci	(1)	(1)	2.31E-06	(1)	2.31E-06
I-133	Ci	(1)	(1)	1.36E-06	(1)	1.36E-06
MN-54	Ci	4.04E-05	3.87E-05	7.56E-05	(1)	1.55E-04
NB-95	Ci	4.54E-05	2.77E-05	1.80E-05	(1)	9.11E-05
NI-63	Ci	(1)	5.66E-04	(1)	(1)	5.66E-04
SB-122	Ci	(1)	(1)	6.87E-06	(1)	6.87E-06
SB-124	Ci	(1)	(1)	1.70E-05	5.82E-06	2.29E-05
SB-125	Ci	4.79E-06	4.38E-05	1.98E-04	4.50E-05	2.92E-04
TE-125M	Ci	(1)	2.97E-04	(1)	(1)	2.97E-04
ZN-65	Ci	(1)	(1)	1.09E-05	(1)	1.09E-05
ZR-95	Ci	6.07E-06	7.92E-06	(1)	(1)	1.40E-05
Totals for Period...	Ci	1.87E-03	2.29E-03	3.12E-03	1.68E-03	8.96E-03
Tritium						
H-3	Ci	4.63E+02	1.98E+02	4.60E+02	6.77E+01	1.19E+03
Totals for Period...	Ci	4.63E+02	1.98E+02	4.60E+02	6.77E+01	1.19E+03
Dissolved and Entrained Gases						
XE-131M	Ci	(1)	(1)	4.92E-05	(1)	4.92E-05
XE-133	Ci	4.21E-04	9.93E-06	1.04E-03	(1)	1.47E-03
XE-133M	Ci	(1)	(1)	1.01E-05	(1)	1.01E-05
XE-135	Ci	(1)	(1)	3.87E-06	(1)	3.87E-06
Totals for Period...	Ci	4.21E-04	9.93E-06	1.10E-03	(1)	1.53E-03
Gross Alpha Radioactivity						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
1. Total Release	Ci	1.87E-03	2.29E-03	3.12E-03	1.68E-03	8.96E-03
2. Avg. Diluted Conc.	uCi/ml	5.99E-10	6.76E-10	9.74E-10	5.14E-10	6.90E-10
Tritium						
1. Total Release	Ci	5.22E+02	2.16E+02	5.20E+02	7.74E+01	1.34E+03
2. Avg. Diluted Conc.	uCi/ml	1.67E-04	6.39E-05	1.62E-04	2.36E-05	1.03E-04
Dissolved and Entrained Gases						
1. Total Release	Ci	4.21E-04	9.93E-06	1.10E-03	(1)	1.53E-03
2. Avg. Diluted Conc.	uCi/ml	1.35E-10	2.94E-12	3.44E-10	(1)	1.18E-10
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Volume of liquid waste	liters	3.12E+09	3.38E+09	3.20E+09	3.27E+09	1.30E+10

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2A - Release Tank
LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
1. Total Release	Ci	1.87E-03	2.29E-03	3.12E-03	1.68E-03	8.96E-03
2. Avg. Diluted Conc.	uCi/ml	2.06E-06	3.93E-06	2.07E-06	2.53E-06	2.45E-06
Tritium						
1. Total Release	Ci	4.63E+02	1.98E+02	4.60E+02	6.77E+01	1.19E+03
2. Avg. Diluted Conc.	uCi/ml	5.11E-01	3.41E-01	3.05E-01	1.02E-01	3.25E-01
Dissolved and Entrained Gases						
1. Total Release	Ci	4.21E-04	9.93E-06	1.10E-03	(1)	1.53E-03
2. Avg. Diluted Conc.	uCi/ml	4.64E-07	1.71E-08	7.30E-07	(1)	4.18E-07
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Volume of liquid waste	liters	9.07E+05	5.82E+05	1.51E+06	6.66E+05	3.66E+06

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2A - Circulating Water Blowdown
LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Tritium						
1. Total Release	Ci	5.88E+01	1.76E+01	6.02E+01	9.67E+00	1.46E+02
2. Avg. Diluted Conc.	uCi/ml	1.88E-05	5.21E-06	1.88E-05	2.96E-06	1.13E-05
Dissolved and Entrained Gases						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Gross Alpha Radioactivity						
1. Total Release	Ci	(1)	(1)	(1)	(1)	(1)
2. Avg. Diluted Conc.	uCi/ml	(1)	(1)	(1)	(1)	(1)
Volume of liquid waste	liters	3.12E+09	3.38E+09	3.20E+09	3.27E+09	1.30E+10

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2B
LIQUID EFFLUENTS - CONTINUOUS MODE
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Tritium						
H-3	Ci	5.88E+01	1.76E+01	6.02E+01	9.67E+00	1.46E+02
Totals for Period...	Ci	5.88E+01	1.76E+01	6.02E+01	9.67E+00	1.46E+02
Dissolved and Entrained Gases						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)
Gross Alpha Radioactivity						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 2B
LIQUID EFFLUENTS - BATCH MODE
Unit 2

REPORT FOR 2012	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
CO-57	Ci	2.09E-06	2.26E-06	8.87E-06	(1)	1.32E-05
CO-58	Ci	1.27E-03	7.41E-04	1.07E-03	1.11E-03	4.19E-03
CO-60	Ci	3.89E-04	5.58E-04	1.52E-03	2.15E-04	2.68E-03
CR-51	Ci	1.07E-04	(1)	1.90E-04	2.69E-04	5.66E-04
CS-134	Ci	(1)	(1)	(1)	6.10E-06	6.10E-06
FE-59	Ci	2.51E-06	4.35E-06	(1)	3.00E-05	3.69E-05
I-132	Ci	(1)	(1)	2.31E-06	(1)	2.31E-06
I-133	Ci	(1)	(1)	1.36E-06	(1)	1.36E-06
MN-54	Ci	4.04E-05	3.87E-05	7.56E-05	(1)	1.55E-04
NB-95	Ci	4.54E-05	2.77E-05	1.80E-05	(1)	9.11E-05
NI-63	Ci	(1)	5.66E-04	(1)	(1)	5.66E-04
SB-122	Ci	(1)	(1)	6.87E-06	(1)	6.87E-06
SB-124	Ci	(1)	(1)	1.70E-05	5.82E-06	2.29E-05
SB-125	Ci	4.79E-06	4.38E-05	1.98E-04	4.50E-05	2.92E-04
TE-125M	Ci	(1)	2.97E-04	(1)	(1)	2.97E-04
ZN-65	Ci	(1)	(1)	1.09E-05	(1)	1.09E-05
ZR-95	Ci	6.07E-06	7.92E-06	(1)	(1)	1.40E-05
Totals for Period...	Ci	1.87E-03	2.29E-03	3.12E-03	1.68E-03	8.96E-03
Tritium						
H-3	Ci	4.63E+02	1.98E+02	4.60E+02	6.77E+01	1.19E+03
Totals for Period...	Ci	4.63E+02	1.98E+02	4.60E+02	6.77E+01	1.19E+03
Dissolved and Entrained Gases						
XE-131M	Ci	(1)	(1)	4.92E-05	(1)	4.92E-05
XE-133	Ci	4.21E-04	9.93E-06	1.04E-03	(1)	1.47E-03
XE-133M	Ci	(1)	(1)	1.01E-05	(1)	1.01E-05
XE-135	Ci	(1)	(1)	3.87E-06	(1)	3.87E-06
Totals for Period...	Ci	4.21E-04	9.93E-06	1.10E-03	(1)	1.53E-03
Gross Alpha Radioactivity						
No Nuclide Activities	Ci	(1)	(1)	(1)	(1)	(1)
Totals for Period...	Ci	(1)	(1)	(1)	(1)	(1)

(1) Less than minimum detectable activity which meets the lower limit of detection (LLD) requirements of TRM Section 3.11

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LIQUID DOSE SUMMARY

Unit 1 & 2

Report for: 2012
Unit Range - From: 1 To: 2
Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) ========== QUARTER 1 ==========

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	1.16E-05	4.24E-02	4.22E-02	4.22E-02	4.22E-02	7.94E-02	0.00E+00	4.25E-02
TEEN	1.17E-05	3.19E-02	3.17E-02	3.17E-02	3.17E-02	5.79E-02	0.00E+00	3.19E-02
CHILD	1.39E-05	3.55E-02	3.53E-02	3.53E-02	3.53E-02	4.47E-02	0.00E+00	3.56E-02
INFANT	1.54E-08	1.57E-02	1.57E-02	1.57E-02	1.57E-02	1.57E-02	0.00E+00	1.57E-02

=== SITE DOSE LIMIT ANALYSIS ========== QUARTER 1 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 1 - Admin. Any Organ	ADULT	GILLI	7.94E-02	3.75E+00	2.12E+00
Qtr 1 - Admin. Total Body	ADULT	TBODY	4.25E-02	1.13E+00	3.77E+00
Qtr 1 - T.Spc. Any Organ	ADULT	GILLI	7.94E-02	5.00E+00	1.59E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	5.31E+01
CR-51	2.20E-02
MN-54	3.47E-01
FE-59	1.31E-02
CO-58	1.48E+00
CO-60	1.21E+00
ZR-95	1.05E-03
NB-95	4.38E+01

Qtr 1 - T.Spc. Total Body	ADULT	TBODY	4.25E-02	1.50E+00	2.83E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.94E+01
CR-51	1.63E-04
MN-54	4.04E-02
FE-59	2.82E-03
CO-58	3.07E-01
CO-60	2.65E-01
ZR-95	4.19E-07
NB-95	7.26E-03

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LIQUID DOSE SUMMARY

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Report for: 2012
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=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) ========== QUARTER 2 ==========

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	1.94E-02	3.92E-02	3.75E-02	4.06E-02	3.73E-02	8.94E-02	0.00E+00	3.85E-02
TEEN	2.01E-02	3.00E-02	2.82E-02	2.80E-02	2.80E-02	6.51E-02	0.00E+00	2.93E-02
CHILD	2.64E-02	3.31E-02	3.15E-02	3.12E-02	3.11E-02	4.46E-02	0.00E+00	3.27E-02
INFANT	1.44E-04	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	0.00E+00	1.38E-02

=== SITE DOSE LIMIT ANALYSIS ========== QUARTER 2 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 2 - Admin. Any Organ	ADULT	GILLI	8.94E-02	3.75E+00	2.38E+00
Qtr 2 - Admin. Total Body	ADULT	TBODY	3.85E-02	1.13E+00	3.42E+00
Qtr 2 - T.Spc. Any Organ	ADULT	GILLI	8.94E-02	5.00E+00	1.79E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	4.17E+01
MN-54	6.10E-01
FE-59	4.17E-02
CO-58	1.58E+00
CO-60	3.17E+00
NI-63	3.00E-01
ZR-95	2.51E-03
NB-95	4.90E+01
TE-125M	3.58E+00

