Consumers Energy

A CMS Energy Company

Big Rock Point Nuclear Plant
10269 US-31 North
Charlevoix, MI 49720

Kurt M. Haas
General Manager

April 29, 2005

10 CFR 50 Appendix I, Section IV.B.1
10 CFR 50.36(a)

U.S. Nuclear Regulatory Commission
Document Control Desk
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DOCKETS 50-155 AND 72-043 – LICENSE DPR-6 – BIG ROCK POINT PLANT – ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT FOR THE PERIOD OF JANUARY 1, 2004 – DECEMBER 31, 2004

In accordance with the Big Rock Point Defueled Technical Specifications Section 6.6.3, attached (Attachment 1) is the Annual Radioactive Effluent Release Report for the period of January 1, 2004 to December 31, 2004. This report includes summaries of the quantities of radioactive liquid and gaseous effluents and solid waste released from the facility. The material provided is consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM) and the Process Control Program (PCP), and complies with Section IV.B.1of Appendix I 10 CFR 50 and 10 CFR 50.36(a).

A revision to the PCP is included with this report. This revision clarified radioactive waste processing activities applicable to Big Rock Point decommissioning. This revision was reviewed and does not reduce the effectiveness of to program required to meet the requirements of 10 CFR 50.36a and 10 CFR Part 20 Radiological Effluent Control Program or Radiological Effluent Monitoring Program.

Kurt M. Haas
Site General Manager

ATTACHMENT

cc: Administrator, Region III, USNRC
NRC Decommissioning Inspector, Big Rock Point
NRC NMSS Project Manager – James C Shepherd
ANI/MAELT – Dotty Sherman

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ATTACHMENT 1

Big Rock Point
Dockets 50-155 and 72-043

April 29, 2005

BIG ROCK POINT ANNUAL RADIOLOGICAL EFFLUENT RELEASE REPORT

January 1, 2004 - December 31, 2004

24 pages

Consumers Energy Company
Big Rock Point Plant
Docket 50-155

BIG ROCK POINT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2004

BIG ROCK POINT ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

January 1, 2004 to December 31, 2004

This report provides information relating to radioactive effluent releases and solid radioactive waste disposal at Big Rock Point for the year 2004. The report format is detailed in Big Rock Point Offsite Dose Calculation Manual, Section III. Effluent releases from Big Rock Point are controlled by the Defueled Technical Specifications and the Offsite Dose Calculation Manual (ODCM) requirements.

The Big Rock Point Nuclear Plant ceased power operations in August 1997. During 2004 site decommissioning activities consisted of continued building and structure demolition. Decommissioning activities in 2004 resulted in permanent dismantlement and removal of the designated gaseous and liquid effluent locations, also known as the off-gas stack and discharge canal, respectively. Monitoring for ground-level gaseous effluent releases continues during decommissioning activities. Liquid effluent monitoring is no longer conducted as all licensed discharges of radioactive liquids have ceased. Precautionary monitoring of detained surface water and ground water from dewatering operations is conducted for decommissioning activities open to the environment.

Due to the decay time since ceasing plant operations, short-lived radionuclides, including iodines and nobles gases (other than Krypton-85) are neither expected nor reported.

1. Supplemental Information

   A. Batch Releases

      Information relating to continuous and batch releases of gaseous and liquid effluents is provided in Table 1 (Enclosure A). Batch releases of radioactive liquids ceased during 2004 prior to decommissioning and restoration of the site discharge canal.

   B. Abnormal Releases

      There were no abnormal releases from Big Rock Point during 2004.

   C. Lower Limits of Detection (LLDs) for gaseous and liquid effluents are provided in Enclosure E.

D. Radioactive Effluent Monitoring Instrumentation

Big Rock Point Offsite Dose Calculation Manual, Section I currently specifies required actions when less than the minimum number of radioactive effluent monitoring instrument channels are operable. The ODCM also specifies these actions be taken when installed effluent monitoring systems are removed from service for decommissioning.

All plant-installed liquid and gaseous radioactive effluent monitoring instrument channels have been permanently removed and dismantled. Alternate ground-level airborne measurement equipment is being utilized to monitor gaseous radioactive effluents in accordance with the ODCM and site procedures. Although no radioactive liquids are released from the site, precautionary sampling of surface water is conducted routinely.

