

A CMS Energy Company

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

Kurt M. Haas
General Manager

April 22, 2003

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

**DOCKETS 50-155 AND 72-043 – LICENSE DPR-6, BIG ROCK POINT
PLANT – ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT FOR
THE PERIOD OF JANUARY 1, 2002 – DECEMBER 31, 2002**

In accordance with the Big Rock Point Defueled Technical Specifications Section 6.7.3, attached (Attachment 1) is the Annual Radioactive Effluent Release Report for the period of January 1, 2002 to December 31, 2002. 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 and the process Control Program, and complies with Section IV.B.1 of Appendix I 10 CFR 50 and 10 CFR 50.36(a).



Kurt M. Haas
Site General Manager

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

ATTACHMENT

Nmss07

ATTACHMENT 1

Big Rock Point
Dockets 50-155 and 72-043

April 22, 2003

**BIG ROCK POINT ANNUAL RADIOLOGICAL EFFLUENT
RELEASE REPORT**

January 1, 2002 - December 31, 2002

5 pages

5 1

Consumers Energy Company
Big Rock Point Plant
Docket 50-155

BIG ROCK POINT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2002

BIG ROCK POINT ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

January 1, 2002 to December 31, 2002

This report provides information relating to radioactive effluent releases and solid radioactive waste disposal at Big Rock Point for the year 2002. The report format is detailed in Big Rock Point Offsite Dose Calculation Manual, Section III, item 1.

The Big Rock Point Nuclear Plant ceased operations in August 1997. During 2002 site activities consisted of continued removal of decommissioned systems and equipment, movement of spent nuclear fuel to the Independent Spent Fuel Storage Installation (ISFSI), and demolition of the solid Radwaste Building.

Effluent release from Big Rock Point are controlled by the Defueled Technical Specifications and the Offsite Dose Calculation Manual (ODCM) requirements. Big Rock Point maintains gaseous and liquid radioactive effluent programs similar to its operational period; however, the number and quantity of gaseous and liquid effluent releases has been significantly reduced since plant operations ceased. 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).

B. Abnormal Releases

There were no abnormal releases from Big Rock Point during 2002.

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 requires that with less than the minimum number of radioactive effluent monitoring instrument channels operable, the action shown in Table I.A-1 be performed: "Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, explain in the next Radioactive Effluent Report why the inoperability was not corrected in a timely manner."

No radioactive effluent monitoring instrument channels were inoperable for more than 30 days during this reporting period.

2. Gaseous Effluents

Table 2 (Enclosure B) lists and summarizes all gaseous radioactive effluents released during the reporting period. The unidentified beta was 3.51E-03% of the total release (particulates and tritium).

Gaseous effluents did not result in any air dose at the site boundary in 2002, as noble gases are no longer present/released from the site during the decommissioning activities. Overall, gaseous radioactivity released in 2002 (Particulates and Tritium) was approximately equivalent to 2001, with no noble gases or iodines released. Whole body and organ doses for 2002 were also comparable to those calculated in 2001¹.

3. Liquid Effluents

Table 3 (Enclosure C) lists and summarizes all liquid radioactive effluents released during the reporting period. The unidentified beta was 1.2% of the total release (including fission & activation products and tritium). The maximum liquid effluent release concentration for 2002 occurred during the third quarter at 1.18E-07 $\mu\text{Ci/ml}$. During the first and second quarters of 2002, no liquid batch releases from the site were conducted. A total of three liquid batch releases were performed during the third and fourth quarters.

¹ Calculated organ doses for 2002 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.

Total liquid effluent radioactivity, including tritium, released in 2002 was less than 2001 releases (7.28E-03 vs. 3.03E-02 Ci), due to increased use of demineralization for effluent from the Spent Fuel Pool Cooling skid and lower total release volume.

4. Solid Waste

Table 4 (Enclosure D) summarizes all solid radwaste volume shipped, classification, processing employed, sources, curie 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 2002 was less than 2001 shipment volume; the total shipment radioactivity designated for burial in 2002 was also less than in 2001.

