

October 3, 1985

*Per 016*

Docket Nos. 50-266  
and 50-301

DISTRIBUTION:

Docket File  
NRC PDR  
L PDR  
ORB#3 Rdg  
HThompson  
PMKreutzer-3  
TColburn  
OELD  
SECY  
LHarmon

RDiggs  
LTremper  
OPA, CMiles  
ACRS-10  
MVirgilio  
WJones  
TBarnhart-8  
JPartlow  
EJordan  
Gray File +4

Mr. C. W. Fay, Vice President  
Nuclear Power Department  
Wisconsin Electric Power Company  
231 West Michigan Street, Room 308  
Milwaukee, Wisconsin 53201

Dear Mr. Fay:

The Commission has issued the enclosed Amendment Nos. 97 and 101 to Facility Operating License Nos. DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application dated June 4, 1976 as modified January 28, 1980, and October 7, 1983 and revised December 20, 1984 and April 12, 1985.

These amendments add a new section to the Technical Specifications addressing the control of radiological effluents in order to assure continued compliance with Appendix I to 10 CFR Part 50 and 10 CFR 50.34a and 50.36a. These Technical Specifications define limiting conditions for operation and surveillance requirements for radioactive liquid and gaseous effluent monitoring, add additional sampling locations and add additional managerial review and reporting responsibilities.

A copy of the Safety Evaluation and its attached Technical Evaluation Report (TER) are also enclosed. The notice of issuance will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

/s/

Timothy G. Colburn, Project Manager  
Operating Reactors Branch #3  
Division of Licensing

Enclosures:

1. Amendment No. 97 to DPR-24
2. Amendment No. 101 to DPR-27
3. Safety Evaluation with attached TER

cc w/enclosures:  
See next page

ORB#3:DL PMKreutzer 9/12/85	<i>See</i> ORB#3:DL TColburn 9/19/85	ORB#3:DL EJButcher 9/23/85	OELD 9/25/85	AD/OR:DL GOLainas 10/1/85
8510170078 PDR P	851003 ADOCK 05000266 PDR			

Mr. C. W. Fay  
Wisconsin Electric Power Company

Point Beach Nuclear Plant

Mr. Bruce Churchill, Esq.  
Shaw, Pittman, Potts and Trowbridge  
1800 M Street, N.W.  
Washington, DC 20036

Mr. James J. Zach, Manager  
Point Beach Nuclear Plant  
Wisconsin Electric Power Company  
6610 Nuclear Road  
Two Rivers, Wisconsin 54241

Mr. Gordon Blaha  
Town Chairman  
Town of Two Creeks  
Route 3  
Two Rivers, Wisconsin 54241

Chairman  
Public Service Commission  
of Wisconsin  
Hills Farms State Office Building  
Madison, Wisconsin 53702

Regional Administrator  
Nuclear Regulatory Commission,  
Region III  
Office of Executive Director  
for Operations  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

U.S. NRC Resident Inspector's Office  
6612 Nuclear Road  
Two Rivers, Wisconsin 54241



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

WISCONSIN ELECTRIC POWER COMPANY

DOCKET NO. 50-266

POINT BEACH NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 97  
License No. DPR-24

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Wisconsin Electric Power Company (the licensee) dated December 20, 1984 and supplemented April 12, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;  
and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

8510170083 851003  
PDR ADDCK 05000266  
P PDR

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-24 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 97, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 20 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Edward J. Butcher, Acting Chief  
Operating Reactors Branch #3  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 3, 1985



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

WISCONSIN ELECTRIC POWER COMPANY  
DOCKET NO. 50-301  
POINT BEACH NUCLEAR PLANT, UNIT NO. 2  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 101  
License No. DPR-27

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Wisconsin Electric Power Company (the licensee) dated December 20, 1984 and supplemented April 12, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

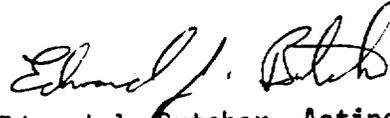
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-27 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 101, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 20 days the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Edward J. Butcher, Acting Chief  
Operating Reactors Branch #3  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 3, 1985

ATTACHMENT TO LICENSE AMENDMENTS NO. 97 AND 101  
TO FACILITY OPERATING LICENSE NO. DPR-24 AND DPR-27  
DOCKET NOS. 50-266 AND 50-301

Revise Appendix A as follows:

Remove Pages

15-ii  
15.3.9-1  
15.3.9-2  
15.3.9-2a  
15.3.9-3  
15.3.9-4  
Table 15.4.1-1 (pg 2 of 4)  
15.4.10-1  
15.4.10-2  
Table 15.4.10-1 Page 1 of 2  
Table 15.4.10-1 Page 2 of 2  
15.6.5-3  
15.6.9-4  
15.6.9-8  
15.6.9-9  
15.6.9-10  
15.6.9-11  
15.6.10-2

Insert Pages

15-ii  
15.3.9-1  
  
Table 15.4.1-1 (pg 2 of 4)  
15.4.10-1  
  
15.6.5-3  
15.6.9-4  
15.6.9-5  
  
15.6.10-2  
15.7.1-1 thru 15.7.1-3  
15.7.2-1  
SITE MAP FIGURE 15.7.1-1  
15.7.3-1 thru 15.7.3-7  
15.7.4-1  
Table 15.7.4-1  
Table 15.7.4-2  
Table 15.7.4-2 (continued)  
Notations for Tables 15.7.4-1  
and 15.7.4-2  
15.7.5-1 thru 15.7.5-8  
15.7.6-1  
Table 15.7.6-1  
Notes for Table 15.7.6-1  
Table 15.7.6-2  
Notes for Table 15.7.6-2  
15.7.7-1 thru 15.7.7-4  
Table 15.7.7-1  
Table 15.7.7-1 (continued)  
Table 15.7.7-2  
Notes for Table 15.7.7-2  
Table 15.7.7-3  
15.7.8-1 thru 15.7.8-6

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
15.5	Design Features	15.5.1-1
15.5.1	Site	15.5.1-1
15.5.2	Containment	15.5.2-1
15.5.3	Reactor	15.5.3-1
15.5.4	Fuel Storage	15.5.4-1
15.6	Administrative Controls	15.6.1/2-1
15.6.1	Responsibility	15.6.1/2-1
15.6.2	Organization	15.6.1/2-1
15.6.3	Facility Staff Qualifications	15.6.3/4/5-1
15.6.4	Training	15.6.3/4/5-1
15.6.5	Review and Audit	15.6.3/4/5-1
15.6.6	Reportable Event Action	15.6.6-1
15.6.7	Action To Be Taken If A Safety Limit Is Exceeded	15.6.7-1
15.6.8	Plant Operating Procedures	15.6.8-1
15.6.9	Plant Reporting Requirements	15.6.9-1
15.6.10	Plant Operating Records	15.6.10-1
15.6.11	Radiation Protection Program	15.6.11-1
15.7	Radiological Effluent Technical Specifications (RETS)	
15.7.1	Definitions	15.7.1-1
15.7.2	Site Description	15.7.2-1
15.7.3	Radioactive Effluent Monitoring Instrumentation Operability Requirements	15.7.3-1
15.7.4	Radioactive Effluent Monitoring Instrumentation Surveillance Requirements	15.7.4-1
15.7.5	Radioactive Effluent Release Limits	15.7.5-1
15.7.6	Radioactive Effluent Sampling and Analysis Requirements	15.7.6-1
15.7.7	Operational Environmental Monitoring Program	15.7.7-1
15.7.8	Administrative Controls	15.7.8-1

15.3.9 Effluent Release

Radioactive Effluent Release limits are contained in specification 15.7.5.