2. Gaseous Effluents

Table 2 (Enclosure B) lists and summarizes all gaseous radioactive effluents released during the reporting period. The unidentified beta was 0.3% of the total release (particulates and tritium).

Gaseous effluents did not result in any air dose at the site boundary in 2004, as noble gases are no longer present or released from the site during decommissioning activities. Elevated gaseous effluent releases from the plant stack (73 meters above grade) ceased after the first quarter of 2004 and gaseous effluents for second, third and fourth quarters were calculated as ground-level releases in accordance with the methodology in the ODCM. Overall, gaseous radioactivity released in 2004 (Particulates and Tritium) due to dismantlement activities was approximately equivalent to 2003, with no noble gases or iodines released. Whole body and organ doses for 2004 were also comparable to those calculated in 2003[1].

3. Liquid Effluents

Table 3 (Enclosure C) lists and summarizes all liquid radioactive effluents released during the reporting period. The unidentified beta was 9.6% of the total release (including fission & activation products and tritium). The only liquid effluent batch release for 2004 occurred during the first quarter at a concentration of 7.81E-08 µCi/ml. Total liquid effluent radioactivity, including

[1] Calculated organ doses for 2004 are higher than those for the plant prior to 2000. This is the result of a conservative decision (beginning in 2000) that all critical receptors are assumed to be located at the site boundary with the highest Chi/Q value.

tritium, released in 2004 was less than 2003 releases (2.84 E-03 Ci versus 5.82E-01 Ci, respectively).

4. Solid Waste

Table 4 (Enclosure D) summarizes all solid radwaste volume shipped, classification, processing employed, sources, Curie quantity, and nuclide content. Radwaste shipments were made either to the Barnwell Waste Management Facility in Barnwell, South Carolina, or Envirocare of Utah via a radwaste processing facility. The total volume of material shipped during 2004 was greater than 2003 shipment volume; however, the total activity was significantly less than 2003 (32.0 Ci versus 10,200 Ci) due primarily to shipment of low-activity building demolition wastes.

5. Summary of Radiological Impact on Man

The ODCM, Section III, Item 1.6 specifies that the Annual Effluent Release Report shall provide potential dose calculations based on measured effluent to liquid and gaseous pathways if estimates of dose exceed 1 millirem to an organ or total body of any individual or more that 1 person-rem to the population within 50 miles. During the year 2004 no quarterly or annual dose calculations exceeded 1 millirem or 1 person-rem from releases to either liquid or gaseous pathways. Although not required, potential doses to individuals and populations were calculated using *NRCDose* Version 2.3.2 computer code, LADTAPII and GASPARII modules. The quarterly values for curies released were input for each nuclide and results are summarized as follows:

A. The maximum total body dose to an individual in unrestricted water-related exposure pathways was:

First Quarter	6.37E-03	millirem (adult)
Second Quarter	0.00E+00	millirem
Third Quarter	0.00E+00	millirem
Fourth Quarter	3.20E-07	millirem (adult)

The maximum organ doses attributable to liquid effluents were:

First Quarter	1.43E-02	millirem (child bone)
Second Quarter	0.00E-00	millirem
Third Quarter	0.00E-00	millirem
Fourth Quarter	3.20E-07	millirem (adult, all organs)

B. The offsite air dose at the site boundary (0.57 mi E) due to noble gases was:

0.00 millirad beta and 0.00 millirad gamma for all four quarters (no noble gasses released).

C. The most restrictive organ dose to an individual in an unrestricted area (based on identified critical receptors) from gaseous effluent releases (tritium and particulate) were*:

First Quarter	2.12E-03	millirem (child bone)
Second Quarter	1.93E-03	millirem (child bone)
Third Quarter	1.90E-03	millirem (child bone)
Fourth Quarter	2.24E-03	millirem (child bone)

D. Integrated total body doses to the general population and average doses to individuals within the population from liquid effluent release pathways to a distance of 50 miles from the site boundary were:

First Quarter	2.97E-03 person-Rem,	1.52E-05 mrem average
Second Quarter	0.00E-00 person-Rem,	0.00E-00 mrem average
Third Quarter	0.00E-00 person-Rem,	0.00E-00 mrem average
Fourth Quarter	5.57E-07 person-Rem,	2.86E-09 mrem average

E. Integrated total body dose to the general population and average doses to individuals within the population from gaseous effluent release pathways to a distance of 50 miles from the site boundary were*:

First Quarter	9.95E-05 person-Rem,	5.11E-07 mrem average
Second Quarter	7.64E-05 person-Rem,	5.13E-07 mrem average
Third Quarter	4.21E-05 person-Rem,	2.16E-07 mrem average
Fourth Quarter	2.76E-04 person-Rem,	1.41E-06 mrem average

6. Offsite Dose Calculation Manual (ODCM)

The ODCM describes the radiological release requirements for the Big Rock site. The ODCM was not revised in 2004.