Qtr 2 - T.Spc. Total Body	ADULT	TBODY	3.85E-02	1.50E+00	2.57E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.67E+01
MN-54	8.81E-02
FE-59	1.11E-02
CO-58	4.06E-01
CO-60	8.64E-01
NI-63	1.61E+00
ZR-95	1.24E-06
NB-95	1.01E-02
TE-125M	2.78E-01

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=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) ========== QUARTER 3 ==========

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	1.24E-04	4.00E-02	3.93E-02	3.96E-02	3.93E-02	5.74E-02	0.00E+00	4.00E-02
TEEN	1.13E-04	3.02E-02	2.95E-02	2.98E-02	2.95E-02	4.21E-02	0.00E+00	3.02E-02
CHILD	1.17E-04	3.35E-02	3.29E-02	3.31E-02	3.28E-02	3.73E-02	0.00E+00	3.36E-02
INFANT	3.98E-08	1.46E-02	1.46E-02	1.46E-02	1.46E-02	1.46E-02	0.00E+00	1.46E-02

=== SITE DOSE LIMIT ANALYSIS ========== QUARTER 3 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 3 - Admin. Any Organ	ADULT	GILLI	5.74E-02	3.75E+00	1.53E+00
Qtr 3 - Admin. Total Body	ADULT	TBODY	4.00E-02	1.13E+00	3.55E+00
Qtr 3 - T.Spc. Any Organ	ADULT	GILLI	5.74E-02	5.00E+00	1.15E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	6.85E+01
CR-51	5.06E-02
MN-54	8.42E-01
CO-58	1.61E+00
CO-60	6.12E+00
ZN-65	4.20E-01
NB-95	2.25E+01
I-132	7.19E-06
I-133	9.23E-05

Qtr 3 - T.Spc. Total Body	ADULT	TBODY	4.00E-02	1.50E+00	2.67E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.82E+01
CR-51	2.89E-04
MN-54	7.52E-02
CO-58	2.56E-01
CO-60	1.03E+00
ZN-65	4.33E-01
NB-95	2.86E-03
I-132	1.92E-05
I-133	4.49E-05

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LIQUID DOSE SUMMARY

Unit 1 & 2

Report for: 2012
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Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) ========== QUARTER 4 ==========

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	4.57E-03	4.12E-02	2.99E-02	3.34E-02	3.11E-02	3.85E-02	0.00E+00	3.96E-02
TEEN	4.68E-03	3.39E-02	2.25E-02	2.59E-02	2.38E-02	2.84E-02	0.00E+00	2.84E-02
CHILD	5.65E-03	3.46E-02	2.50E-02	2.79E-02	2.61E-02	2.71E-02	0.00E+00	2.80E-02
INFANT	3.00E-06	1.11E-02	1.11E-02	1.11E-02	1.11E-02	1.11E-02	0.00E+00	1.11E-02

=== SITE DOSE LIMIT ANALYSIS ========== QUARTER 4 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 4 - Admin. Any Organ	ADULT	LIVER	4.12E-02	3.75E+00	1.10E+00
Qtr 4 - Admin. Total Body	ADULT	TBODY	3.96E-02	1.13E+00	3.52E+00
Qtr 4 - T.Spc. Any Organ	ADULT	LIVER	4.12E-02	5.00E+00	8.24E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	7.27E+01
FE-59	4.42E-01
CO-58	5.98E-01
CO-60	3.33E-01
CS-134	2.59E+01

Qtr 4 - T.Spc. Total Body	ADULT	TBODY	3.96E-02	1.50E+00	2.64E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	7.56E+01
CR-51	2.14E-03
FE-59	1.76E-01
CO-58	1.39E+00
CO-60	7.63E-01
CS-134	2.21E+01

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=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) ========== ANNUAL 2012 =========

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	1.50E-02	1.62E-01	1.56E-01	1.59E-01	1.56E-01	2.75E-01	0.00E+00	1.61E-01
TEEN	1.56E-02	1.23E-01	1.17E-01	1.18E-01	1.17E-01	2.01E-01	0.00E+00	1.21E-01
CHILD	2.03E-02	1.35E-01	1.30E-01	1.31E-01	1.30E-01	1.60E-01	0.00E+00	1.34E-01
INFANT	1.01E-04	5.76E-02	5.76E-02	5.76E-02	5.76E-02	5.77E-02	0.00E+00	5.77E-02

=== SITE DOSE LIMIT ANALYSIS ========== ANNUAL 2012 =========

Annual - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
2012 - Admin. Any Organ	ADULT	GILLI	2.75E-01	7.50E+00	3.67E+00
2012 - Admin. Total Body	ADULT	TBODY	1.61E-01	2.25E+00	7.14E+00
2012 - T.Spc. Any Organ	ADULT	GILLI	2.75E-01	1.00E+01	2.75E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	5.64E+01
CR-51	4.81E-02
MN-54	5.50E-01
FE-59	7.99E-02
CO-58	2.02E+00
CO-60	3.45E+00
NI-63	6.77E-02
ZN-65	1.34E-01
ZR-95	1.00E-03
NB-95	3.64E+01
TE-125M	8.08E-01
I-132	2.29E-06
I-133	2.94E-05
CS-134	2.00E-02

2012 - T.Spc. Total Body	ADULT	TBODY	1.61E-01	3.00E+00	5.35E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.68E+01
CR-51	3.28E-04
MN-54	5.87E-02
FE-59	1.57E-02

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Nuclide	Percentage
CO-58	3.83E-01
CO-60	6.93E-01
NI-63	2.69E-01
ZN-65	1.65E-01
ZR-95	3.66E-07
NB-95	5.53E-03
TE-125M	4.65E-02
I-132	7.33E-06
I-133	1.71E-05
CS-134	1.61E+00

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GASEOUS DOSE SUMMARY

Unit 1 & 2

Report for: 2012
Unit Range - From: 1 To: 2

=== I&P DOSE LIMIT ANALYSIS ========== QUARTER 1 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 1 - Admin. Any Organ	CHILD	BONE	1.64E-01	5.63E+00	2.92E+00
Qtr 1 - Admin. Total Body	CHILD	TBODY	3.39E-02	5.25E+00	6.45E-01
Qtr 1 - T.Spc. Any Organ	CHILD	BONE	1.64E-01	7.50E+00	2.19E+00

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
CO-58	3.10E-05
I-131	7.04E-05

Qtr 1 - T.Spc. Total Body	CHILD	TBODY	3.39E-02	7.50E+00	4.52E-01

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	2.88E+00
C-14	9.71E+01
CO-58	2.64E-04
I-131	1.97E-04

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GASEOUS DOSE SUMMARY

Unit 1 & 2

Report for: 2012
Unit Range - From: 1 To: 2

=== NG DOSE LIMIT ANALYSIS ========== QUARTER 1 ==========

Quarter - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 1 - Admin. Gamma	1.81E-05	3.75E+00	4.82E-04
Qtr 1 - Admin. Beta	1.18E-05	7.50E+00	1.58E-04
Qtr 1 - T.Spc. Gamma	1.81E-05	5.00E+00	3.62E-04

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	1.21E+01
XE-135	4.12E-02
XE-133M	2.17E-02
XE-133	8.79E+01

Qtr 1 - T.Spc. Beta	1.18E-05	1.00E+01	1.18E-04

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	1.60E+00
XE-135	1.98E-02
XE-133M	3.69E-02
XE-133	9.83E+01

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=== I&P DOSE LIMIT ANALYSIS ========== QUARTER 2 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 2 - Admin. Any Organ	CHILD	BONE	1.82E-01	5.63E+00	3.23E+00
Qtr 2 - Admin. Total Body	CHILD	TBODY	3.71E-02	5.25E+00	7.07E-01
Qtr 2 - T.Spc. Any Organ	CHILD	BONE	1.82E-01	7.50E+00	2.42E+00

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
I-131	1.13E-05

Qtr 2 - T.Spc. Total Body	CHILD	TBODY	3.71E-02	7.50E+00	4.95E-01

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	2.02E+00
C-14	9.80E+01
I-131	3.19E-05

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=== NG DOSE LIMIT ANALYSIS ========== QUARTER 2 ==========

Quarter - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 2 - Admin. Gamma	1.79E-03	3.75E+00	4.77E-02
Qtr 2 - Admin. Beta	3.11E-03	7.50E+00	4.15E-02
Qtr 2 - T.Spc. Gamma	1.79E-03	5.00E+00	3.58E-02

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	4.31E-01
XE-133M	1.58E-03
XE-131M	9.94E+01
XE-133	1.22E-01

Qtr 2 - T.Spc. Beta	3.11E-03	1.00E+01	3.11E-02

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	2.15E-02
XE-133M	1.01E-03
XE-131M	9.99E+01
XE-133	5.13E-02

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=== I&P DOSE LIMIT ANALYSIS ========== QUARTER 3 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 3 - Admin. Any Organ	CHILD	BONE	1.56E-01	5.63E+00	2.78E+00
Qtr 3 - Admin. Total Body	CHILD	TBODY	3.21E-02	5.25E+00	6.11E-01
Qtr 3 - T.Spc. Any Organ	CHILD	BONE	1.56E-01	7.50E+00	2.08E+00

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
I-131	1.43E-03
I-132	1.29E-05

Qtr 3 - T.Spc. Total Body	CHILD	TBODY	3.21E-02	7.50E+00	4.28E-01

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	2.59E+00
C-14	9.74E+01
I-131	4.03E-03
I-132	6.16E-05

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=== NG DOSE LIMIT ANALYSIS ========== QUARTER 3 ==========

Quarter - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 3 - Admin. Gamma	1.97E-05	3.75E+00	5.25E-04
Qtr 3 - Admin. Beta	1.07E-05	7.50E+00	1.43E-04
Qtr 3 - T.Spc. Gamma	1.97E-05	5.00E+00	3.94E-04

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	2.80E+01
KR-85M	7.39E-02
XE-135	1.95E+00
XE-133M	1.03E-01
XE-133	6.99E+01

Qtr 3 - T.Spc. Beta	1.07E-05	1.00E+01	1.07E-04

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	4.47E+00
KR-85M	5.36E-02
XE-135	1.13E+00
XE-133M	2.10E-01
XE-133	9.41E+01

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=== I&P DOSE LIMIT ANALYSIS ========== QUARTER 4 ==========