15.4.10 OPERATIONAL ENVIRONMENTAL MONITORING

Radioactive effluent sampling and analysis requirements and operational environmental monitoring requirements are specified in 15.7.6 and 15.7.7 respectively.

TABLE 15.4.1-1 (Continued)  
(Page 2 of 4)

Unit 1 - Amendment No. 15, 20, 22, 27  
Unit 2 - Amendment No. 21, 25, 26, 101

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
10. Rod Position Bank Counters	S (1)**	N.A.	N.A.	1) With analog rod position
11. Steam Generator Level	S **	R	M (1)**	1) Includes test of logic for reactor trip on low-low level and automatic actuation logic for auxiliary feedwater pumps
12. Steam Generator Flow Mismatch	S **	R	M **	
13. Charging Flow	N.A.	R	N.A.	
14. Residual Heat Removal Pump Flow	N.A.	R	N.A.	
15. Boric Acid Tank Level	D	R	N.A.	
16. Refueling Water Storage Tank Level	N.A.	R	N.A.	
17. Volume Control Tank Level	N.A.	R	N.A.	
18. Reactor Containment Pressure	D	R	B/W(1)**	1) Isolation valve signal
19. Radiation Monitoring System	D	R	M	1) Radioactive Effluent Monitoring Instrumentation Surveillance Requirements are specified in 15.7.4.
20. Boric Acid Control	N.A.	R	N.A.	
21. Containment Water Level	M	R	N.A.	
22. Turbine Overspeed Trip*	N.A.	R	M (1)**	1) Block trip
23. Accumulator Level and Pressure	S	R	N.A.	

\*Overspeed Trip Mechanism, and Independent Turbine Speed Detection and Valve Trip System.

\*\*Not required during periods of refueling shutdown, but must be performed prior to starting up if it has not been performed during the previous surveillance period.

15.6.5 REVIEW AND AUDIT (Continued)

15.6.5.1 Manager's Supervisory Staff (Continued)

- h. Review the Facility Fire Protection Program and implementing procedures at least once per 24 months.
- i. Investigate, review, and report on all reportable events.
- j. Review every release of radioactive material to the environment in excess of the limits specified in Section 15.7.5. Such review will include a summary of evaluation, recommendation and disposition of corrective action to prevent recurrence.
- k. Review all changes to the PCP and ODCM.

15.6.5.1.7 The Manager's Supervisory Staff shall have the following responsibility:

- a. Serve as an advisory committee to the Manager.
- b. Make recommendations to the Manager for proposals under items a. through d. above. In the event of disagreement between a majority of the Supervisory Staff and decisions by the Manager, the course of action will be determined by the Manager and the disagreement recorded in the Staff minutes.
- c. Make recommendations as to whether or not proposals considered by the Staff involve unreviewed safety questions.
- d. Review and approve the contents of a report for each reportable event. Copies of all such reports shall be submitted to the Vice President - Nuclear Power and the Chairman of the Off-Site Review Committee.
- e. Written minutes of each meeting shall be reviewed by staff members and copies shall be provided to the Vice President - Nuclear Power and Chairman of the Off-Site Review Committee.

15.6.9.2 DELETED

15.6.9.3 Unique Reporting Requirements

The following written reports shall be submitted to the Director, Office of Nuclear Reactor Regulation, USNRC:

- A. Each integrated leak test shall be the subject of a summary technical report, including results of the local leak rate tests and isolation valve leak rate tests since the last report. The report shall include analysis and interpretations of the results which demonstrate compliance with specified leak rate limits.
- B. Poison Assembly Removal From Spent Fuel Storage Racks  
Plans for removal of any poison assemblies from the spent fuel storage racks shall be reported and described at least 14 days prior to the planned activity. Such report shall describe neutron attenuation testing for any replacement poison assemblies, if applicable, to confirm the presence of boron material.
- C. Overpressure Mitigating System Operation  
In the event the overpressure mitigating system is operated to relieve a pressure transient which, by licensee's evaluation, could have resulted in an overpressurization incident had the system not been operable, a special report shall be prepared and submitted to the Commission within 30 days. The report shall describe the circumstances initiating the transient, the effect of the system on the transient and any corrective action necessary to prevent recurrence.

D. Dose Equivalent I-131

With total cumulative operating time at a primary coolant specific activity greater than 1.0 microcurie per gram Dose Equivalent I-131 exceeding 500 hours in any consecutive 6-month period, submit a report within 30 days indicating the number of hours above this limit.

E. Failure of Containment High-Range Radiation Monitor

A minimum of two in-containment radiation-level monitors with a maximum range of  $10^8$  rad/hr ( $10^7$ /hr for photos only) should be operable at all times except for cold shutdown and refueling outages. This is specified in Table 15.3.5-5, item 7. If the minimum number of operable channels are not restored to operable condition within seven days after failure, a special report shall be submitted to the NRC within thirty days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

F. Failure of Main Steam Line Radiation Monitors

If a main steam line radiation monitor (SA-11) fails and cannot be restored to operability in seven days, prepare a special report outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the channel to operable status within thirty days of the event.

15-6.9-5

Unit 1 - Amendment No. 77, 92, 97  
Unit 2 - Amendment No. 76, 96, 101

- M. Test results, in units of microcuries, for leak tests performed pursuant to Specification 15.4.12.
- N. Record of annual physical inventory verifying accountability of sources subject to Specification 15.4.12.
- O. \*Records of training and qualification for current plant NRC licensed staff and key personnel.
- P. \*Records of in-service inspections performed pursuant to these Technical Specifications.
- Q. \*Records of Quality Assurance activities required by the QA Manual.
- R. \*Records of reviews performed pursuant to 10 CFR 50.59.
- S. \*Records of meetings of the Manager's Supervisory Staff and the Off-Site Review Committee.
- T. \*Records of Environmental Qualification which are covered under the provisions of paragraph 15.6.12.
- U. \*Records of the service life of all snubbers in accordance with Specification 15.4.13.4.
- V. \*Records of analyses for radiological environmental monitoring.

\*Items will be permanently retained.

15.6.10-2

Unit 1 - Amendment No. ~~88~~, 97  
Unit 2 - Amendment No. ~~8A~~, 101

## 15.7 RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS)

RETS do not directly expand the responsibilities of the licensed operators of the Point Beach Nuclear Plant Units 1 and 2, and the material contained in this section of these Technical Specifications will not be the subject of SRO/RO licensing examinations.

### 15.7.1 DEFINITIONS

The definitions for frequently used terminology in these RETS are stated below. These definitions are supplemental to those definitions provided in Section 15.1.

#### A. Equivalent Curie

An equivalent Curie is that quantity of a reference isotope that will produce the same dose as the actual amount of a particular isotope in question.