* Gaseous effluent doses calculated for first quarter were obtained for elevated releases from the plant stack; doses for second, third and fourth quarters were obtained in accordance with the ODCM methodology for ground-level releases.

7. Process Control Program (PCP)

The Process Control Program describes solid waste processing and disposal methods utilized at the Big Rock Point site. The PCP was revised during 2004 to clarify radwaste processing activities applicable to decommissioning. The revised pages are provided in Enclosure F.

Enclosure A
1 Page

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT

BATCH RELEASES

January - December 2004

TABLE 1
BATCH RELEASES
January 1, 2004 to December 31,2004

A. **GASEOUS** - Continuous release only; no batch releases.

B. LIQUID*	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Number of Releases		1	0	0	0
Total Release Time	Minutes	124	0	0	0
Maximum Release Time	Minutes	124	0	0	0
Average Release Time	Minutes	124	0	0	0
Minimum Release Time	Minutes	124	0	0	0

* No batch releases of liquids occurred after first quarter of 2005.

Enclosure B
3 Pages

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT

GASEOUS EFFLUENTS - SUMMATION OF RELEASES

January - December 2004

TABLE 2
GASEOUS EFFLUENT RELEASES
January 1, 2004 to December 31,2004

A. FISSION AND ACTIVATION GASES	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR	Est Total Error %
1. Total release	Ci	0.00	0.00	0.00	0.00	N/A
2. Average release rate for period	µCi/sec	N/A	N/A	N/A	N/A	
3. Percent of annual avg EC	%	N/A	N/A	N/A	N/A	

B. IODINES						
1. Total Iodine	Ci	0.00	0.00	0.00	0.00	N/A
2. Average release rate for period	µCi/sec	N/A	N/A	N/A	N/A	
3. Percent of annual avg EC	%	N/A	N/A	N/A	N/A	

C. PARTICULATES						
1. Particulates with half-life >8 day	Ci	1.40E-04	6.50E-05	3.83E-05	2.15E-05	5.9 %
2. Average release rate for period	µCi/sec	1.80E-05	8.27E-05	4.82e-06	2.71E-05	
3. Percent of annual avg EC	%	3.37E-06	2.72E-06	2.38E-06	6.29E-06	
4. Gross alpha radioactivity	Ci	3.71E-06	2.60E-06	3.83E-06	2.26E-06	

D. TRITIUM					
1. Total Release	Ci	6.32E-02	6.38E-02	6.46E-02	6.46E-02
2. Average release rate for period	µCi/sec	8.12E-03	8.12E-03	8.12E-03	8.12E-03
3. Percent of annual avg EC	%	3.99E-07	6.58E-07	6.58E-07	6.58E-07

E. WHOLE BODY DOSE					
1. Beta Air dose at Site Boundary due to Noble Gases (ODCM Section I, 1.3.1 a (1) (2))	mrads	0.00	0.00	0.00	0.00
2. Percent limit	%	N/A	N/A	N/A	N/A
3. Gamma Air dose at Site Boundary due to Noble Gas (ODCM Section I, 1.3.1 a (1) (2))	mrads	0.00	0.00	0.00	0.00
4. Percent limit	%	N/A	N/A	N/A	N/A

F. ORGAN DOSE (ODCM Section I, 1.3.b (1) (2))					
1. Maximum organ dose to public based on Critical Receptors (child bone)	mrem	2.12E-03	1.93E-03	1.90E-03	2.24E-03
2. Percent of limit (7.5 mrem/quarter)	%	2.80E-02	2.57E-02	2.53E-02	2.99E-02

TABLE 2
GASEOUS EFFLUENT RELEASES
January 1, 2004 to December 31,2004

1. FISSION GASES	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Krypton-85m	Ci	0.00	0.00	0.00	0.00
Krypton-87	Ci	0.00	0.00	0.00	0.00
Krypton-88	Ci	0.00	0.00	0.00	0.00
Xenon-133	Ci	0.00	0.00	0.00	0.00
Xenon-133m	Ci	0.00	0.00	0.00	0.00
Xenon-135	Ci	0.00	0.00	0.00	0.00
Xenon-135m	Ci	0.00	0.00	0.00	0.00
Xenon-138	Ci	0.00	0.00	0.00	0.00
Total for Period	Ci	0.00	0.00	0.00	0.00