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 2002 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 *NRC Dose* 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	0.00	millirem
Second Quarter	0.00	millirem
Third Quarter	2.79E-03	millirem (adult)
Fourth Quarter	1.67E-03	millirem (adult)

The maximum organ doses were:

First Quarter	0.00	millirem
Second Quarter	0.00	millirem
Third Quarter	6.88E-03	millirem (child bone)
Fourth Quarter	3.38E-03	millirem (child bone)

- 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	2.57E-04	millirem (child bone)
Second Quarter	2.02E-04	millirem (child bone)
Third Quarter	2.22E-04	millirem (child bone)
Fourth Quarter	2.71E-04	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	0.00	person-Rem and 0.00	millirem
Second Quarter	0.00	person-Rem and 0.00	millirem
Third Quarter	1.86E-03	person-Rem and 9.54E-06	millirem
Fourth Quarter	1.18E-03	person-Rem and 6.05E-06	millirem

- 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	9.28E-06	person-Rem and 4.76E-08	millirem
Second Quarter	8.76E-06	person-Rem and 4.49E-08	millirem
Third Quarter	8.96E-06	person-Rem and 4.60E-08	millirem
Fourth Quarter	1.49E-05	person-Rem and 7.65E-08	millirem

6. Offsite Dose Calculation Manual (ODCM)

The ODCM described the radiological release requirements for the Big Rock site. The ODCM was revised one time in 2002 to include environmental monitoring requirements for the ISFSI; this revision does not affect any effluent monitoring or reporting requirements. Enclosure F contained the revised pages of the ODCM.

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 not revised during 2002.

Enclosure A
1 Page

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT

BATCH RELEASES

January - December 2002

TABLE 1
BATCH RELEASES
January 1, 2002 to December 31,2002

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

B. LIQUID	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Number of Releases		0	0	1	2
Total Release Time	Minutes	N/A	N/A	228	345
Maximum Release Time	Minutes	N/A	N/A	228	204
Average Release Time	Minutes	N/A	N/A	228	172.5
Minimum Release Time	Minutes	N/A	N/A	228	141

Enclosure B
3 Pages

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT
GASEOUS EFFLUENTS - SUMMATION OF RELEASES

January - December 2002

TABLE 2
GASEOUS EFFLUENT RELEASES
January 1, 2002 to December 31,2002

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	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR	Est Total Error %
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	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR	Est Total Error %
1. Particulates with half-life >8 day	Ci	9 16E-06	7.99E-6	8 07E-06	1.74E-05	7.63
2. Average release rate for period	μCi/sec	1.18E-06	1 02E-06	1 01E-06	2.18E-06	
3. Percent of annual avg EC	%	3 23E-07	2 66E-07	2.88E-07	4.44E-07	
4. Gross alpha radioactivity	Ci	2.20E-07	2 40E-07	3 25E-07	2.76E-07	

D. TRITIUM	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. Total Release	Ci	6 32E-02	6 39E-02	6.46E-02	6.46E-02
2. Average release rate for period	μCi/sec	8 12E-03	8.13E-03	8.12E-03	8 12E-03
3. Percent of annual avg EC	%	4.21E-07	4 21E-07	4 21E-07	4.21E-07

E. WHOLE BODY DOSE	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. Beta Air dose at Site Boundary due to Noble Gases (ODCM Section I, 1.3.1 a (1) (2))	mrad	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))	mrad	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))	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. Maximum organ dose to public based on Critical Receptors (child bone)	mrem	2 71E-04	2.02E-04	2.22E-04	2.71E-04
2. Percent of limit (7.5 mrem/quarter)	%	3 43E-03	2.69E-03	2 96E-03	3 61E-03

TABLE 2
GASEOUS EFFLUENT RELEASES
January 1, 2002 to December 31, 2002

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, 2002 to December 31, 2002

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	2.53E-06	2.48E-06	3.16E-06	7.61E-06
Zinc-65	Ci	<LLD	<LLD	<LLD	<LLD
Silver-110m	Ci	<LLD	<LLD	<LLD	<LLD
Cesium-134	Ci	<LLD	<LLD	<LLD	<LLD
Cesium-137	Ci	3.87E-06	3.21E-06	2.45E-6	6.54E-06
Barium-140	Ci	<LLD	<LLD	<LLD	<LLD
Strontium-89	Ci	2.98E-07	2.97E-07	2.85E-07	2.72E-07
Strontium-90	Ci	1.68E-07	1.494E-07	1.33E-07	1.37E-07
Net unidentified beta	Ci	2.26E-06	1.85E-06	2.04E-06	2.81E-06
Total	Ci	9.16E-06	7.99E-06	8.07E-06	1.74E-05