Quarter - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 4 - Admin. Any Organ	CHILD	BONE	1.87E-01	5.63E+00	3.33E+00
Qtr 4 - Admin. Total Body	CHILD	TBODY	3.80E-02	5.25E+00	7.24E-01
Qtr 4 - T.Spc. Any Organ	CHILD	BONE	1.87E-01	7.50E+00	2.50E+00

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
I-131	2.95E-05

Qtr 4 - T.Spc. Total Body	CHILD	TBODY	3.80E-02	7.50E+00	5.07E-01

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.53E+00
C-14	9.85E+01
I-131	8.37E-05

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=== NG DOSE LIMIT ANALYSIS ========== QUARTER 4 ==========

Quarter - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 4 - Admin. Gamma	7.51E-06	3.75E+00	2.00E-04
Qtr 4 - Admin. Beta	1.62E-06	7.50E+00	2.16E-05
Qtr 4 - T.Spc. Gamma	7.51E-06	5.00E+00	1.50E-04

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	8.02E+01
XE-133M	4.13E-01
XE-133	1.94E+01

Qtr 4 - T.Spc. Beta	1.62E-06	1.00E+01	1.62E-05

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	3.23E+01
XE-133M	2.13E+00
XE-133	6.56E+01

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=== I&P DOSE LIMIT ANALYSIS ========== ANNUAL 2012 =========

Annual - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
2012 - Admin. Any Organ	CHILD	BONE	6.90E-01	1.13E+01	6.13E+00
2012 - Admin. Total Body	CHILD	TBODY	1.41E-01	1.05E+01	1.34E+00
2012 - T.Spc. Any Organ	CHILD	BONE	6.90E-01	1.50E+01	4.60E+00

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
CO-58	7.39E-06
I-131	3.53E-04
I-132	2.92E-06

2012 - T.Spc. Total Body	CHILD	TBODY	1.41E-01	1.50E+01	9.40E-01

Receptor: 5 Composite Crit. Receptor - IP
Distance: 800 (meters) Compass Point: SSE
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	2.22E+00
C-14	9.78E+01
CO-58	6.33E-05
I-131	9.94E-04
I-132	1.40E-05

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 1 & 2

Report for: 2012
Unit Range - From: 1 To: 2

=== NG DOSE LIMIT ANALYSIS ========== ANNUAL 2012 =========

Annual - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
2012 - Admin. Gamma	1.83E-03	7.50E+00	2.45E-02
2012 - Admin. Beta	3.14E-03	1.50E+01	2.09E-02
2012 - T.Spc. Gamma	1.83E-03	1.00E+01	1.83E-02

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	1.17E+00
KR-85M	7.93E-04
XE-135	2.13E-02
XE-133M	4.55E-03
XE-131M	9.70E+01
XE-133	1.82E+00

2012 - T.Spc. Beta	3.14E-03	2.00E+01	1.57E-02

Receptor: 4 Composite Crit. Receptor - NG
Distance: 800 (meters) Compass Point: SSE

Nuclide	Percentage
AR-41	5.92E-02
KR-85M	1.83E-04
XE-135	3.93E-03
XE-133M	2.96E-03
XE-131M	9.92E+01
XE-133	7.76E-01

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

Unit 1 & 2

Report for: 2012
Unit Range - From: 1 To: 2

=== MAXIMUM DOSE ANALYSIS ========== ANNUAL 2012 =========

Dose Type	Age Group	Organ	Dose (mrem)
Any Organ	CHILD	BONE	7.10E-01

Liquid Receptor: 0 Liquid Receptor
Gaseous Receptor: 5 Composite Crit. Receptor - IP
Distance: 0.00 (meters) Compass Point: NA

Liquid Dose: 2.03E-02 % of Total: 2.85E+00
Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
CR-51	0.00E+00
MN-54	0.00E+00
FE-59	1.74E-01
CO-58	0.00E+00
CO-60	0.00E+00
NI-63	8.69E+01
ZN-65	8.46E-01
ZR-95	1.86E-05
NB-95	1.74E-01
TE-125M	3.85E+00
I-132	8.24E-05
I-133	3.60E-04
CS-134	8.09E+00

Gaseous Dose: 6.90E-01 % of Total: 9.72E+01
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
CO-58	7.39E-06
I-131	3.53E-04
I-132	2.92E-06

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

Unit 1 & 2

=== MAXIMUM DOSE ANALYSIS ========== ANNUAL 2012 =========

Dose Type	Age Group	Organ	Dose (mrem)
Total Body	CHILD	TBODY	2.75E-01

Liquid Receptor: 0 Liquid Receptor
Gaseous Receptor: 5 Composite Crit. Receptor - IP
Distance: 0.00 (meters) Compass Point: NA

Liquid Dose: 1.34E-01 % of Total: 4.86E+01
Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.73E+01
CR-51	4.34E-04
MN-54	7.59E-02
FE-59	2.12E-02
CO-58	5.04E-01
CO-60	9.13E-01
NI-63	4.48E-01
ZN-65	2.13E-01
ZR-95	5.51E-07
NB-95	7.35E-03
TE-125M	7.78E-02
I-132	1.06E-05
I-133	2.55E-05
CS-134	4.25E-01

Gaseous Dose: 1.41E-01 % of Total: 5.13E+01
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	2.22E+00
C-14	9.78E+01
CO-58	6.33E-05
I-131	9.94E-04
I-132	1.40E-05

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

=== RELEASE DATA ==========

Total Release Duration (minutes)	5.609E+05
Total Release Volume (cf)	6.508E+10
Average Release Flowrate (cfm)	1.160E+05
Average Period Flowrate (cfm)	1.235E+05

=== NUCLIDE DATA ==========

Nuclide	uCi	Average uCi/cc	EC Ratio	EC
AR-41	2.31E+04	1.25E-11	1.25E-03	1.00E-08
KR-85M	2.04E+02	1.11E-13	1.11E-06	1.00E-07
XE-131M	1.97E+08	1.07E-07	5.33E-02	2.00E-06
XE-133M	2.27E+03	1.23E-12	2.06E-06	6.00E-07
XE-133	8.69E+05	4.71E-10	9.43E-04	5.00E-07
XE-135	1.76E+03	9.53E-13	1.36E-05	7.00E-08
F&AG	1.97E+08	1.07E-07	5.55E-02	
I-131	5.51E+00	2.99E-15	1.50E-05	2.00E-10
Iodine	5.51E+00	2.99E-15	1.50E-05	
C-14	3.98E+06	2.16E-09	7.20E-01	3.00E-09
Other	3.98E+06	2.16E-09	7.20E-01	
H-3	1.76E+07	9.56E-09	9.56E-02	1.00E-07
H-3	1.76E+07	9.56E-09	9.56E-02	
Total	2.19E+08	1.19E-07	8.71E-01	

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

=== MAXIMUM I&P DOSE FOR PERIOD ===

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	CHILD	BONE	3.24E-01	31-day	2.25E-01	1.44E+02
					Quarter	5.63E+00	5.76E+00
					Annual	1.13E+01	2.88E+00
T.Spec	Any Organ	CHILD	BONE	3.24E-01	31-day	3.00E-01	1.08E+02
					Quarter	7.50E+00	4.32E+00
					Annual	1.50E+01	2.16E+00

Receptor.....: 5 Composite Crit. Receptor - IP
Distance (meters).....: 800
Compass Point.....: SSE
Critical Pathway.....: 2 Vegetation (VEG)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
I-131	3.01E-04

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

=== PERIOD ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
AGPD	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	0.00E+00	1.13E-08
AINHL	1.03E-03	3.74E-04	3.75E-04	3.74E-04	3.74E-04	3.74E-04	0.00E+00	3.74E-04
AVEG	5.09E-02	1.05E-02	1.05E-02	1.05E-02	1.05E-02	1.05E-02	0.00E+00	1.05E-02
ACMEAT	1.89E-02	3.82E-03	3.83E-03	3.82E-03	3.82E-03	3.82E-03	0.00E+00	3.82E-03
ACMILK	2.06E-02	4.23E-03	4.32E-03	4.23E-03	4.23E-03	4.23E-03	0.00E+00	4.23E-03
TGPD	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	0.00E+00	1.13E-08
TINHL	1.47E-03	4.58E-04	4.59E-04	4.58E-04	4.58E-04	4.58E-04	0.00E+00	4.58E-04
TVEG	8.22E-02	1.69E-02	1.69E-02	1.69E-02	1.69E-02	1.69E-02	0.00E+00	1.69E-02
TCMEAT	1.59E-02	3.21E-03	3.22E-03	3.21E-03	3.21E-03	3.21E-03	0.00E+00	3.21E-03
TCMILK	3.80E-02	7.74E-03	7.89E-03	7.74E-03	7.74E-03	7.74E-03	0.00E+00	7.74E-03
CGPD	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	0.00E+00	1.13E-08
CINHL	2.04E-03	5.42E-04	5.44E-04	5.42E-04	5.42E-04	5.42E-04	0.00E+00	5.42E-04
CVEG	1.98E-01	4.03E-02	4.04E-02	4.03E-02	4.03E-02	4.03E-02	0.00E+00	4.03E-02
CCMEAT	3.00E-02	6.04E-03	6.05E-03	6.05E-03	6.04E-03	6.04E-03	0.00E+00	6.04E-03
CCMILK	9.36E-02	1.89E-02	1.92E-02	1.89E-02	1.89E-02	1.89E-02	0.00E+00	1.89E-02
IGPD	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	1.13E-08	0.00E+00	1.13E-08
IINHL	1.50E-03	3.94E-04	3.95E-04	3.94E-04	3.94E-04	3.94E-04	0.00E+00	3.94E-04
ICMILK	1.83E-01	3.94E-02	4.01E-02	3.94E-02	3.94E-02	3.94E-02	0.00E+00	3.94E-02
TOTALS								
ADULT	9.14E-02	1.89E-02	1.90E-02	1.89E-02	1.89E-02	1.89E-02	0.00E+00	1.89E-02
TEEN	1.38E-01	2.83E-02	2.85E-02	2.83E-02	2.83E-02	2.83E-02	0.00E+00	2.83E-02
CHILD	3.24E-01	6.58E-02	6.61E-02	6.58E-02	6.58E-02	6.58E-02	0.00E+00	6.58E-02
INFANT	1.85E-01	3.98E-02	4.05E-02	3.98E-02	3.98E-02	3.98E-02	0.00E+00	3.98E-02