2. IODINES					
Iodine-131	Ci	0.00	0.00	0.00	0.00
Iodine-132	Ci	0.00	0.00	0.00	0.00
Iodine-133	Ci	0.00	0.00	0.00	0.00
Iodine-134	Ci	0.00	0.00	0.00	0.00
Iodine-135	Ci	0.00	0.00	0.00	0.00
Total for Period	Ci	0.00	0.00	0.00	0.00

TABLE 2
GASEOUS EFFLUENT RELEASES
January 1, 2004 to December 31,2004

3. PARTICULATES*	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Chromium-51	Ci	<LLD	<LLD	<LLD	<LLD
Manganese-54	Ci	<LLD	<LLD	<LLD	<LLD
Cobalt-58	Ci	<LLD	<LLD	<LLD	<LLD
Iron-59	Ci	<LLD	<LLD	<LLD	<LLD
Cobalt-60	Ci	9.54E-05	3.69E-05	1.26E-05	1.70E-04
Zinc-65	Ci	<LLD	<LLD	<LLD	<LLD
Silver-110m	Ci	<LLD	<LLD	<LLD	<LLD
Cesium-134	Ci	<LLD	<LLD	<LLD	<LLD
Cesium-137	Ci	2.49E-05	1.72E-05	9.93E-06	1.14E-05
Barium-140	Ci	<LLD	<LLD	<LLD	<LLD
Europium-152	Ci	<LLD	<LLD	4.47E-06	2.21E-05
Strontium-89	Ci	<LLD	<LLD	<LLD	<LLD
Strontium-90	Ci	1.17E-06	1.05E-06	3.04E-07	3.06E-07
Net unidentified beta	Ci	1.81E-5	9.82E-06	1.10E-05	1.16E-05
Total	Ci	1.40E-04	6.50E-05	3.83E-05	2.15E-04

* Particulates with half-life > 8 days

Enclosure C
2 Pages

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT

LIQUID EFFLUENTS - SUMMATION OF RELEASES

January - December 2004

TABLE 3
LIQUID EFFLUENT RELEASES
January 1, 2004 to December 31,2004

A. FISSION AND ACTIVATION PRODUCTS	Units	1ST QTR Batch	2ND QTR	3RDQTR	4TH QTR Continuous	Est Total Error %
1. Total release (not including tritium, gases, alpha)	Ci	7.32E-04	.00E+00	0.00E+00	0.00E+00	4.2%
2. Average diluted concentration during period	µCi/ml	2.22E-10	N/A	N/A	N/A	
3. Percent of EC	%	2.48E-02	N/A	N/A	N/A	
B. TRITIUM 1. Total release	Ci	1.10E-03	0.00E+00	0.00E+00	1.01E-03	1.5%
2. Average diluted concentration during period	µCi/ml	3.32E-10	N/A	N/A	3.40E-08	
3. Percent of EC	%	3.32E-10	N/A	N/A	3.40E-03	
C. DISSOLVED AND ENTRAINED GASES 1. Total release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
2. Average diluted concentration during period	µCi/ml	N/A	N/A	N/A	N/A	
3. Percent of EC	%	N/A	N/A	N/A	N/A	
D. GROSS ALPHA RADIOACTIVITY	Ci	5.18E-07	0.00E+00	0.00E+00	0.00E+00	
E. VOLUME OF WASTE RELEASED ** (Prior to dilution)	Liters	1.31E+04	0.00E+00	0.00E+00	1.47E+06	
F. VOLUME OF DILUTION WATER USED DURING PERIOD	Liters	3.29E+09	0.00E+00	0.00E+00	1.10E+08	
G. MAXIMUM DOSE COMMITMENT WHOLEBODY	mrem	6.37E-03	0.00E+00	0.00E+00	3.20E-07	
Percent of ODCM Section I, 2.3.1 a (1.5 mrem)	%	4.25E-01	0	0	2.13E-05	
H. MAXIMUM DOSE COMMITMENT - ORGAN	mrem	1.43E-02	0.00E+00	0.00E+00	3.20E-07	
Percent of ODCM Section I, 2.3.1 b (5.0 mrem)	%	2.86E-02	0	0	6.0E-06	