* 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 2002

TABLE 3
LIQUID EFFLEUNT RELEASES
January 1, 2002 to December 31, 2002

A	FISSION AND ACTIVATION PRODUCTS	Units	1ST QTR	2ND QTR	3RDQTR	4TH QTR	Est Total Error %
	1. Total release (not including tritium, gases, alpha)	Ci	0.00E+00	0.00E+00	2.03E-03	1.18E-03	4.53
	2. Average diluted concentration during period	μCi/ml	0.00E+00	0.00E+00	1.54E-10	9.12E-11	
	3. Percent of EC	%	0.00E+00	0.00E+00	9.18E-03	6.74E-03	
B.	TRITIUM						
	1. Total release	Ci	0.00E+00	0.00E+00	2.16E-04	3.85E-03	1.47
	2. Average diluted concentration during period	μCi/ml	0.00E+00	0.00E+00	1.64E-11	2.96E-10	
	3. Percent of EC	%	0.00E+00	0.00E+00	1.64E-06	2.96E-05	
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	0.00E+00	0.00E+00	4.99E-08	1.38E-07	
E.	VOLUME OF WASTE RELEASED (Prior to dilution)	Liters	0.00E+00	0.00E+00	1.59E+04	1.42E+04	
F.	VOLUME OF DILUTION WATER USED DURING PERIOD	Liters	1.27E+10	1.13E+10	1.32E+10	1.30E+10	
G	MAXIMUM DOSE COMMITMENT WHOLEBODY	mrem	0.00E-00	0.00E-00	2.79E-03	1.67E-03	
	Percent of ODCM Section I, 2.3.1 a (1.5 mrem)	%	0.00	0.00	0.19	0.11	
H.	MAXIMUM DOSE COMMITMENT - ORGAN	mrem	0.00E-00	0.00E-00	6.88E-03	3.38E-03	
	Percent of ODCM Section I, 2.3.1 b (5.0 mrem)	%	0.00	0.00	0.14	0.07	

TABLE 3
LIQUID EFFLEUNT RELEASES
January 1, 2002 to December 31, 2002

1. NUCLIDES RELEASED	Units	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Chromium-51	Ci	0.00	0.00	<LLD	<LLD
Manganese 54	Ci	0.00	0.00	<LLD	5.87E-06
Cobalt-58	Ci	0.00	0.00	<LLD	<LLD
Iron-59	Ci	0.00	0.00	<LLD	<LLD
Cobalt-60	Ci	0.00	0.00	9.54E-04	6.47E-04
Zinc-65	Ci	0.00	0.00	<LLD	<LLD
Strontium-89	Ci	0.00	0.00	6.52E-08	7.51E-08
Strontium-90	Ci	0.00	0.00	1.36E-05	7.85E-06
Molybdenum-99	Ci	0.00	0.00	<LLD	<LLD
Silver-110m	Ci	0.00	0.00	<LLD	<LLD
Iodine-131	Ci	0.00	0.00	<LLD	<LLD
Cesium-134	Ci	0.00	0.00	<LLD	<LLD
Cesium-137	Ci	0.00	0.00	6.82E-04	4.02E-04
Antimony-125	Ci	0.00	0.00	<LLD	<LLD
Tin-113	Ci	0.00	0.00	<LLD	<LLD
Net Unidentified Beta	Ci	0.00	0.00	3.85E-04	1.21E-04
Fission & Activation Product Total	Ci	0.00	0.00	2.03E-03	1.18E-03
Xenon-133	Ci	0.00	0.00	<LLD	<LLD
Tritium	Ci	0.00	0.00	2.16E-04	3.85E-03
Grand Total	Ci	0.00	0.00	2.25E-03	5.03E-03

Enclosure D
1 Page

Consumers Energy
Big Rock Point

**RADIOACTIVE EFFLUENT RELEASE REPORT
SOLID WASTE**

January - December 2002

TABLE 4
SOLID WASTE SHIPMENT SUMMARY
January 1, 2002 to December 31, 2002

<u>Waste Class</u>	<u>Source of Waste</u>	<u>Solidification Agent</u>	<u>Container Type</u>	<u>Volume (Cu. Ft.)</u>	<u>Total Curies*</u>	<u>Principal Radionuclides*</u>
AU	Metal, concrete and DAW from plant demolition	N/A	Metal Box	21,047	1.20 E+01	Co-60, H-3, Mn-54, Fe-55, Ni-63, Cs-137, Sr-90
			TOTAL	21,047	1.20 E+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 2002