#### B. Lower Level of Detection (LLD)

The LLD is defined, for purposes of these specifications, as the smallest concentration of radioactive material in a sample that will yield a net count, above system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a real signal. For a particular measurement system, which may include radiochemical separation:

$$LLD = \frac{4.66 S_b}{E \times V \times 2.22 \times 10^6 \times Y \times \exp(-\lambda \Delta t)}$$

Where:

LLD = the a priori lower limit of detection as defined above, in micro-curies per unit volume or mass as applicable.

S<sub>b</sub> = the standard deviation of the background counting rate or the counting rate of a blank sample as appropriate in counts per minute,

E = the counting efficiency in counts per disintegration,

V = the sample size in units of volume or mass as applicable,  
 $2.22 \times 10^6$  = the number of disintegrations per minute per microcurie,  
Y = the fractional radiochemical yield, when applicable,  
 $\lambda$  = the radioactivity decay constant for the particular radionuclide, and  
 $\Delta t$  = for plant effluents,  $\Delta t$  is the elapsed time between the midpoint of sample collection and time of counting: for environmental samples,  $\Delta t$  is the elapsed time between sample collection, or end of the collection period, and the time of counting.

Typical values of E, V, Y, and  $\Delta t$  will be used in the calculation. It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

C. Members of the Public

Members of the public include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors, or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational, or other purposes not associated with the plant.

D. Offsite Dose Calculation Manual (ODCM)

The Offsite Dose Calculation Manual contains the methodology for the determination of gaseous and liquid effluent monitoring alarm or trip setpoints, the methodology for determining compliance with release limits, and the methodology used in the calculation of offsite doses due to radioactive gaseous and liquid effluents.

E. Radioactive Waste Handling

1. Process Control Program (PCP)

The Process Control Program contains the methodologies used to ensure

that the processing and packaging of solid radioactive waste will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, and all other Federal and State regulations governing the disposal of the radioactive waste.

2. Solidification

The conversion of liquid wastes into a form that meets shipping and burial ground requirements.

F. Source Check

A source check is an assessment of channel response when the channel detector is exposed to a source of increased radiation.

G. Unrestricted Area

An unrestricted area is any area at or beyond the site boundary where access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

H. Gaseous Radioactive Effluent Treatment System

The gaseous radioactive effluent treatment system consists of those components or devices utilized to reduce gaseous radioactive material in effluents. The system consists of the following:

- a. gas decay tanks,
- b. drumming area ventilation exhaust duct filter assembly,
- c. Unit 1 and 2 containment purge exhaust filter assemblies,
- d. air ejector decay duct filter assembly,
- e. auxiliary building ventilation filter assembly (nominal 11,214 cfm exhaust pathway),
- f. chemistry laboratory exhaust duct filter assembly,
- g. service building ventilation exhaust duct filter assembly,
- h. auxiliary building ventilation filter assemblies (nominal 34,150 cfm exhaust pathway)

I. Liquid Radioactive Effluent Treatment System

The liquid radioactive effluent treatment system consists of those components or devices utilized to reduce liquid radioactive material in effluents. The system consists of the following:

- a. blowdown evaporator or waste evaporator,
- b. polishing demineralizers,
- c. boric acid evaporator feed demineralizers,
- d. boric acid evaporators,
- e. boric acid evaporator condensate demineralizers.

### 15.7.3 RADIOACTIVE EFFLUENT MONITORING INSTRUMENTATION OPERABILITY REQUIREMENTS

#### Applicability

Applies to the operability and alarm or trip setpoint requirements for liquid and gaseous effluent monitoring instrumentation.

#### Objective

To ensure liquid and gaseous radioactive effluents are adequately monitored and to ensure that alarm or trip setpoints are established such that effluent releases do not exceed the limits specified in Specification 15.7.5.

#### Specifications

##### A. Radioactive Liquid Effluent Monitoring Instrumentation

1. The radioactive liquid effluent monitoring instrumentation channels listed in Table 15.7.3-1 shall be operable. The alarm or trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.
2. If fewer than the minimum number of radioactive liquid effluent monitoring channels are operable, the action statement listed in Table 15.7.3-1 opposite the channel shall be taken. Best effort shall be made to return an inoperable channel to operable status within 30 days. If the channel is not returned to an operable status within 30 days, the circumstances of the instrument failure and schedule for repair shall be reported to the NRC Resident Inspector.
3. If a radioactive liquid effluent monitoring instrumentation channel alarm or trip setpoint is found less conservative than required by the ODCM, the channel shall be declared inoperable or the setpoint shall be changed to the ODCM value or a more conservative value.

##### B. Radioactive Gaseous Effluent Monitoring Instrumentation

1. The radioactive gaseous effluent monitoring instrumentation channels listed in Table 15.7.3-2 shall be operable. The alarm or trip setpoints

of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

2. If fewer than the minimum number of radioactive gaseous effluent monitoring channels are operable, the action statement listed in Table 15.7.3-2 opposite the channel shall be taken. Best effort shall be made to return an inoperable channel to operable status within 30 days. If the channel is not returned to an operable status within 30 days, the circumstances of the instrument failure and schedule for repair shall be reported to the NRC Resident Inspector.
3. If the radioactive gaseous effluent monitoring instrumentation channel alarm or trip setpoint is found less conservative than required by the ODCM, the channel shall be declared inoperable or the setpoint shall be changed to the ODCM determined value or a more conservative value.

TABLE 15.7.3-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>Instrument</u>	<u>Minimum Channels Operable</u>	<u>Action</u>
1. Liquid Radwaste System		
a. RE-223, Waste Distillate Tank Discharge, or RE-229, Service Water Discharge (for applicable unit)	1	Note 1
b. RE-218, Waste Condensate Tank Discharge, or RE-229, Service Water Discharge (for applicable unit)	1	Note 1
c. Waste Condensate Tank Discharge Flow Meter	1	Note 4
d. Waste Distillate Tank Flow Rate Recorder	1	Note 4
2. Steam Generator Blowdown System		
a. For Each Unit; RE-219, Steam Generator Blowdown Liquid Discharge, or RE-222, Blowdown Tank Monitor, or RE-229, Service Water Discharge	1	Note 2
b. Steam Generator Blowdown Flow Indicators (1 per steam generator)	1	Note 9
3. Service Water System		
a. RE-229, Service Water Discharge (1 per unit)	1	Note 3
b. For Each Unit; RE-216, Containment Cooling Fan Service Water Return, or RE-229, Service Water Discharge	1	Note 3
c. RE-220, Spent Fuel Pool Heat Exchanger Service Water Outlet or RE-229, Service Water Discharge (for applicable unit)	1	Note 3
4. Retention Pond Discharge System		
a. RE-230, Retention Pond Discharge	1	Note 3
b. Retention Pond Discharge Composite Sampler	1	Note 8
c. Retention Pond Discharge Flow Determination	NA	*

\* Retention pond discharge flow may be determined from pump run time and pump performance curves.