TABLE 3
LIQUID EFFLUENT RELEASES
January 1, 2004 to December 31,2004

1. NUCLIDES RELEASED	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Chromium-51	Ci	<LLD	--	--	<LLD
Manganese 54	Ci	<LLD	--	--	<LLD
Cobalt-58	Ci	<LLD	--	--	<LLD
Iron-59	Ci	<LLD	--	--	<LLD
Cobalt-60	Ci	1.44E-04	--	--	<LLD
Zinc-65	Ci	<LLD	--	--	<LLD
Strontium-89	Ci	<LLD	--	--	<LLD
Strontium-90	Ci	5.60E-06	--	--	<LLD
Molybdenum-99	Ci	<LLD	--	--	<LLD
Silver-110m	Ci	<LLD	--	--	<LLD
Iodine-131	Ci	<LLD	--	--	<LLD
Cesium-134	Ci	<LLD	--	--	<LLD
Cesium-137	Ci	4.07E-04	--	--	<LLD
Antimony-125	Ci	<LLD	--	--	<LLD
Tin-113	Ci	<LLD	--	--	<LLD
Net Unidentified Beta	Ci	1.76E-04	--	--	<LLD
Fission & Activation Product Total	Ci	7.32E-04	--	--	<LLD
Xenon-133	Ci	<LLD	--	--	<LLD
Tritium	Ci	1.10E-03	--	--	1.01E-03
Grand Total	Ci	1.83E-03	--	--	1.01E-03

Enclosure D
1 Page

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT
SOLID WASTE

January - December 2004

TABLE 4
SOLID WASTE SHIPMENT SUMMARY
January 1, 2004 to December 31,2004

Waste Class	Source of Waste	Solidification Agent	Container Type	Volume (Cu. Ft.)	Total Curies*	Principal Radionuclides*
AU	Metal, concrete and DAW from plant demolition	None	Metal Box and Exempt Packaging	78,086	3.2E+01	Co-60, Fe-55, Mn-54, Ni-63, Am-241, Pu-241, H-3, Cs-137
			TOTALS	78,086	3.2E+01	

* Gamma isotopes are measured quantities, all others are estimated from scaling factors.

Enclosure E
1 Page

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT
LOWER LIMIT OF DETECTION FOR BIG ROCK EFFLUENTS

January - December 2004

TABLE 5
LOWER LIMITS OF DETECTION

Gaseous Effluents

Nuclide	LLD (µCi/cc)*
Mn-54	6 E-14
Co-58	5 E-14
Fe-59	2 E-13
Co-60	9 E-14
Zn-65	2 E-14
Nb-95	6 E-14
Zr-95	8 E-14
Ag-110m	5 E-14
Sb-125	2 E-14
Cs-134	5 E-14
Cs-137	6 E-14
Ce-144	3 E-13
Am-241	2 E-13

Liquid Effluents

Nuclide	LLD (µCi/cc)*
Mn-54	1 E-07
Co-58	2 E-07
Fe-59	1 E-07
Co-60	3 E-07
Zn-65	3 E-07
Nb-95	1 E-07
Nb-95	1 E-07
Nb-95	1 E-07
Zr-95	3 E-07
Ag-110m	2 E-07
Sb-125	2 E-07
Cs-134	2 E-07
Cs-137	2 E-07
Ce-144	5 E-07
Am-241	4 E-07

* Based on gamma isotopic analysis for a typical stack filter and typical liquid batch release.

Enclosure F
4 Pages

Consumers Energy
Big Rock Point

PROCESS CONTROL PROGRAM
REVISION 27 (revised pages only)

January - December 2004

1.0 PROGRAM OVERVIEW

The Process Control Program (PCP) is intended to provide a general description of methods for controlling the processing and packaging of radioactive waste for burial. Regardless of the waste class, the resulting waste form when shipped for burial shall meet the following requirements:

1. Waste must be packaged in containers acceptable to the burial site as designated in the waste acceptance criteria.

2. The packaging or waste shall not contain any liquid except as allowed by the disposal site license and waste acceptance criteria.

3. Waste must not contain or be capable of generating, quantities of toxic gases, vapors or fumes harmful to persons transporting, handling or disposing of the waste.

4. Waste must not be pyrophoric. Pyrophoric materials in waste shall be treated, prepared and packaged to be nonflammable.