=== AGE GROUP / PATHWAY DESCRIPTIONS ==========

Abbreviation	Age Group	Pathway
AGPD	ADULT	Ground Plane Deposition (GPD)
AINHL	ADULT	Inhalation (INHL)
AVEG	ADULT	Vegetation (VEG)
ACMEAT	ADULT	Grs/Cow/Meat (CMEAT)
ACMILK	ADULT	Grs/Cow/Milk (CMILK)
TGPD	TEEN	Ground Plane Deposition (GPD)
TINHL	TEEN	Inhalation (INHL)
TVEG	TEEN	Vegetation (VEG)
TCMEAT	TEEN	Grs/Cow/Meat (CMEAT)
TCMILK	TEEN	Grs/Cow/Milk (CMILK)
CGPD	CHILD	Ground Plane Deposition (GPD)
CINHL	CHILD	Inhalation (INHL)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

=== AGE GROUP / PATHWAY DESCRIPTIONS ==========

Abbreviation	Age Group	Pathway
CVEG	CHILD	Vegetation (VEG)
CCMEAT	CHILD	Grs/Cow/Meat (CMEAT)
CCMILK	CHILD	Grs/Cow/Milk (CMILK)
IGPD	INFANT	Ground Plane Deposition (GPD)
IINHL	INFANT	Inhalation (INHL)
ICMILK	INFANT	Grs/Cow/Milk (CMILK)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

=== MAXIMUM NG DOSE FOR PERIOD ==========

Limit Type	Dose Type	Dose (mrad)	Limit Period	Limit (mrad)	Percent of Limit
Admin	Gamma	1.81E-03	31-day	1.50E-01	1.21E+00
			Quarter	3.75E+00	4.82E-02
			Annual	7.50E+00	2.41E-02
Admin	Beta	3.12E-03	31-day	3.00E-01	1.04E+00
			Quarter	7.50E+00	4.17E-02
			Annual	1.50E+01	2.08E-02
T.Spec	Gamma	1.81E-03	31-day	2.00E-01	9.05E-01
			Quarter	5.00E+00	3.62E-02
			Annual	1.00E+01	1.81E-02

Receptor.....: 4 Composite Crit. Receptor - NG
Distance (meters).....: 800
Compass Point.....: SSE
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	6.89E-01
KR-85M	8.04E-04
XE-131M	9.83E+01
XE-133M	2.38E-03
XE-133	9.83E-01
XE-135	1.08E-02

T.Spec	Beta	3.12E-03	31-day	4.00E-01	7.81E-01
			Quarter	1.00E+01	3.12E-02
			Annual	2.00E+01	1.56E-02

Receptor.....: 4 Composite Crit. Receptor - NG
Distance (meters).....: 800
Compass Point.....: SSE
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	3.46E-02
KR-85M	1.83E-04
XE-131M	9.95E+01

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
XE-133M	1.53E-03
XE-133	4.16E-01
XE-135	1.97E-03

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 2

=== RELEASE DATA ==========

Total Release Duration (minutes)	5.704E+05
Total Release Volume (cf)	7.016E+10
Average Release Flowrate (cfm)	1.230E+05
Average Period Flowrate (cfm)	1.331E+05

=== NUCLIDE DATA ==========

Nuclide	uCi	Average uCi/cc	EC Ratio	EC
AR-41	1.66E+04	8.35E-12	8.35E-04	1.00E-08
XE-133M	2.13E+03	1.07E-12	1.79E-06	6.00E-07
XE-133	7.58E+05	3.81E-10	7.63E-04	5.00E-07
XE-135	1.76E+03	8.84E-13	1.26E-05	7.00E-08
F&AG	7.78E+05	3.92E-10	1.61E-03	
I-131	8.22E+00	4.14E-15	2.07E-05	2.00E-10
I-132	1.13E+02	5.68E-14	2.84E-06	2.00E-08
Iodine	1.21E+02	6.10E-14	2.35E-05	
C-14	4.49E+06	2.26E-09	7.53E-01	3.00E-09
Other	4.49E+06	2.26E-09	7.53E-01	
H-3	3.80E+07	1.91E-08	1.91E-01	1.00E-07
H-3	3.80E+07	1.91E-08	1.91E-01	
CO-58	1.13E+00	5.67E-16	5.67E-07	1.00E-09
P>=8	1.13E+00	5.67E-16	5.67E-07	
Total	4.32E+07	2.18E-08	9.46E-01	

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 2

=== MAXIMUM I&P DOSE FOR PERIOD ===

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	CHILD	BONE	3.66E-01	31-day	2.25E-01	1.63E+02
					Quarter	5.63E+00	6.50E+00
					Annual	1.13E+01	3.25E+00
T.Spec	Any Organ	CHILD	BONE	3.66E-01	31-day	3.00E-01	1.22E+02
					Quarter	7.50E+00	4.88E+00
					Annual	1.50E+01	2.44E+00

Receptor.....: 5 Composite Crit. Receptor - IP
Distance (meters).....: 800
Compass Point.....: SSE
Critical Pathway.....: 2 Vegetation (VEG)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
CO-58	1.39E-05
I-131	3.98E-04
I-132	5.51E-06

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 2

=== PERIOD ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
AGPD	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	0.00E+00	8.46E-08
AINHL	1.16E-03	6.07E-04	6.09E-04	6.07E-04	6.07E-04	6.07E-04	0.00E+00	6.07E-04
AVEG	5.74E-02	1.22E-02	1.22E-02	1.22E-02	1.22E-02	1.22E-02	0.00E+00	1.22E-02
ACMEAT	2.13E-02	4.36E-03	4.37E-03	4.36E-03	4.36E-03	4.36E-03	0.00E+00	4.36E-03
ACMILK	2.32E-02	4.88E-03	5.02E-03	4.88E-03	4.88E-03	4.88E-03	0.00E+00	4.88E-03
TGPD	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	0.00E+00	8.46E-08
TINHL	1.66E-03	7.04E-04	7.06E-04	7.04E-04	7.04E-04	7.04E-04	0.00E+00	7.04E-04
TVEG	9.28E-02	1.94E-02	1.95E-02	1.94E-02	1.94E-02	1.94E-02	0.00E+00	1.94E-02
TCMEAT	1.80E-02	3.66E-03	3.66E-03	3.66E-03	3.66E-03	3.66E-03	0.00E+00	3.66E-03
TCMILK	4.29E-02	8.88E-03	9.10E-03	8.88E-03	8.88E-03	8.88E-03	0.00E+00	8.88E-03
CGPD	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	0.00E+00	8.46E-08
CINHL	2.30E-03	7.77E-04	7.79E-04	7.77E-04	7.77E-04	7.77E-04	0.00E+00	7.77E-04
CVEG	2.24E-01	4.61E-02	4.61E-02	4.61E-02	4.61E-02	4.61E-02	0.00E+00	4.61E-02
CCMEAT	3.39E-02	6.86E-03	6.86E-03	6.86E-03	6.86E-03	6.86E-03	0.00E+00	6.86E-03
CCMILK	1.06E-01	2.15E-02	2.20E-02	2.15E-02	2.15E-02	2.15E-02	0.00E+00	2.15E-02
IGPD	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	8.46E-08	0.00E+00	8.46E-08
IINHL	1.70E-03	5.39E-04	5.41E-04	5.39E-04	5.39E-04	5.39E-04	0.00E+00	5.39E-04
ICMILK	2.07E-01	4.48E-02	4.59E-02	4.48E-02	4.48E-02	4.48E-02	0.00E+00	4.48E-02
TOTALS								
ADULT	1.03E-01	2.20E-02	2.22E-02	2.20E-02	2.20E-02	2.20E-02	0.00E+00	2.20E-02
TEEN	1.55E-01	3.27E-02	3.29E-02	3.27E-02	3.27E-02	3.27E-02	0.00E+00	3.27E-02
CHILD	3.66E-01	7.53E-02	7.58E-02	7.53E-02	7.53E-02	7.53E-02	0.00E+00	7.53E-02
INFANT	2.08E-01	4.54E-02	4.64E-02	4.54E-02	4.54E-02	4.54E-02	0.00E+00	4.54E-02

=== AGE GROUP / PATHWAY DESCRIPTIONS ==========

Abbreviation	Age Group	Pathway
AGPD	ADULT	Ground Plane Deposition (GPD)
AINHL	ADULT	Inhalation (INHL)
AVEG	ADULT	Vegetation (VEG)
ACMEAT	ADULT	Grs/Cow/Meat (CMEAT)
ACMILK	ADULT	Grs/Cow/Milk (CMILK)
TGPD	TEEN	Ground Plane Deposition (GPD)
TINHL	TEEN	Inhalation (INHL)
TVEG	TEEN	Vegetation (VEG)
TCMEAT	TEEN	Grs/Cow/Meat (CMEAT)
TCMILK	TEEN	Grs/Cow/Milk (CMILK)
CGPD	CHILD	Ground Plane Deposition (GPD)
CINHL	CHILD	Inhalation (INHL)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 2

=== AGE GROUP / PATHWAY DESCRIPTIONS ==========

Abbreviation	Age Group	Pathway
CVEG	CHILD	Vegetation (VEG)
CCMEAT	CHILD	Grs/Cow/Meat (CMEAT)
CCMILK	CHILD	Grs/Cow/Milk (CMILK)
IGPD	INFANT	Ground Plane Deposition (GPD)
IINHL	INFANT	Inhalation (INHL)
ICMILK	INFANT	Grs/Cow/Milk (CMILK)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 2

=== MAXIMUM NG DOSE FOR PERIOD ===

Limit Type	Dose Type	Dose (mrad)	Limit Period	Limit (mrad)	Percent of Limit
Admin	Gamma	2.47E-05	31-day	1.50E-01	1.65E-02
			Quarter	3.75E+00	6.59E-04
			Annual	7.50E+00	3.29E-04
Admin	Beta	1.22E-05	31-day	3.00E-01	4.07E-03
			Quarter	7.50E+00	1.63E-04
			Annual	1.50E+01	8.15E-05
T.Spec	Gamma	2.47E-05	31-day	2.00E-01	1.24E-02
			Quarter	5.00E+00	4.94E-04
			Annual	1.00E+01	2.47E-04

Receptor.....: 4 Composite Crit. Receptor - NG
Distance (meters).....: 800
Compass Point.....: SSE
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	3.62E+01
XE-133M	1.63E-01
XE-133	6.28E+01
XE-135	7.92E-01

T.Spec	Beta	1.22E-05	31-day	4.00E-01	3.06E-03
			Quarter	1.00E+01	1.22E-04
			Annual	2.00E+01	6.11E-05