**TABLE 5
LOWER LIMITS OF DETECTION**

Gaseous Effluents

<u>Nuclide</u>	<u>LLD ($\mu\text{Ci/cc}$)*</u>
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

<u>Nuclide</u>	<u>LLD ($\mu\text{Ci/cc}$)*</u>
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
3 Pages

Consumers Energy
Big Rock Point

RADIOACTIVE EFFLUENT RELEASE REPORT
OFFSITE DOES CALCULATION MANUAL
REVISION 23 (revised pages only)

January - December 2002

BIG ROCK POINT NUCLEAR POWER PLANT
PROCEDURE APPROVAL AND AUTHORIZATION

Procedure No. VOLUME 25 Rev No. 23
Procedure Title OFFSITE DOSE CALCULATION MANUAL AND RELATED DOCUMENTS
A. OFFSITE DOSE CALCULATION MANUAL
B. PROCESS CONTROL PROGRAM

CURRENT REVISION STATUS

Author TAGoble Date 05/28/02 Quality Review Form No. 148-02

APPLICABILITY ISSUE HISTORY

Revision No. N/A Date N/A Quality Review Form No. N/A
Approved for use
Procedure Sponsor/Designate [Signature] Date 10/22/02
Authorized Period of Use N/A through N/A

BEFORE USING THIS PROCEDURE FOR WORK ACTIVITIES, VERIFY WITH THE RESPECTIVE PROCEDURE CONTROLLING DEPARTMENT THERE ARE NO OUTSTANDING TEMPORARY CHANGES

When applicable:

PROCEDURE IMPLEMENTATION HISTORY

Reviewed for System or Component Operability

Performed by		Completed/Reviewed by		Method of Verification
Title		Title		
Date	Time	Date	Time	
				<input type="checkbox"/> Functional Test <input type="checkbox"/> Physical Inspection <input type="checkbox"/> Administrative Review

AMMS WORK ORDER NO. (if applicable) _____

4.4

BASES:

a. Monitoring Program

The radiological environmental monitoring program required by this specification provides representative measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides that lead to the highest potential radiation exposures to members of the public resulting from post-operational conditions. This monitoring program implements Section IV.B.2 of Appendix I to 10 CFR Part 50 and thereby supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements, low effluent levels due to the defueled conditions and the modeling of the environmental exposure pathways.

The radiological environmental monitoring program also applies to the dry fuel storage system and implements the requirements of 10 CFR Part 72.104. Specifically, calculated annual doses from plant-generated radioactive effluents and direct radiation, including Independent Spent Fuel Storage Installation (ISFSI) operations, cannot exceed 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem to any real individual beyond the controlled area.

b. Basis, Radiological Monitoring


The iodine source term for the defueled facility is negligible at one year post shutdown, and gaseous/particulate source term is thousands of times lower than during power operation. Consequently, offsite sampling of the food chain, and offsite air particulate and iodine sampling for radionuclides normally linked to atmospheric releases have been deleted from the ODCM. Liquid releases during initial stages of decommissioning, although much smaller than during power operation, will continue to be monitored for food chain uptake at the most sensitive indicator location: the discharge canal and adjacent lake shoreline east and west of the plant discharge.

Guidance for this monitoring program is provided by the Radiological Assessment Branch Technical Position on Environmental Monitoring. Program changes may be initiated based on operational experience. The required detection capabilities for environmental sample analyses are tabulated in terms of the lower limits of detection (LLDs). The LLDs required by Table I.H-3 are considered optimum for routine environmental measurements in industrial laboratories.

The LLD is a predetermined limit representing the capability

OFFSITE DOSE CALCULATION MANUAL
APPROVAL CERTIFICATION

The signature below certifies approval for revision to the Offsite Dose Calculation Manual pursuant to Defueled Technical Specifications, Section 6.6.2.4.1, Changes to the ODCM.



Site General Manager

10/30/02
Date