TABLE 15.7.3-2  
RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>Instrument</u>	<u>Minimum Channels Operable</u>	<u>Action</u>
1. Gas Decay Tank System		
a. RE-214, Noble Gas (Auxiliary Building Vent Stack), or RE-315 Noble Gas (Auxiliary Building Vent SPING)	1	Note 1
b. Gas Decay Tank Flow Measuring Meter	1	Note 4
2. Auxiliary Building Ventilation System		
a. RE-214, Noble Gas (Auxiliary Building Vent Stack) or RE-315, Noble Gas (Auxiliary Building Vent SPING)	1	Note 6
b. Isokinetic Iodine and Particulate - Continuous Air Sampling System	1	Note 5
3. Condenser Air Ejector System		
a. RE-225, Noble Gas (Combined Air Ejector Discharge Monitor); or RE-215, Noble gas (Air Ejector Monitors - 1 per unit); or RE-214, Noble Gas (Auxiliary Building Vent Stack); or RE-315, Noble Gas (Auxiliary Building Vent SPING)	1	Note 6
b. Flow Rate Monitor - Air Ejectors	1	Note 9
4. Containment Purge and Forced Vent System		
a. RE-212, Noble Gas Monitors (1 per unit); or RE-305, Noble Gas (Purge Exhaust SPING - 1 per unit)	1	Note 6
b. 30 cfm Forced Vent Path Flow Indicators	1	Note 9

TABLE 15.7.3-2 (CONTINUED)

<u>Instrument</u>	<u>Minimum Channels Operable</u>	<u>Action</u>
c. Iodine and Particulate - Continuous Air Samplers	1	Note 5
d. Sampler Flow Rate Measuring Device	1	Note 9
5. Fuel Storage and Drumming Area Ventilation System		
a. RE-221, Noble Gas (Drumming Area Stack), or RE-325, Noble Gas (Drumming Area SPING)	1	Note 6
b. Isokinetic Iodine and Particulate - Continuous Air Sampling System	1	Note 5
6. Gas Stripper Building Ventilation		
a. RE-224, Noble Gas (Gas Stripper Building), or RE-305, (Unit 2 Purge Exhaust SPING)	1	Note 6
b. Iodine and Particulate - Continuous Air Sampler	1	Note 5
c. Sampler Flow Rate Measuring Device	1	Note 9
7. Waste Gas Holdup System Explosive Gas Monitoring System		
a. Oxygen Monitor*	1	Note 7

\* Effective upon completion of installation and checkout but in no case later than April 1, 1986.

NOTATIONS FOR TABLES 15.7.3-1 AND 15.7.3-2

- Note 1: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided that prior to initiating a release, two separate samples are analyzed by two technically qualified people in accordance with the applicable part of Tables 15.7.6-1 and 15.7.6-2 and the release rate is reviewed by two technically qualified people.
- Note 2: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided grab samples are analyzed for gamma radioactivity in accordance with Table 15.7.6-1 at least once every 24 hours when the secondary coolant specific activity is less than 0.01  $\mu\text{Ci/cc}$  dose equivalent I-131 or once every 12 hours when the activity is greater than 0.01  $\mu\text{Ci/cc}$  dose equivalent I-131.
- Note 3: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided that at least once every 12 hours grab samples are collected and analyzed in accordance with Table 15.7.6-1.
- Note 4: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided the flow rate is estimated at least once every four hours during actual gaseous or liquid batch releases.
- Note 5: If the number of channels operable is fewer than the minimum required, effluent releases via the affected pathway may continue provided samples are continuously collected with auxiliary sampling equipment.
- Note 6: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided grab samples are collected at least once per 12 hours and are analyzed in accordance with Table 15.7.6-2.
- Note 7: If the number of channels operable is fewer than the minimum required, addition of waste gas to the Waste Gas Holdup System may continue for up to 14 days, provided grab samples are taken from the on-service gas decay tank and analyzed either daily during normal operations or every four hours when the

primary system is being degassed (other than normal gas stripping of the letdown flow). If the monitoring system is out of service for greater than 14 days, in addition to the above sampling, a report of the cause and corrective action for failure and repair of the gas monitor shall be included in the Semiannual Monitoring Report.

Note 8: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided grab samples are collected twice per week and analyzed in accordance with Table 15.7.6-1.

Note 9: If the number of channels operable is fewer than the minimum required, effluent releases via this pathway may continue provided the flow is estimated or determined with auxiliary indication at least once every 24 hours.

#### 15.7.4 RADIOACTIVE EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

##### Applicability

Applies to the periodic inspection, testing, calibration and verification of operability requirements for radioactive liquid and gaseous effluent monitoring instrumentation.

##### Objective

To verify that radioactive liquid and gaseous effluent monitoring instrumentation are periodically demonstrated to be operable.

##### Specifications

- A. Radioactive Liquid Monitoring Instrumentation Surveillance Requirements
  - 1. Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated operable by performance of the channel check, calibration, functional test, and source check at the frequencies shown in Table 15.7.4-1.
- B. Radioactive Gaseous Monitoring Instrumentation Surveillance Requirements
  - 1. Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated operable by performance of the channel check, calibration, functional test, and source check at the frequencies shown in Table 15.7.4-2.

TABLE 15.7.4-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Instrument Description</u>	<u>Channel Check</u>	<u>Calibrate</u>	<u>Functional Test</u>	<u>Source Check</u>
<b>1. Liquid Radwaste System</b>				
a. RE-223, Waste Distillate Tank Discharge	D	R	Q	P
b. RE-218, Waste Condensate Tank Discharge	D	R	Q	P
c. Waste Condensate Tank Discharge Flow Meter	P/D	R	NA	NA
d. Waste Distillate Tank Flow Rate Recorder	P/D	R	NA	NA
<b>2. Steam Generator Blowdown System</b>				
a. RE-219, Steam Generator Blowdown Liquid Discharge (1 per unit)	D	R	Q	M
b. RE-222, Blowdown Tank Monitor (1 per unit)	D	R	Q	M
c. Steam Generator Blowdown Flow Indicator (1 per steam generator)	D	R	NA	NA
<b>3. Service Water System</b>				
a. RE-229, Service Water Discharge (1 per unit)	D	R	Q	M
b. RE-216, Containment Cooling Fan Service Water Return (1 per unit)	D	R	Q	M
c. RE-220, Spent Fuel Pool Heat Exchanger Service Water Outlet	D	R	Q	M
<b>4. Retention Pond Discharge System</b>				
a. RE-230, Retention Pond Discharge	D	R	Q	M
b. Retention Pond Discharge Composite Sampler	W	NA	NA	NA
c. Retention Pond Discharge Effluent Sump Pumps	W	R	NA	NA

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

TABLE 15.7.4-2

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Channel Description</u>	<u>Channel Check</u>	<u>Calibrate</u>	<u>Functional Test</u>	<u>Source Check</u>
1. Gas Decay Tank System				
a. RE-214, Noble Gas (Auxiliary Building Vent Stack)	D	R	Q	M
b. Gas Decay Tank Flow Measuring Device	P	R	NA	NA
2. Auxiliary Building Ventilation System				
a. RE-214, Noble Gas (Auxiliary Building Vent Stack)	D	R	Q	M
b. RE-315, Noble Gas (Auxiliary Building SPING)	D	R	Q	M
c. Isokinetic Iodine and Particulate Continuous Air Sampling System	W	R	NA	NA
3. Condenser Air Ejector System				
a. RE-225, Noble Gas (Combined Air Ejector Discharge)	D	R	Q	M
b. RE-215, Noble Gas (Air Ejectors - 1 per unit)	D	R	Q	M
c. Flow Rate Monitor - Air Ejectors (1 per unit)	D	R	NA	NA
4. Containment Purge and Continuous Vent System				
a. RE-212, Noble Gas (1 per unit)	D	R	Q	M*
b. 30 cfm Vent Path Flow Indicator	P/D	R	NA	NA