5. Waste containing hazardous, biological, pathogenic or infectious material must be treated to reduce the potential hazard from the non-radiological materials and be acceptable to the burial site as designated by the waste acceptance criteria.

For Class B and C waste, the waste form should maintain gross physical properties and identity over a 300-year period. To ensure that Class B and C wastes maintain stability, the following minimum conditions should be met:

1. The waste should be a solid form or in a container or structure that provides stability after disposal.

2. The waste or packaging shall not contain any liquid except as authorized by the disposal site license.

3. The waste or container should be resistant to degradation caused by radiation effects.

4. The waste or container should remain stable under the compressive loads inherent in the disposal environment.

5. The waste or container should remain stable if exposed to moisture or water after disposal.

6. The as generated waste should be compatible with the stabilization medium or container.

2.0 WASTE STABILIZATION

Radioactive waste may be inherently stable, or may be stabilized by solidification, encapsulation or use of a High Integrity Container (HIC).

2.1 Inherently stable waste is generally associated with activated or irradiated steel or concrete. The waste shall be packaged as required by the disposal site waste acceptance criteria. Additionally, contact will be made with the disposal site to ensure acceptance of the inherently stable waste classification.

2.2 If solidification or encapsulation of waste is required, the processing of the waste and tests for acceptable solidification/encapsulation shall be documented in procedures specific to the intended method.

2.3 High Integrity Containers are generally used for providing stability of waste streams including resin, filter media and non inherently stable waste, such as highly contaminated metals. General criteria for selection and use of a HIC for stability include:

1. The HIC is acceptable for use at the disposal facility.

2. The HIC is used in accordance with the applicable certificate of compliance issued for the HIC.

3. The HIC is acceptable to the operator of the disposal facility and an engineered barrier is available, if required.

   NOTE: Due to the location and possible release path to Lake Michigan, no dewatering or liquid processing activities will be permitted in the Radwaste Storage Facility.

4. For HICs potentially containing liquids, such as resin and filter HICs, the HIC shall be dewatered and acceptable dewatering testing shall be documented in an approved procedure. After acceptable dewatering has been completed, absorbent or filler material may be added to HICs to prevent shifting of waste in the container during transport.

3.0 WASTE CLASSIFICATION

3.1 Waste sampling and classification procedures shall be sufficient to identify the actual activities in the waste form within a factor of ten. If scaling factors are used to establish, the scaling factors will be established at the following frequencies.

3.2 Scaling factors for activated components shall be decay corrected to within one year of the expected disposal date. After initial determination, no significant additional neutron irradiation will occur to increase the waste stream specific activity.

3.3 For Dry Active Waste, including demolition debris and system components, the scaling factor should be determined every two years or if a significant isotopic ratio shift is suspected to have occurred. Big Rock Point has undergone systems decontamination and all normally radioactive systems are assumed to contain the same isotopic make up.

3.4 For liquid waste system filters, the scaling factors should be determined every two years or if a significant isotopic ratio shift is suspected to occur. The major source of liquids at Big Rock Point is the Spent Fuel Pool. Sampling of the spent fuel pool filters is assumed to be representative of the filter waste streams.

3.5 For liquid waste system resins, the scaling factors should be determined for each resin shipping campaign, which is expected to occur on an infrequent basis due to the limited quantity of resin being produced.

3.6 Documentation of the waste stream analysis, waste form and scaling factor determination will be maintained by the Big Rock Point Radwaste Project Manager.

4.0 CONTRACTED VENDOR SERVICES

4.1 Vendors used for processing of waste streams shall be selected from the Consumers Energy Approved Suppliers List.

5.0 RADIOACTIVE LIQUID WASTE SYSTEM DESCRIPTION

5.1 The plant liquid radwaste system consists of installed or temporary pumps, piping or hoses, tanks, filters and demineralizers. The system is designed to process water to levels to allow discharge to the environment.

5.2 Resins and filter media from system operation may be packaged and shipped off site for processing by an approved vendor or dewatered/dried and shipped off site for disposal at an approved disposal site.

5.3 Water generated from decommissioning activities (i.e., decontamination or dust control) may be processed using evaporators. All process water evaporation will be conducted in a controlled environment equipped with filtration and monitoring in accordance with the ODCM Section 1, Subsection 1.2. Solid waste generated from evaporation will be processed in accordance with this PCP.