Receptor.....: 4 Composite Crit. Receptor - NG
Distance (meters).....: 800
Compass Point.....: SSE
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	6.35E+00
XE-133M	3.67E-01
XE-133	9.28E+01
XE-135	5.04E-01

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 1

=== RELEASE DATA ==========
Total Release Duration (minutes)..... 5.422E+05
Total Undiluted Volume Released (gallons)..... NA
Average Undiluted Flowrate (gpm)..... NA

Total Dilution Volume (gallons)..... NA
Average Dilution Flowrate (gpm)..... NA

=== NUCLIDE DATA ==========

Nuclide	uCi
CO-57	1.32E+01
SB-122	6.87E+00
SB-124	2.29E+01
SB-125	2.92E+02
CR-51	5.66E+02
MN-54	1.55E+02
FE-59	3.69E+01
CO-58	4.19E+03
CO-60	2.68E+03
ZN-65	1.09E+01
ZR-95	1.40E+01
NB-95	9.11E+01
TE-125M	2.97E+02
I-132	2.31E+00
I-133	1.36E+00
CS-134	6.10E+00
Gamma	8.39E+03
XE-131M	4.92E+01
XE-133M	1.01E+01
XE-133	1.47E+03
XE-135	3.87E+00
D&EG	1.53E+03
H-3	1.34E+09
NI-63	5.66E+02

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05

=== NUCLIDE DATA ==========

Nuclide	uCi
---	---
Beta	1.34E+09
---	---
Total	1.34E+09

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 1
Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
APWtr	2.28E-05	2.17E-02	2.17E-02	2.17E-02	2.17E-02	2.17E-02	0.00E+00	2.17E-02
AFWFSp	7.48E-03	5.91E-02	5.61E-02	5.79E-02	5.62E-02	1.16E-01	0.00E+00	5.86E-02
TPWtr	2.16E-05	1.53E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02	0.00E+00	1.53E-02
TFWFSp	7.76E-03	4.61E-02	4.31E-02	4.38E-02	4.32E-02	8.53E-02	0.00E+00	4.51E-02
CPWtr	6.57E-05	2.94E-02	2.93E-02	2.93E-02	2.93E-02	2.94E-02	0.00E+00	2.94E-02
CFWFSp	1.01E-02	3.83E-02	3.57E-02	3.62E-02	3.58E-02	5.07E-02	0.00E+00	3.74E-02
IPWtr	5.07E-05	2.88E-02	2.88E-02	2.88E-02	2.88E-02	2.88E-02	0.00E+00	2.88E-02
TOTALS								
ADULT	7.51E-03	8.08E-02	7.78E-02	7.96E-02	7.79E-02	1.38E-01	0.00E+00	8.03E-02
TEEN	7.78E-03	6.14E-02	5.84E-02	5.91E-02	5.85E-02	1.01E-01	0.00E+00	6.04E-02
CHILD	1.01E-02	6.77E-02	6.51E-02	6.56E-02	6.51E-02	8.01E-02	0.00E+00	6.68E-02
INFANT	5.07E-05	2.88E-02	2.88E-02	2.88E-02	2.88E-02	2.88E-02	0.00E+00	2.88E-02

=== AGE GROUP / PATHWAY DESCRIPTIONS ==========

Abbreviation	Age Group	Pathway
APWtr	ADULT	Potable Water (PWtr)
AFWFSp	ADULT	Fresh Water Fish - Sport (FFSP)
TPWtr	TEEN	Potable Water (PWtr)
TFWFSp	TEEN	Fresh Water Fish - Sport (FFSP)
CPWtr	CHILD	Potable Water (PWtr)
CFWFSp	CHILD	Fresh Water Fish - Sport (FFSP)
IPWtr	INFANT	Potable Water (PWtr)

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 1
Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) ==========

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT								
H-3	0.00E+00	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	0.00E+00	7.77E-02
CR-51	0.00E+00	0.00E+00	1.57E-07	5.80E-08	3.49E-07	6.62E-05	0.00E+00	2.63E-07
MN-54	0.00E+00	2.47E-04	0.00E+00	7.35E-05	0.00E+00	7.57E-04	0.00E+00	4.72E-05
FE-59	1.40E-05	3.30E-05	0.00E+00	0.00E+00	9.21E-06	1.10E-04	0.00E+00	1.26E-05
CO-58	0.00E+00	1.37E-04	0.00E+00	0.00E+00	0.00E+00	2.78E-03	0.00E+00	3.08E-04
CO-60	0.00E+00	2.52E-04	0.00E+00	0.00E+00	0.00E+00	4.74E-03	0.00E+00	5.57E-04
NI-63	6.44E-03	4.47E-04	0.00E+00	0.00E+00	0.00E+00	9.32E-05	0.00E+00	2.16E-04
ZN-65	9.22E-05	2.93E-04	0.00E+00	1.96E-04	0.00E+00	1.85E-04	0.00E+00	1.33E-04
ZR-95	1.35E-09	4.34E-10	0.00E+00	6.82E-10	0.00E+00	1.38E-06	0.00E+00	2.94E-10
NB-95	1.48E-05	8.25E-06	0.00E+00	8.16E-06	0.00E+00	5.01E-02	0.00E+00	4.44E-06
TE-125M	2.78E-04	1.01E-04	8.37E-05	1.13E-03	0.00E+00	1.11E-03	0.00E+00	3.73E-05
I-132	6.29E-09	1.68E-08	5.88E-07	2.68E-08	0.00E+00	3.16E-09	0.00E+00	5.88E-09
I-133	2.59E-08	4.51E-08	6.63E-06	7.87E-08	0.00E+00	4.05E-08	0.00E+00	1.37E-08
CS-134	6.63E-04	1.58E-03	0.00E+00	5.10E-04	1.69E-04	2.76E-05	0.00E+00	1.29E-03
TEEN								
H-3	0.00E+00	5.83E-02	5.83E-02	5.83E-02	5.83E-02	5.83E-02	0.00E+00	5.83E-02
CR-51	0.00E+00	0.00E+00	1.51E-07	5.95E-08	3.87E-07	4.56E-05	0.00E+00	2.71E-07
MN-54	0.00E+00	2.43E-04	0.00E+00	7.25E-05	0.00E+00	4.98E-04	0.00E+00	4.82E-05
FE-59	1.45E-05	3.37E-05	0.00E+00	0.00E+00	1.06E-05	7.98E-05	0.00E+00	1.30E-05
CO-58	0.00E+00	1.36E-04	0.00E+00	0.00E+00	0.00E+00	1.88E-03	0.00E+00	3.14E-04
CO-60	0.00E+00	2.52E-04	0.00E+00	0.00E+00	0.00E+00	3.29E-03	0.00E+00	5.69E-04
NI-63	6.68E-03	4.72E-04	0.00E+00	0.00E+00	0.00E+00	7.51E-05	0.00E+00	2.26E-04
ZN-65	8.36E-05	2.90E-04	0.00E+00	1.86E-04	0.00E+00	1.23E-04	0.00E+00	1.35E-04
ZR-95	1.39E-09	4.38E-10	0.00E+00	6.43E-10	0.00E+00	1.01E-06	0.00E+00	3.01E-10
NB-95	1.49E-05	8.29E-06	0.00E+00	8.03E-06	0.00E+00	3.54E-02	0.00E+00	4.56E-06
TE-125M	3.03E-04	1.09E-04	8.47E-05	0.00E+00	0.00E+00	8.94E-04	0.00E+00	4.05E-05
I-132	6.57E-09	1.72E-08	5.79E-07	2.71E-08	0.00E+00	7.49E-09	0.00E+00	6.17E-09
I-133	2.79E-08	4.73E-08	6.61E-06	8.30E-08	0.00E+00	3.58E-08	0.00E+00	1.44E-08
CS-134	6.79E-04	1.60E-03	0.00E+00	5.08E-04	1.94E-04	1.99E-05	0.00E+00	7.42E-04
CHILD								
H-3	0.00E+00	6.50E-02	6.50E-02	6.50E-02	6.50E-02	6.50E-02	0.00E+00	6.50E-02
CR-51	0.00E+00	0.00E+00	1.61E-07	4.40E-08	2.94E-07	1.54E-05	0.00E+00	2.90E-07
MN-54	0.00E+00	1.90E-04	0.00E+00	5.34E-05	0.00E+00	1.60E-04	0.00E+00	5.07E-05
FE-59	1.76E-05	2.85E-05	0.00E+00	0.00E+00	8.25E-06	2.96E-05	0.00E+00	1.42E-05
CO-58	0.00E+00	1.10E-04	0.00E+00	0.00E+00	0.00E+00	6.41E-04	0.00E+00	3.36E-04
CO-60	0.00E+00	2.07E-04	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	6.09E-04
NI-63	8.80E-03	4.71E-04	0.00E+00	0.00E+00	0.00E+00	3.17E-05	0.00E+00	2.99E-04

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) ==========

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ZN-65	8.57E-05	2.28E-04	0.00E+00	1.44E-04	0.00E+00	4.01E-05	0.00E+00	1.42E-04
ZR-95	1.88E-09	4.13E-10	0.00E+00	5.91E-10	0.00E+00	4.31E-07	0.00E+00	3.68E-10
NB-95	1.76E-05	6.86E-06	0.00E+00	6.45E-06	0.00E+00	1.27E-02	0.00E+00	4.90E-06
TE-125M	3.90E-04	1.06E-04	1.09E-04	0.00E+00	0.00E+00	3.76E-04	0.00E+00	5.19E-05
I-132	8.35E-09	1.53E-08	7.12E-07	2.35E-08	0.00E+00	1.81E-08	0.00E+00	7.05E-09
I-133	3.64E-08	4.50E-08	8.37E-06	7.50E-08	0.00E+00	1.82E-08	0.00E+00	1.70E-08
CS-134	8.19E-04	1.34E-03	0.00E+00	4.17E-04	1.50E-04	7.25E-06	0.00E+00	2.84E-04
INFANT								
H-3	0.00E+00	2.88E-02	2.88E-02	2.88E-02	2.88E-02	2.88E-02	0.00E+00	2.88E-02
CR-51	0.00E+00	0.00E+00	7.14E-10	1.56E-10	1.39E-09	3.19E-08	0.00E+00	1.09E-09
MN-54	0.00E+00	4.22E-07	0.00E+00	9.36E-08	0.00E+00	1.55E-07	0.00E+00	9.57E-08
FE-59	1.56E-07	2.72E-07	0.00E+00	0.00E+00	8.05E-08	1.30E-07	0.00E+00	1.07E-07
CO-58	0.00E+00	2.07E-06	0.00E+00	0.00E+00	0.00E+00	5.16E-06	0.00E+00	5.16E-06
CO-60	0.00E+00	3.98E-06	0.00E+00	0.00E+00	0.00E+00	9.46E-06	0.00E+00	9.39E-06
NI-63	4.92E-05	3.04E-06	0.00E+00	0.00E+00	0.00E+00	1.51E-07	0.00E+00	1.71E-06
ZN-65	2.75E-08	9.44E-08	0.00E+00	4.58E-08	0.00E+00	7.97E-08	0.00E+00	4.35E-08
ZR-95	3.95E-10	9.63E-11	0.00E+00	1.04E-10	0.00E+00	4.80E-08	0.00E+00	6.83E-11
NB-95	5.25E-10	2.16E-10	0.00E+00	1.55E-10	0.00E+00	1.82E-07	0.00E+00	1.25E-10
TE-125M	9.50E-07	3.18E-07	3.20E-07	0.00E+00	0.00E+00	4.53E-07	0.00E+00	1.28E-07
I-132	5.26E-10	1.07E-09	5.01E-08	1.19E-09	0.00E+00	8.66E-10	0.00E+00	3.80E-10
I-133	2.34E-09	3.40E-09	6.19E-07	4.00E-09	0.00E+00	5.76E-10	0.00E+00	9.96E-10
CS-134	3.16E-07	5.89E-07	0.00E+00	1.52E-07	6.21E-08	1.60E-09	0.00E+00	5.94E-08