TABLE 15.7.4-2 (Continued)

<u>Instrument Description</u>	<u>Channel Check</u>	<u>Calibrate</u>	<u>Functional Test</u>	<u>Source Check</u>
c. RE-305, Noble Gas (Purge Exhaust SPING - 1 per unit)	D	R	Q	M*
d. Iodine and Particulate Continuous Air Sampler	P/W	NA	NA	NA
e. Sampler Flow Rate Measuring Device	P/D	R	NA	NA
5. Fuel Storage and Drumming Area Ventilation Stack				
a. RE-221, Noble Gas (Drumming Area Vent Stack)	D	R	Q	M
b. RE-325, Noble Gas (Drumming Area SPING)	D	R	Q	M
c. Isokinetic Iodine and Particulate Continuous Air Sampling System	W	NA	NA	NA
6. Gas Stripper Building Ventilation System				
a. RE-224 Noble Gas	D	R	Q	M
b. Iodine and Particulate Continuous Air Sampler	W	NA	NA	NA
c. Sampler Flow Rate Measuring Device	W	R	NA	NA
7. Waste Gas Holdup System Explosive Gas Monitoring System				
a. Oxygen Monitor *	D	Q**	Q	NA

\*Effective upon completion of installation and checkout but in no case later than April 1, 1986.

NOTATIONS FOR TABLES 15.7.4-1 AND 15.7.4-2

D = Daily

W = Weekly

M = Monthly

Q = Quarterly

R = Each Refueling Interval (but not to exceed 18 months)

P/D = Prior to or immediately upon initiation of a release or daily if a release continues for more than one day

P/W = Prior to or immediately upon initiation of a release or weekly if a release continues for more than one week

P = Prior to or immediately upon initiation of a release

\* = Source check required prior to containment purge

\*\* = The channel calibration shall include the use of standard gas samples appropriate to the recommendations of the manufacturer of the gas analyzer equipment in use and include calibration points in the range of interest.

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

## 15.7.5 RADIOACTIVE EFFLUENT RELEASE LIMITS

### Applicability

Applies to the controlled release of radioactive materials in liquid and gaseous effluents to unrestricted areas.

### Objective

To ensure controlled releases of radioactive materials in liquid and gaseous effluents to unrestricted areas are within concentration limits specified in 10 CFR 20 and to ensure the quantities of radioactive material released during any calendar year are such that resulting radiation exposures do not exceed limits corresponding to the 10 CFR 50 Appendix I dose objectives.

### Specifications

#### A. Radioactive Liquid Effluent Concentrations

1. Alarm setpoints for liquid effluent monitors shall be determined and adjusted utilizing the methodologies and parameters given in the ODCM.
2. The liquid effluent monitor setpoints shall be established to ensure that radioactive materials released as effluents shall not result in concentrations to unrestricted areas in excess of the values specified in 10 CFR 20, Appendix B, Table II.
3. During release of radioactive liquid effluents, at least one condenser circulating water pump shall be in operation and the service water return header shall be lined up only to the unit whose circulating water pump is operating.

#### B. Radioactive Liquid Effluent Release Limits

1. The annual calculated total quantity of radioactive material above background released from PBNP in liquid effluents shall not result in an unrestricted area estimated annual dose or dose commitment from all exposure pathways to any individual in excess of 6 millirem to the total body or 20 millirem to any organ.

2. Quarterly limits are defined as one quarter (1/4) of the annual limits.
3. Compliance with these release limits will be demonstrated by periodic calculations utilizing either of the following methods:
  - a. the calculation of doses based on actual releases; or
  - b. the calculation and comparison of equivalent Curies released to equivalent Curie release limits, which would result in the above described dose limits, as described in the ODCM.

The methodology for converting actual activity to equivalent activity is provided in the ODCM and is based upon dose conversion factors contained in Regulatory Guide 1.109, Revision 1, October 1977.

C. Radioactive Gaseous Effluent Concentrations

1. Alarm setpoints for the gaseous effluent monitors shall be determined and adjusted utilizing the methodologies and parameters given in the ODCM.
2. The gaseous effluent monitor setpoints are established to ensure that radioactive materials released shall not result in concentrations to unrestricted areas in excess of the values specified in 10 CFR 20, Appendix B, Table II.
3. During the release of radioactive gaseous effluents from the gas decay tanks through the auxiliary building vent, at least one auxiliary building exhaust fan shall be in operation.

D. Radioactive Gaseous Effluent Release Limits

1. The annual calculated total quantity of radioactive materials above background released from PBNP to the atmosphere shall not result in an unrestricted area estimated annual dose or dose commitment from all exposure pathways to any individual in excess of the following:
  - a. 10 millirem to the total body or 30 millirem to the skin from gaseous effluents near ground level; and

- b. 30 millirem to any organ from all radioiodines and radioactive material in particulate form.
- 2. Quarterly limits are defined as one quarter (1/4) of the annual limits.
- 3. Compliance with these release limits will be demonstrated by periodic calculations utilizing either of the following methods:
  - a. the calculation of doses based on actual releases, or
  - b. the calculation and comparison of equivalent Curies released to the equivalent Curie release limits, which would result in the above dose limits, as described in the ODCM.

The methodology for converting actual activity to equivalent activity is provided in the ODCM and is based upon dose conversion factors contained in Regulatory Guide 1.109, Revision 1, October 1977.

E. Tritium Adjustment

The release limit for tritium in liquid effluents may be increased, provided it is accompanied by a proportional decrease in the release limit for tritium in gaseous effluents. Similarly, the release limit for tritium in gaseous effluents may be increased, provided it is accompanied by a proportional decrease in the release limit for tritium in liquid effluents. The tritium adjustment will be made in accordance with the following formula:

$$\frac{\text{Annual Liquid Tritium Releases}}{\text{Annual Liquid Tritium Limit}} + \frac{\text{Annual Gaseous Tritium Releases}}{\text{Annual Gaseous Tritium Limit}} \leq 2.0$$

F. Quarterly Summary

- 1. A summary of radioactive effluent releases shall be made on a quarterly basis as described in the ODCM.
- 2. If the calculations required by B.3 or D.3 of this specification exceed the corresponding quarterly limit during any calendar quarter, a summary of radioactive effluent releases shall be made monthly until it is determined that release quantities are within the annual limits.
- 3. If the calculations required by B.3 or D.3 of this specification exceed twice the corresponding quarterly limit during any calendar quarter, actual doses will be calculated as described in the ODCM, and a special report will be prepared and submitted per Specification 15.7.8.4.E.

4. If the calculations required by B.3 or D.3 of this specification demonstrate that quarterly releases exceed the quarterly limit, corrective actions shall be taken to ensure that subsequent releases in that calendar year will be in compliance with quarterly and annual limits.

G. Radioactive Effluent Treatment

1. The gaseous radioactive effluent treatment system shall be operated. If the gaseous effluent treatment system becomes inoperable, the effluent reporting requirements of section 15.7.5.F of this Specification shall apply. These provisions do not include the gas decay tanks, the auxiliary building ventilation exhaust charcoal filter, and the air ejector decay duct charcoal filter assembly.
  - a. A gas decay tank(s) shall be operated whenever required to maintain gaseous releases within the limits of Specification 15.7.5.D.
  - b. The auxiliary building ventilation exhaust charcoal filter shall be operated when required to maintain gaseous releases within the limits of Specification 15.7.5.D for radioiodines.
  - c. The air ejector charcoal filter shall be operated when required to maintain releases within the limit of Specification 15.7.5.D for radioiodines.
2. The liquid radioactive effluent treatment system shall be operated. If the liquid radioactive effluent system becomes inoperable, the effluent reporting requirements of section 15.7.5.F of this Specification shall apply. These provisions do not include the processing of steam generator blowdown, the processing of liquid wastes collected in the waste holdup tank, the processing of secondary side sampling and turbine building wastes through the retention pond, and the processing of preplanned tank batch releases.
  - a. Steam generator blowdown shall be processed to reduce radioactive effluents when required to maintain releases within the limits of Specification 15.7.5.B.
  - b. Wastes collected in the waste holdup tank shall be processed to reduce radioactive effluents when required to maintain releases within the limits of Specification 15.7.5.B.

- c. Preplanned tank batch releases may be made without processing under any of the following conditions, provided the release limits of Specification 15.7.5.B are not exceeded:
1. Processing or disposal of tank contents would prevent plant operation or delay plant start-up or shutdown; or
  2. The tank release is necessary to conform to Technical Specification operating requirements; or
  3. The tank release is necessary to eliminate a chemical contaminant to satisfy chemistry specifications; or
  4. The tank release is desired for any other reason and a cost-benefit analysis has been performed.

H. Total Dose

1. Compliance with the provisions of Appendix I to 10 CFR 50 is adequate demonstration of conformance to the standards set forth in 40 CFR 190.
2. If the calculations required by B.3 or D.3 of this specification exceed twice the annual limits as specified in Specifications 15.7.5.B.1 and 15.7.5.D.1, dose calculations shall be performed as described in the ODCM and shall include exposures from effluent pathways and direct radiation contributions from the reactor units and from any outside storage tanks.
3. A report will be submitted to the Commission within 30 days upon completion of the dose calculations required by Specification 15.7.5.H.2, if the calculated dose to any member of the general public exceeds the 40 CFR 190 annual dose limits.

I. Explosive Gas Mixture

The concentration of oxygen in the on-service gas decay tank shall be limited to less than or equal to 4% by volume.

1. If the concentration of oxygen in the on-service gas decay tank is greater than 4% by volume, immediately suspend all additions of waste gases to the on-service gas decay tank.
2. Reduce the oxygen concentration to less than 4% oxygen by volume as soon as possible. If the on-service gas decay tank is at or

near capacity and the tank must be isolated to permit the required decay time to conform with release limits of 15.7.5.D, it will not be possible to immediately reduce the oxygen concentration. In this case, the tank will be isolated and the oxygen concentration reduced as soon as the gas decay requirements are satisfied.

J. Solid Radioactive Waste

The solid radwaste system shall be used in accordance with the Process Control Program to process radioactive wastes to meet all shipping and burial ground requirements. If the provisions of the Process Control Program are not satisfied, shipments of defectively processed or defectively packaged radioactive waste from the site will be suspended. The Process Control Program shall be used to verify solidification of radwaste.

Basis

Liquid wastes from the radioactive waste disposal system are diluted by the circulating water system prior to release to Lake Michigan<sup>(1)</sup>. With two pumps operating per unit, the rated flow of the circulating water system is approximately 356,000 gpm per unit. Operation of a single circulating water pump per unit reduces the nominal flow rate by about 40%. Liquid waste from the waste disposal system may be discharged to the circulating water system of either unit via the service water return header. Because of the low radioactivity levels in the circulating water discharge, the concentrations of liquid radioactive effluents at this point are not measured directly. The concentrations in the circulating water discharge are calculated from the measured concentration of the liquid effluent, the discharge flow rate of the effluent and the nominal flow in the circulating water system.

The concentration of liquid radioactive wastes in the circulating water discharge does not exceed 10 CFR 20 MPC values. The average concentrations at the intake of the nearest public water supply are well below the MPC values of 10 CFR 20, Appendix B<sup>(2)</sup>. Thus, discharge of liquid wastes not exceeding the design release limits will not result in significant exposure to members of the public as a result of consumption of drinking water from the lake, even if the effect of potable water treatment systems on reducing radioactive concentrations of the water supply is conservatively neglected.

Prior to release to the atmosphere, gaseous wastes are mixed in the auxiliary building vent with the flow from at least one of two auxiliary building exhaust fans. Further dilution then occurs in the atmosphere.

The limits prescribed in these Specifications take atmospheric dilution into account and ensure that at the point of maximum ground concentration (site boundary) the requirements of 10 CFR 20 will not be exceeded at any time and that the design objectives of Appendix I to 10 CFR 50 will not be exceeded on an annual basis. The limits and objectives are based on the highest long term values of X/Q that occur at the nearest portion of the site boundary.

The release of radioactive materials in liquid effluents to unrestricted areas will not exceed the limits set forth in Section 15.7.5.B.1 and will be as low as is reasonably achievable in accordance with the requirements of 10 CFR Part 50.34a and 50.36a. These Specifications provide reasonable assurance that the resulting average annual dose or dose commitment from liquid effluents from each unit of the Point Beach Nuclear Plant for any individual in an unrestricted area from all pathways of exposure will not exceed 3 mrem to the total body or 10 mrem to any organ. These Specifications also provide reasonable assurance that no individual in an unrestricted area will receive an annual dose to the total body greater than 5 mrem or an annual dose to the skin greater than 15 mrem from these gaseous effluents.

At the same time, these Specifications permit the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided with a dependable source of power even under unusual operating conditions which may temporarily result in releases higher than such numerical guides for design objectives but still within levels that assure that the average population exposure is equivalent to small fractions of doses from natural background radiation.

The release limits set forth in this Specification are derived from the dose evaluation performed in accordance with Appendix I to 10 CFR Part 50. In the evaluation, certain maximum calculated doses to an individual result from the calculated effluent releases. Release limits are defined by scaling calculated

releases upward to the point at which corresponding doses reach the applicable limit specified in Appendix I to 10 CFR Part 50.

The radioactive liquid and gaseous effluent instrumentation is provided to monitor and control the releases of radioactive materials in liquid and gaseous effluents during actual or potential releases. The trip setpoints for these instruments are calculated utilizing the methodology in the Offsite Dose Calculation Manual.

The requirement that the appropriate portions of the liquid and gaseous radwaste treatment systems be used when specified provides assurance that the releases of radioactive materials in liquid and gaseous effluents will be kept "as low as is reasonably achievable".