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 1
Receptor.....: 0 Liquid Receptor

=== MAXIMUM DOSE FOR PERIOD ==========

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	ADULT	GILLI	1.38E-01	31-day	1.50E-01	9.18E+01
					Quarter	3.75E+00	3.67E+00
					Annual	7.50E+00	1.84E+00
Admin	Tot Body	ADULT	TBODY	8.03E-02	31-day	4.50E-02	1.78E+02
					Quarter	1.13E+00	7.14E+00
					Annual	2.25E+00	3.57E+00
T.Spec	Any Organ	ADULT	GILLI	1.38E-01	31-day	2.00E-01	6.88E+01
					Quarter	5.00E+00	2.75E+00
					Annual	1.00E+01	1.38E+00

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	5.64E+01
CR-51	4.81E-02
MN-54	5.50E-01
FE-59	7.99E-02
CO-58	2.02E+00
CO-60	3.45E+00
NI-63	6.77E-02
ZN-65	1.34E-01
ZR-95	1.00E-03
NB-95	3.64E+01
TE-125M	8.08E-01
I-132	2.29E-06
I-133	2.94E-05
CS-134	2.00E-02

T.Spec	Tot Body	ADULT	TBODY	8.03E-02	31-day	6.00E-02	1.34E+02
					Quarter	1.50E+00	5.35E+00
					Annual	3.00E+00	2.68E+00

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.68E+01
CR-51	3.28E-04
MN-54	5.87E-02
FE-59	1.57E-02
CO-58	3.83E-01
CO-60	6.93E-01
NI-63	2.69E-01
ZN-65	1.65E-01
ZR-95	3.66E-07
NB-95	5.53E-03
TE-125M	4.65E-02
I-132	7.33E-06
I-133	1.71E-05
CS-134	1.61E+00

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 2

=== RELEASE DATA ==========
Total Release Duration (minutes)..... 5.422E+05
Total Undiluted Volume Released (gallons)..... NA
Average Undiluted Flowrate (gpm)..... NA

Total Dilution Volume (gallons)..... NA
Average Dilution Flowrate (gpm)..... NA

=== NUCLIDE DATA ==========

Nuclide	uCi
CO-57	1.32E+01
SB-122	6.87E+00
SB-124	2.29E+01
SB-125	2.92E+02
CR-51	5.66E+02
MN-54	1.55E+02
FE-59	3.69E+01
CO-58	4.19E+03
CO-60	2.68E+03
ZN-65	1.09E+01
ZR-95	1.40E+01
NB-95	9.11E+01
TE-125M	2.97E+02
I-132	2.31E+00
I-133	1.36E+00
CS-134	6.10E+00
---	---
Gamma	8.39E+03
XE-131M	4.92E+01
XE-133M	1.01E+01
XE-133	1.47E+03
XE-135	3.87E+00
---	---
D&EG	1.53E+03
H-3	1.34E+09
NI-63	5.66E+02

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05

=== NUCLIDE DATA ==========

Nuclide	uCi
Beta	1.34E+09
Total	1.34E+09

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 2
Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
APWtr	2.28E-05	2.17E-02	2.17E-02	2.17E-02	2.17E-02	2.17E-02	0.00E+00	2.17E-02
AFWFSp	7.48E-03	5.91E-02	5.61E-02	5.79E-02	5.62E-02	1.16E-01	0.00E+00	5.86E-02
TPWtr	2.16E-05	1.53E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02	0.00E+00	1.53E-02
TFWFSp	7.76E-03	4.61E-02	4.31E-02	4.38E-02	4.32E-02	8.53E-02	0.00E+00	4.51E-02
CPWtr	6.57E-05	2.94E-02	2.93E-02	2.93E-02	2.93E-02	2.94E-02	0.00E+00	2.94E-02
CFWFSp	1.01E-02	3.83E-02	3.57E-02	3.62E-02	3.58E-02	5.07E-02	0.00E+00	3.74E-02
IPWtr	5.07E-05	2.88E-02	2.88E-02	2.88E-02	2.88E-02	2.88E-02	0.00E+00	2.88E-02
TOTALS								
ADULT	7.51E-03	8.08E-02	7.78E-02	7.96E-02	7.79E-02	1.38E-01	0.00E+00	8.03E-02
TEEN	7.78E-03	6.14E-02	5.84E-02	5.91E-02	5.85E-02	1.01E-01	0.00E+00	6.04E-02
CHILD	1.01E-02	6.77E-02	6.51E-02	6.56E-02	6.51E-02	8.01E-02	0.00E+00	6.68E-02
INFANT	5.07E-05	2.88E-02	2.88E-02	2.88E-02	2.88E-02	2.88E-02	0.00E+00	2.88E-02

=== AGE GROUP / PATHWAY DESCRIPTIONS ==========

Abbreviation	Age Group	Pathway
APWtr	ADULT	Potable Water (PWtr)
AFWFSp	ADULT	Fresh Water Fish - Sport (FFSP)
TPWtr	TEEN	Potable Water (PWtr)
TFWFSp	TEEN	Fresh Water Fish - Sport (FFSP)
CPWtr	CHILD	Potable Water (PWtr)
CFWFSp	CHILD	Fresh Water Fish - Sport (FFSP)
IPWtr	INFANT	Potable Water (PWtr)

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 2
Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) ==========

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT								
H-3	0.00E+00	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	0.00E+00	7.77E-02
CR-51	0.00E+00	0.00E+00	1.57E-07	5.80E-08	3.49E-07	6.62E-05	0.00E+00	2.63E-07
MN-54	0.00E+00	2.47E-04	0.00E+00	7.35E-05	0.00E+00	7.57E-04	0.00E+00	4.72E-05
FE-59	1.40E-05	3.30E-05	0.00E+00	0.00E+00	9.21E-06	1.10E-04	0.00E+00	1.26E-05
CO-58	0.00E+00	1.37E-04	0.00E+00	0.00E+00	0.00E+00	2.78E-03	0.00E+00	3.08E-04
CO-60	0.00E+00	2.52E-04	0.00E+00	0.00E+00	0.00E+00	4.74E-03	0.00E+00	5.57E-04
NI-63	6.44E-03	4.47E-04	0.00E+00	0.00E+00	0.00E+00	9.32E-05	0.00E+00	2.16E-04
ZN-65	9.22E-05	2.93E-04	0.00E+00	1.96E-04	0.00E+00	1.85E-04	0.00E+00	1.33E-04
ZR-95	1.35E-09	4.34E-10	0.00E+00	6.82E-10	0.00E+00	1.38E-06	0.00E+00	2.94E-10
NB-95	1.48E-05	8.25E-06	0.00E+00	8.16E-06	0.00E+00	5.01E-02	0.00E+00	4.44E-06
TE-125M	2.78E-04	1.01E-04	8.37E-05	1.13E-03	0.00E+00	1.11E-03	0.00E+00	3.73E-05
I-132	6.29E-09	1.68E-08	5.88E-07	2.68E-08	0.00E+00	3.16E-09	0.00E+00	5.88E-09
I-133	2.59E-08	4.51E-08	6.63E-06	7.87E-08	0.00E+00	4.05E-08	0.00E+00	1.37E-08
CS-134	6.63E-04	1.58E-03	0.00E+00	5.10E-04	1.69E-04	2.76E-05	0.00E+00	1.29E-03
TEEN								
H-3	0.00E+00	5.83E-02	5.83E-02	5.83E-02	5.83E-02	5.83E-02	0.00E+00	5.83E-02
CR-51	0.00E+00	0.00E+00	1.51E-07	5.95E-08	3.87E-07	4.56E-05	0.00E+00	2.71E-07
MN-54	0.00E+00	2.43E-04	0.00E+00	7.25E-05	0.00E+00	4.98E-04	0.00E+00	4.82E-05
FE-59	1.45E-05	3.37E-05	0.00E+00	0.00E+00	1.06E-05	7.98E-05	0.00E+00	1.30E-05
CO-58	0.00E+00	1.36E-04	0.00E+00	0.00E+00	0.00E+00	1.88E-03	0.00E+00	3.14E-04
CO-60	0.00E+00	2.52E-04	0.00E+00	0.00E+00	0.00E+00	3.29E-03	0.00E+00	5.69E-04
NI-63	6.68E-03	4.72E-04	0.00E+00	0.00E+00	0.00E+00	7.51E-05	0.00E+00	2.26E-04
ZN-65	8.36E-05	2.90E-04	0.00E+00	1.86E-04	0.00E+00	1.23E-04	0.00E+00	1.35E-04
ZR-95	1.39E-09	4.38E-10	0.00E+00	6.43E-10	0.00E+00	1.01E-06	0.00E+00	3.01E-10
NB-95	1.49E-05	8.29E-06	0.00E+00	8.03E-06	0.00E+00	3.54E-02	0.00E+00	4.56E-06
TE-125M	3.03E-04	1.09E-04	8.47E-05	0.00E+00	0.00E+00	8.94E-04	0.00E+00	4.05E-05
I-132	6.57E-09	1.72E-08	5.79E-07	2.71E-08	0.00E+00	7.49E-09	0.00E+00	6.17E-09
I-133	2.79E-08	4.73E-08	6.61E-06	8.30E-08	0.00E+00	3.58E-08	0.00E+00	1.44E-08
CS-134	6.79E-04	1.60E-03	0.00E+00	5.08E-04	1.94E-04	1.99E-05	0.00E+00	7.42E-04
CHILD								
H-3	0.00E+00	6.50E-02	6.50E-02	6.50E-02	6.50E-02	6.50E-02	0.00E+00	6.50E-02
CR-51	0.00E+00	0.00E+00	1.61E-07	4.40E-08	2.94E-07	1.54E-05	0.00E+00	2.90E-07
MN-54	0.00E+00	1.90E-04	0.00E+00	5.34E-05	0.00E+00	1.60E-04	0.00E+00	5.07E-05
FE-59	1.76E-05	2.85E-05	0.00E+00	0.00E+00	8.25E-06	2.96E-05	0.00E+00	1.42E-05
CO-58	0.00E+00	1.10E-04	0.00E+00	0.00E+00	0.00E+00	6.41E-04	0.00E+00	3.36E-04
CO-60	0.00E+00	2.07E-04	0.00E+00	0.00E+00	0.00E+00	1.14E-03	0.00E+00	6.09E-04
NI-63	8.80E-03	4.71E-04	0.00E+00	0.00E+00	0.00E+00	3.17E-05	0.00E+00	2.99E-04