Compliance with the provisions of Appendix I to 10 CFR Part 50 constitutes adequate demonstration of conformance to the standards set forth in 40 CFR Part 190 regarding the dose commitment to individuals from the uranium fuel cycle. The Specifications require that if actual quantities of radioactive materials released exceed twice the quantities associated with the design dose objective of Appendix I to 10 CFR Part 50, actual doses will be calculated and a special report will be submitted.

References:

- (1) FSAR, Section 10.2
- (2) FSAR, Section 2, Appendix 2A
- (3) FSAR, Sections 2.6 and 2.7

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

15.7.6 RADIOACTIVE EFFLUENT SAMPLING AND ANALYSIS REQUIREMENTS

Applicability

Applies to the sampling frequency, analysis frequency, and analysis requirements for radioactive liquid and gaseous effluents.

Objectives

To verify that the concentrations and quantities of radioactive material released from the site in liquid and gaseous effluents do not exceed the limits specified in Specification 15.7.5.

Specifications

- A. Radioactive Liquid Waste Sampling and Analysis
  - 1. The concentration of radioactivity in liquid waste shall be determined by sampling and analysis in accordance with Table 15.7.6-1.
- B. Radioactive Gaseous Waste Sampling and Analysis
  - 1. The concentration of radioactivity in gaseous wastes shall be determined by sampling and analyses in accordance with Table 15.7.6-2.

TABLE 15.7.6-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

<u>Liquid Release Type</u>	<u>Sampling Frequency</u>	<u>Minimum Analysis Frequency</u>	<u>Type of Activity Analysis</u> <sup>5</sup>	<u>Lower Level of Detection</u> <sup>1</sup> ( $\mu\text{Ci/cc}$ )
<b>1. Batch Releases<sup>2</sup></b>				
a. Waste Condensate Tank	Prior to Release	Prior to Release	Gamma Emitters	$5 \times 10^{-7}$
b. Waste Distillate Tank			I-131	$1 \times 10^{-6}$
c. Monitor Tanks				
d. Other tanks containing radioactivity to be discharged.		Monthly on composites obtained from batches released during the current month	Gross Alpha Tritium	$1 \times 10^{-7}$ $1 \times 10^{-5}$
		Quarterly on composites obtained from batches released during the current quarter	Sr-89/90	$5 \times 10^{-8}$
<b>2. Continuous Releases<sup>3</sup></b>				
a. Steam Generator Blowdown	Grab Samples Twice Weekly	Twice Weekly	Gamma Emitters	$5 \times 10^{-7}$
			I-131	$1 \times 10^{-6}$
b. Service Water		Monthly on Grab Composites	Gross Alpha Tritium	$1 \times 10^{-7}$ $1 \times 10^{-5}$
		Quarterly on Grab Composites	Sr-89/90	$5 \times 10^{-8}$
c. Retention Pond	Continuous Composite <sup>4</sup>	Weekly	Gamma Emitters	$5 \times 10^{-7}$
			I-131	$1 \times 10^{-6}$
			Monthly on Weekly Composite	Gross Alpha Tritium
		Quarterly on Monthly Composites.	Sr-89/90	$5 \times 10^{-8}$

NOTES FOR TABLE 15.7.6-1

1. The principal gamma emitter for which the gamma isotopic LLD applies is Cs-137. Because gamma isotopic analyses are performed, the LLDs for all other gamma emitters are inherently determined by the operating characteristics of the counting system. All identifiable gamma emitters will be reported in the Semiannual Monitoring Report.
2. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses each batch shall be isolated and mixed to assure representative sampling.
3. A continuous release is the discharge of liquid wastes of a non-discrete volume; e.g., from a volume of a system that has an input flow during the release.
4. A continuous composite is one in which the method of sampling employed results in a specimen that is representative of the liquids released.
5. Identified entrained noble gases shall be reported as gaseous effluents.

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

TABLE 15.7.6-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

<u>Gaseous Release Type</u>	<u>Sampling Frequency</u>	<u>Minimum Analysis Frequency</u>	<u>Type of Activity Analysis</u>	<u>Lower Level of Detection<sup>1</sup></u> ( $\mu\text{Ci/cc}$ )
1. Gas Decay Tank	Prior to Release	Prior to Release	Gamma Emitters	$1 \times 10^{-4}$
2. Containment Purge or Continuous Vent	Prior to Purge <sup>2</sup> or Vent	Prior to Purge or Vent	Gamma Emitters Tritium	$1 \times 10^{-4}$ $1 \times 10^{-6}$
3. Continuous Releases:	Continuous <sup>3</sup>	Weekly Analysis of Charcoal and Particulate Samples	Gamma Emitters I-131	$1 \times 10^{-11}$ $1 \times 10^{-12}$
a. Unit 1 Containment Vent		Monthly Composite of Particulate Sample	Gross Alpha	$1 \times 10^{-11}$
b. Unit 2 Containment Vent		Quarterly Composite of Particulate Sample	Sr-89/90	$1 \times 10^{-11}$
c. Drumming Area Vent		Noble Gas Monitor	Noble gases Gross Beta or gamma	$1 \times 10^{-6}$
d. Gas Stripper Building Vent		Monthly <sup>4</sup>	Gamma Emitters	$1 \times 10^{-4}$
e. Auxiliary Building Vent	(Grab)	Monthly	Tritium	$1 \times 10^{-6}$

NOTES FOR TABLE 15.7.6-2

1. The principal gamma emitters for which the LLD specification applies are Cs-137 in particulates and Xe-133 in gases. Because gamma isotopic analyses are performed, the LLDs for all other gamma emitters are inherently determined by the operating characteristics of the counting system. All identifiable gamma emitters will be reported in the Semi-annual Monitoring Report.
2. Tritium grab samples will be taken every 24 hours when the refueling cavity is flooded.
3. The ratio of the sample flow rate to the release flow rate shall be known or estimated for the time period covered by each sampling interval.
4. Tritium grab samples will be taken every seven days from the drumming area ventilation exhaust/spent fuel pool area whenever there is spent fuel in the spent fuel pool.

## 15.7.7 OPERATIONAL ENVIRONMENTAL MONITORING PROGRAM

### Applicability

This section applies to operational environmental radioactivity monitoring and sampling.

### Objective

To verify that plant operations have no significant radiological effects on the environment.

### Specifications

#### A. Environmental Monitoring Program

1. Environmental monitoring samples shall be taken at locations specified in the PBNP Environmental Manual according to the sampling and collection frequencies given in Table 15.7.7-1.
2. Deviations from the required sampling schedule as specified in Table 15.7.7-1, are permitted if hazardous conditions, seasonal unavailability, automatic sampling equipment malfunctions, and other legitimate reasons make the sample unobtainable. If the radiological environmental monitoring program is not being conducted as specified in Table 15.7.7-1, a description of the reasons for not conducting the program and the plans for preventing a recurrence will be submitted with the next Semiannual Monitoring Report.
3. If milk or vegetation samples become unavailable from one or more of the sample locations specified in the PBNP Environmental Manual, identify locations for obtaining replacement samples and add them to the radiological environmental monitoring program within 30 days. The specific locations from which samples were unavailable may then be deleted from the monitoring program. The cause of the unavailability of samples and replacement samples shall be

identified in the next Semiannual Monitoring Report. Figures and tables in the Environmental Manual are to be revised reflecting the new sample locations.