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) ==========

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ZN-65	8.57E-05	2.28E-04	0.00E+00	1.44E-04	0.00E+00	4.01E-05	0.00E+00	1.42E-04
ZR-95	1.88E-09	4.13E-10	0.00E+00	5.91E-10	0.00E+00	4.31E-07	0.00E+00	3.68E-10
NB-95	1.76E-05	6.86E-06	0.00E+00	6.45E-06	0.00E+00	1.27E-02	0.00E+00	4.90E-06
TE-125M	3.90E-04	1.06E-04	1.09E-04	0.00E+00	0.00E+00	3.76E-04	0.00E+00	5.19E-05
I-132	8.35E-09	1.53E-08	7.12E-07	2.35E-08	0.00E+00	1.81E-08	0.00E+00	7.05E-09
I-133	3.64E-08	4.50E-08	8.37E-06	7.50E-08	0.00E+00	1.82E-08	0.00E+00	1.70E-08
CS-134	8.19E-04	1.34E-03	0.00E+00	4.17E-04	1.50E-04	7.25E-06	0.00E+00	2.84E-04
INFANT								
H-3	0.00E+00	2.88E-02	2.88E-02	2.88E-02	2.88E-02	2.88E-02	0.00E+00	2.88E-02
CR-51	0.00E+00	0.00E+00	7.14E-10	1.56E-10	1.39E-09	3.19E-08	0.00E+00	1.09E-09
MN-54	0.00E+00	4.22E-07	0.00E+00	9.36E-08	0.00E+00	1.55E-07	0.00E+00	9.57E-08
FE-59	1.56E-07	2.72E-07	0.00E+00	0.00E+00	8.05E-08	1.30E-07	0.00E+00	1.07E-07
CO-58	0.00E+00	2.07E-06	0.00E+00	0.00E+00	0.00E+00	5.16E-06	0.00E+00	5.16E-06
CO-60	0.00E+00	3.98E-06	0.00E+00	0.00E+00	0.00E+00	9.46E-06	0.00E+00	9.39E-06
NI-63	4.92E-05	3.04E-06	0.00E+00	0.00E+00	0.00E+00	1.51E-07	0.00E+00	1.71E-06
ZN-65	2.75E-08	9.44E-08	0.00E+00	4.58E-08	0.00E+00	7.97E-08	0.00E+00	4.35E-08
ZR-95	3.95E-10	9.63E-11	0.00E+00	1.04E-10	0.00E+00	4.80E-08	0.00E+00	6.83E-11
NB-95	5.25E-10	2.16E-10	0.00E+00	1.55E-10	0.00E+00	1.82E-07	0.00E+00	1.25E-10
TE-125M	9.50E-07	3.18E-07	3.20E-07	0.00E+00	0.00E+00	4.53E-07	0.00E+00	1.28E-07
I-132	5.26E-10	1.07E-09	5.01E-08	1.19E-09	0.00E+00	8.66E-10	0.00E+00	3.80E-10
I-133	2.34E-09	3.40E-09	6.19E-07	4.00E-09	0.00E+00	5.76E-10	0.00E+00	9.96E-10
CS-134	3.16E-07	5.89E-07	0.00E+00	1.52E-07	6.21E-08	1.60E-09	0.00E+00	5.94E-08

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05
Unit.....: 2
Receptor.....: 0 Liquid Receptor

=== MAXIMUM DOSE FOR PERIOD ===

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	ADULT	GILLI	1.38E-01	31-day	1.50E-01	9.18E+01
					Quarter	3.75E+00	3.67E+00
					Annual	7.50E+00	1.84E+00
Admin	Tot Body	ADULT	TBODY	8.03E-02	31-day	4.50E-02	1.78E+02
					Quarter	1.13E+00	7.14E+00
					Annual	2.25E+00	3.57E+00
T.Spec	Any Organ	ADULT	GILLI	1.38E-01	31-day	2.00E-01	6.88E+01
					Quarter	5.00E+00	2.75E+00
					Annual	1.00E+01	1.38E+00

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	5.64E+01
CR-51	4.81E-02
MN-54	5.50E-01
FE-59	7.99E-02
CO-58	2.02E+00
CO-60	3.45E+00
NI-63	6.77E-02
ZN-65	1.34E-01
ZR-95	1.00E-03
NB-95	3.64E+01
TE-125M	8.08E-01
I-132	2.29E-06
I-133	2.94E-05
CS-134	2.00E-02

T.Spec	Tot Body	ADULT	TBODY	8.03E-02	31-day	6.00E-02	1.34E+02
					Quarter	1.50E+00	5.35E+00
					Annual	3.00E+00	2.68E+00

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2012 00:00
Period End Date.....: 01/01/2013 00:00
Period Duration (mins): 5.270E+05

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.68E+01
CR-51	3.28E-04
MN-54	5.87E-02
FE-59	1.57E-02
CO-58	3.83E-01
CO-60	6.93E-01
NI-63	2.69E-01
ZN-65	1.65E-01
ZR-95	3.66E-07
NB-95	5.53E-03
TE-125M	4.65E-02
I-132	7.33E-06
I-133	1.71E-05
CS-134	1.61E+00

Byron Station
ODCM Revision 8 Change Summary Matrix

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

Item No.	(old) Rev. page No.	(new) Rev. page No.	Determination Identifier	Description of Change
1.	ODCM Title Page	ODCM Title Page	A	Added month/year of revision
2.	TOC Page 1 of 7	TOC Page 1 of 7	A	Changed Radiological Effluent Controls to Radiological Effluents to align with TRM
3.	TOC Page 4 of 7	TOC Page 4 of 7	A	Changed Radiological Effluent Controls to Radiological Effluents to align with TRM
4.	TOC Page 4 of 7	TOC Page 4 of 7	A	Changed Table 1-1 to Table 1-a to eliminate duplicate tables in document
5.	TOC Page 4 of 7	TOC Page 4 of 7	A	Changed Table 1-2 to Table 1-b to eliminate duplicate tables in document
6.	TOC Page 5 of 7	TOC Page 5 of 7	A	Fixed typo – Removed "Milk" from Table 4-6 title "X/Q and D/Q at the Nearest Cow Milk Meat Locations within 5 miles"
7.	TOC Page 6 of 7	TOC Page 6 of 7	A	Changed Radiological Effluent Controls to Radiological Effluents to align with TRM
8.	TOC Page 6 of 7	TOC Page 6 of 7	A	Changed Figure 6-1 Title from "Onsite Air Sampling Locations and Site Boundary" to "Onsite Air Sampling Locations and Unrestricted Area Boundary" for nomenclature consistency.
9.	TOC Page 6 of 7	TOC Page 6 of 7	A	Changed Figure 6-3, "Inner & Outer Ring TLD Locations" to "Inner & Outer Ring Dosimeter Locations" based on recent dosimeter type change.
10.	TOC Page 6 of 7	TOC Page 6 of 7	A	Removed Figure 6-5, Site Layout and Exclusion Area. The associated figure had been previously removed from the ODCM.
11.	TOC	TOC	A	Added "Page intentionally left blank"

Byron Station
ODCM Revision 8 Change Summary Matrix

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

	Page 7 of 7	Page 7 of 7		
12.	RECS Title Page	RE Title Page	A	Changed Radiological Effluent Controls to Radiological Effluents to align with TRM Added month/year of revision
13.	Page I.1-1 Sect 1.6	Page I.1-1 Sect 1.6	A	Changed Table 1-2 to Table 1-b to eliminate duplicate tables in document and changed reference from Improved Technical Specification 3.0.2 to Surveillance Requirement 3.0.2 for accuracy.
14.	Page I.1-2 Sect 1.14	Page I.1-2 Sect 1.14	D	Changed rated thermal power definition from "shall be a total core heat transfer rate to the reactor coolant of 3586.6 MWT" to "shall be a total core heat transfer rate to the reactor coolant of 3586.6 MWT. (3645 MWT following NRC approval of license amendment request submitted under Exelon letter RS-11-099 and implementation of power uprate per Byron Unit 1 EC 378382 and Unit 2 EC 378383)."
15.	Page I.1-2 Sect 1.15	Page I.1-2 Sect 1.15	A	Changed Radiological Effluent Controls and Surveillances (RECS) to Radiological Effluents (RE) to align with the TRM – this is a hold over from original tech specs that is no longer used
16.	Page I.1-2 Sect 1.22	Page I.1-2 Sect 1.22	A	Changed Radiological Effluent Controls and Surveillances (RECS) to Radiological Effluents (RE) to align with the TRM – this is a hold over from original tech specs that is no longer used
17.	Page I.1-4 Table 1-1	Page I.1-4 Table 1-1	A	Changed Table 1-1 to Table 1-a to eliminate duplicate tables in the document. Fixed incorrect reference in the following sentence: "The bases to ITS 3.0.2 provide clarifications to this requirement" to "The bases to TSR 3.0.b provide clarifications to this requirement."
18.	Page I.1-5 Table 1-2	Page I.1-5 Table 1-2	A	Changed Table 1-2 to Table 1-b to eliminate duplicate tables in the document. Fixed typos - Changed REC column heading to TRM, added N/A to blank space under 10CFR20 REC reference, changed Technical Specifications Radioactive Effluent Release Report

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

				REC reference from 5.2 to N/A and Technical Specification reference from 5.6.2 to N/A.
19.	Page I.1-6 Table 1-2	Page I.1-6 Table 1-2	A	Changed Table 1-2 to Table 1-b to eliminate duplicate tables in the document. Fixed typo - Changed 10CFR50 Appendix I Section IV.B.2 and Technical Specifications, Annual Radiological Environmental Operating Report, TRM reference from 5.1 to N/A.
20.	Page 1.3-1	Page 1.3-1	A	Changed note from "3.0.5 through 3.10 not used" to "2.0 through 3.10 not used" based on inaccuracy of current note
21.	Page 1.3-1	Page 1.3-1	A	Changed Radiological Effluent Controls and Surveillances (RECS) to Radiological Effluents (RE) to align with the TRM – this is a hold over from original tech specs that is no longer used
22.	Page I.3-2 Sect 3.13.1	Page I.3-2 Sect 3.13.1	A	Removed the last sentence: "These data are used to calculate optional isopleths of radiation dose and radioactivity concentration" to align with current practice.
23.	Page I.3-2 Sect 3.13.2	Page I.3-2 Sect 3.13.2	A	Removed from last sentence : "and also computes and plots isopleths included in the AREOR" to align with current practice.
24.	Page I.4-1 Sect 4.3	Page I.4-1 Sect 4.3	A	Changed title of section from Liquid Effluent Concentration (TRM 3.11.c) to Concentration Limits for Effluents to align with the TRM.
25.	Page I.4-3 Sect 4.6	Page I.4-3 Sect 4.6	A	Changed title of section from Gaseous Effluents Dose Rates (TRM 3.11.f) to Dose Rate for Gaseous Effluent to align with the TRM.
26.	Page I.4-3 Sect 4.7	Page I.4-3 Sect 4.7	A	Changed title of section from Dose From Noble Gases (TRM 3.11.g) to Dose – Noble Gases to align with the TRM.
27.	Page I.4-4 Sect 4.8	Page I.4-3 Sect 4.8	A	Changed title of section from Dose From Iodine – 131, Tritium, and Radioactive Material in Particulate Form (TRM 3.11.h) to Dose - Iodine – 131, Tritium, and Radioactive Material in Particulate Form to align with the TRM.

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

28.	Page I.5-5	Page I.5-5	A	Added "Page intentionally left blank"
29.	Page II.1-1 Sect 1.0 & 1.1	Page II.1-1 Sect 1.0 & 1.1	A	Changed Radiological Effluent Controls and Surveillances (RECS) to Radiological Effluents (RE) to align with the TRM
30.	Page II.1-2 Sect 1.21	Page II.1-2 Sect 1.21	A	Fixed incorrect reference – Changed the sentence: "The 10CFR20 dose limits are summarized in Table 1-1 to "The 10CFR20 dose limit references are summarized in Table 1-2"
31.	Page II.1-5 Sect 1.2.2	Page II.1-5 Sect 1.2.2	A	Changed Radiological Effluent Controls and Surveillances (RECS) to Radiological Effluents (RE) to align with the TRM
32.	Page II.1-16 Refer ences	Page II.1-16 Refer ences	A	Added reference #109: "Exelon Letter RS-11-099, Request for License Amendment Regarding Measurement Uncertainty Recapture (MUR) Power Uprate, June 23,2011."
33.	N/A	Page II.1-20	A	Added, Figure 1-3, Restricted Area Boundary, which was mistakenly omitted from Revision 7.
34.	Page II.2-5 Sect 2.3.2. 4	Page II.2-5 Sect 2.3.2. 4	A	Fixed typo – removed 0 from the term F^{r}_{max} and changed RECS to RE to align with TRM
35.	Page II.2-8 Sect 2.6.1	Page II.2-8 Sect 2.6.1	C	Adds the following information, which allows vent stack rad monitor setpoints to be adjusted without necessitating an ODCM change: The setpoint methodology must ensure simultaneous releases do not exceed the off-site dose rate limits set forth in TRM 3.11. Setpoints can be adjusted based upon operational requirements with the restriction that the sum of the percentages between the U1 and U2 noble gas channels does not exceed 90% of the maximum permissible release rate."
36.	Page II.2-9	Page II.2-9	B	Adds additional information to indicate that containment purge effluent rad monitor setpoints are established at 1.25 times the containment noble gas activity under normal conditions based on

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

	Sect 2.6.2	Sect 2.6.2		a grab sample obtained from the rad monitor and 1.5 times the noble gas activity to prevent a spurious alarm based on a grab sample that may not be as representative of the containment atmosphere as monitored by the containment purge rad monitor during non-release periods when the containment atmosphere monitor gas detector is not operational. This change is made to align with current procedural guidance.
37.	Page II.2-9 Sect 2.6.4	Page II.2-9 Sect 2.6.4	A	Fixed typo – Changed reference from TRM Section 3.11.b to 3.11.f
38.	Page II.2-10 Sect 2.6.4	Page II.2-10 Sect 2.6.4	A	Changed RECS to RE to align with TRM
39.	Page II.3-1 Sect 3.1	Page II.3-1 Sect 3.1	A	Changed RECS to RE to align with TRM
40.	Page II.3-2 Sect 3.2.1	Page II.3-2 Sect 3.2.1	A	Changed RECS to RE to align with TRM
41.	Page II.3-3 Sect 3.2.3	Page II.3-3 Sect 3.2.3	A	Removed duplicate definition of term C_i and changed RECS reference to RE to align with TRM
42.	Page II.3-4 Sect 3.3.1	Page II.3-4 Sect 3.3.1	A	Changed RECS to RE to align with TRM
43.	Page II.3-4 Sect 3.3.2	Page II.3-4 Sect 3.3.2	A	Changed RECS to RE to align with TRM
44.	Page II.4-13	Page II.4-13	A	Added C-14 to the exception (H-3) for vegetation ingestion dose factor, which uses D/Q for H-3 and C-14 instead of X/Q. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

45.	Page II.4-15	Page II.4-15	A	Added C-14 to the exception (H-3) for milk ingestion dose factor, which uses D/Q for H-3 and C-14 instead of X/Q. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
46.	Page II.4-17	Page II.4-17	A	Added C-14 to the exception (H-3) for meat ingestion dose factor, which uses D/Q for H-3 and C-14 instead of X/Q. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
47.	Page II.4-40	Page II.4-40	A	Added C-14 to Note 2 of Table 4-13, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
48.	Page II.4-42	Page II.4-42	A	Added C-14 to Note 2 of Table 4-14, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
49.	Page II.4-44	Page II.4-44	A	Added C-14 to Note 2 of Table 4-15, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
50.	Page II.4-46	Page II.4-46	A	Added C-14 to Note 2 of Table 4-16, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
51.	Page II.4-48	Page II.4-48	A	Added C-14 to Note 2 of Table 4-17, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
52.	Page II.4-50	Page II.4-50	A	Added C-14 to Note 2 of Table 4-18, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
53.	Page II.4-52	Page II.4-52	A	Added C-14 to Note 2 of Table 4-19, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
54.	Page II.4-54	Page II.4-54	A	Added C-14 to Note 2 of Table 4-20, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

				when C-14 was added to the gaseous effluents during Revision 7.
55.	Page II.4-56	Page II.4-56	A	Added C-14 to Note 2 of Table 4-21, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
56.	Page II.4-58	Page II.4-58	A	Added C-14 to Note 2 of Table 4-22, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
57.	Page II.4-60	Page II.4-60	A	Added C-14 to Note 2 of Table 4-23, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
58.	Page II.4-62	Page II.4-62	A	Added C-14 to Note 2 of Table 4-24, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
59.	Page II.4-64	Page II.4-64	A	Added C-14 to Note 2 of Table 4-25, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
60.	Page II.4-66	Page II.4-66	A	Added C-14 to Note 2 of Table 4-26, stating that C-14 and H-3 are in units of mrem/yr per uCi/m^3. This was mistakenly omitted when C-14 was added to the gaseous effluents during Revision 7.
61.	Page II.5-4 Sect 5.5.1	Page II.5-4 Sect 5.5.1	A	Changed RECS to RE to align with TRM
62.	Page II.5-5 Sect 5.5.4	Page II.5-5 Sect 5.5.4	A	Changed RECS to RE to align with TRM
63.	Page II.6-11 Figure	Page II.6-11 Figure	A	Changed Figure title from "Onsite Air Sampling Locations" to "Onsite Air Sampling Locations and Unrestricted Area Boundary" for nomenclature consistency.

Byron Station
ODCM Revision 8 Change Summary Matrix

Administrative Changes - Determination A

Technical Changes (containment purge monitor setpoints) – Determination B

Technical Changes (auxiliary building vent effluent monitor setpoints) – Determination C

Technical Changes (rated thermal power change from 3586.6 MWT to 3645 MWT following MUR power uprate) – Determination D

	6-1	6-1		
64.	Page II.6-13	Page II.6-13	A	Figure 6-3 Changed TLD references to Dosimeter based on recent dosimeter type change.
65.	Page II.6-15	Page II.6-15	A	Typo correction - changed BY-04 latitude coordinate in Table 6-2 from 42.88167 to 42.01867
66.	Page II.6-16 To II.6-19	Page II.6-16 To II.6-19	A	Table 6-2 Changed TLD references to Dosimeter based on recent dosimeter type change

Byron Station
ODCM Revision 9 Change Summary Matrix

Administrative Changes - Determination A

Technical Changes (REMP milk location) – Determination B

Technical Changes (Meteorological Programs Reference) – Determination C

Item No.	(old) Rev. page No.	(new) Rev. page No.	Determination Identifier	Description of Change
1.	Page II.1-11	Page II.1-11	C	Changed Reference #5 from "U.S. Nuclear Regulatory Commission, Onsite Meteorological Programs, Regulatory Guide 1.23, Safety Guide 23, February 17, 1972" to "U.S. Nuclear Regulatory Commission, Meteorological Monitoring Programs For Nuclear Power Plants, Regulatory Guide 1.23, Rev 1, March 2007" UFSAR commitment is being updated from RG 1.23 Rev 0 to RG 1.23 Rev 1 to align with current Met Tower calibration criteria for dew point sensors.
2.	Table 6-1 Page II 6-8	Table 6-1 Page II 6-8	B	Removed milk indicator sampling location BY-30-1 as dairy farmer went out of business
3.	Figure 6-4 Page II 6-14	Figure 6-4 Page II 6-14	A	Changed milk sample location 26 to 26-1 and removed milk sample locations 30 and 38 due to existing error.
4.	Table 6-2 Page II 6-15	Table 6-2 Page II 6-15	B	Removed milk sampling location BY-30-1 as dairy farmer went out of business