B. Detection Capabilities

1. Environmental samples shall be analyzed as specified in Table 15.7.7-2.
2. The required detection capabilities for environmental sample analyses are tabulated in terms of the lower limits of detection (LLDs).
3. If circumstances render the stated LLDs in Table 15.7.7-2 unachievable, the contributing factors shall be identified and described in next Semiannual Monitoring Report.

C. Notification Levels

1. If a measured level of radioactivity in any environmental medium exceeds the notification level listed in Table 15.7.7-3, resampling and/or reanalysis for confirmation shall be completed within 30 days of the determination of the anomalous result. If the confirmed measured level of radioactivity remains above the notification level, a written report shall be submitted to the NRC in accordance with Section 15.7.8.4.B within thirty days of the confirmation. This report is not required if the measured level of radioactivity was not the result of plant effluents.
2. If more than one of the radionuclides listed in Table 15.7.7-3 are detected in any environmental medium, a weighted sum calculation shall be performed if the measured concentration of a detected radionuclide is greater than 25% of the notification levels. For those radionuclides with LLDs in excess of 25% of the notification level, a weighted sum calculation need only be performed if the reported value exceeds the LLD.

The weighted sum is calculated as follows:

$$\frac{\text{concentration (1)}}{\text{notification level (1)}} + \frac{\text{concentration (2)}}{\text{notification level (2)}} + \dots = \text{weighted sum}$$

If the calculated weighted sum is equal to or greater than 1, resampling and/or reanalysis for confirmation shall be completed within 30 days of the determination of the anomalous result. If

the confirmed calculated weighted sum remains equal to or greater than 1, a written report shall be submitted to the NRC in accordance with Section 15.7.8.4.B within thirty (30) days of the confirmation. This calculation requirement and report is not required if the measured level of radioactivity was not the result of plant effluents.

3. All detected radionuclides shall be reported in the Semiannual Monitoring Reports. Naturally occurring nuclides such as Be-7, K-40, and the U-238 and Th-232 decay series radionuclides shall not be included in this requirement.

D. Land Use Census

1. The milk sampling program shall be reviewed annually, including a visual verification of animals grazing in the vicinity of the site boundary, to ensure that sampling locations remain as conservative as practicable.

E. Interlaboratory Comparison Program

1. The environmental sampling analyses shall be performed by a laboratory participating in an Interlaboratory Comparison Program.
2. If the analytical laboratory is not participating in the Interlaboratory Comparison Program, a description of the corrective actions to be taken to preclude a recurrence shall be submitted in the Semiannual Monitoring Report.

Basis

The operational radiological environmental monitoring program as outlined in Table 15.7.7-1 provides sufficient sample types and locations to detect and to evaluate changes in environmental radioactivity. Although radioactivity in plant effluents is continuously monitored and releases are well below levels which are considered safe upper limits, radiological environmental monitoring is a conservative measure undertaken to determine whether the operation of the Point Beach Nuclear Plant produces any significant radiological change in the surrounding environment.

Radioactivity is released in liquid and gaseous effluents. Air particulate samples and thermoluminescent dosimeters placed at various locations provide means of detecting changes in environmental radioactivity as a result of plant releases to the atmosphere.

The land in the area of Point Beach Nuclear Plant is used primarily for farming and dairy operations. Therefore, radiological environmental sampling of vegetation is conducted to detect changes in radiological conditions at the base of the food chain. Sampling of area-produced milk is carried out because dairy farming is a major industry in the area.

Water, periphyton, and fish are analyzed to monitor radionuclide levels in Lake Michigan in the vicinity of PBNP. Periphyton, attached algae, concentrate radionuclides from the surrounding lake water. Therefore, algae samples, along with lakewater samples, provide a means of detecting changes which may have a potential impact on the radionuclide concentrations in Lake Michigan fish. Because of the migratory behavior of fish, fish sampling is of minimal value for determining radiological impact specifically related to the operation of the Point Beach Nuclear Plant. However, fish sampling is carried out as a conservative measure with emphasis on species which are of intermediate trophic level and which exhibit minimal migration in order to monitor the status of radioactivity in fish.

Vegetation, algae, and fish sampling frequencies are qualified on an "as available" basis recognizing that certain biological samples may occasionally be unavailable due to environmental conditions.

TABLE 15.7.7-1

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL PROGRAM

SAMPLE TYPE	NUMBER & LOCATION OF SAMPLES	COLLECTION FREQUENCY	ANALYSIS TYPE AND FREQUENCY
Direct environmental	23 TLDs are distributed as follows: (Each TLD contains 2 chips) 9 - In the general area of the site boundary in the nine meteorological sectors around the Point Beach Nuclear Plant  1 - On the Lake Michigan side of PBNP  11 - In a ring around PBNP at a distance of 3 to 6 miles from the plant  1 - Background reference in a low D/Q area greater than 16 miles from PBNP  1 - Transport control	Quarterly	Gamma dose quarterly
Vegetation	8 samples of vegetation obtained as follows:  1 - Background reference as described above  4 - In the general area of the site boundary  3 - At locations N, W and S of PBNP at 3-6 miles from the plant	3x/yr as available	Radioiodine and gamma isotopic analysis performed 3x/yr as samples are available

TABLE 15.7.7-1 (Continued)

SAMPLE TYPE	NUMBER & LOCATION OF SAMPLES	COLLECTION FREQUENCY	ANALYSIS TYPE AND FREQUENCY
Well water	1 - Onsite well	Quarterly	H-3 quarterly with gamma isotopic analysis performed quarterly on total solids
Lake water	1 - Discharge flume 2 - N of discharge 0.5 to 5 miles from PBNP 2 - S of discharge 0.5 to 5 miles from PBNP	Monthly (discharge flume is collected weekly and composited for monthly analysis)	Monthly gross beta and gamma isotopic analysis of total solids. H-3 analysis quarterly on composite
Air filters	1 - Reference location as described above 4 - In the general area of the site boundary 1 - About 6 miles W of PBNP	Weekly by continuous air sampler	Radioiodine weekly on charcoal canisters. Gross beta weekly on particulate filters after at least 24 hours decay. Gamma isotopic analysis quarterly on particulate filter composites.
Milk	3 - Dairy farms about 2-6 miles N, W, and S of PBNP	Monthly	Monthly gamma isotopic analysis and radioidine analysis
Fish	1 - Travelling screens	3x/yr as available	Gamma isotopic analysis 3x/yr as available. Analysis of edible portions only
Algae	2 - Along shore within 5 miles N and S of discharge	3x/yr as available	Gross beta and gamma isotopic analysis 3x/yr as available

TABLE 15.7.7-2 RADIOLOGICAL ENVIRONMENTAL MONITORING ANALYSIS<sup>1</sup>

LOWER LIMIT OF DETECTION (LLD)<sup>2</sup>

<u>Analysis</u>	<u>Vegetation (pCi/g wet)</u>	<u>Airborne (pCi/m<sup>3</sup>)</u>	<u>Milk (pCi/l)</u>	<u>Well Water &amp; Lake Water<sup>3</sup> (pCi/l)-T.S.<sup>4</sup></u>	<u>Algae (pCi/g wet)</u>	<u>Fish (pCi/g wet)</u>
Gross Beta		0.01		4	0.25	
H-3				3,000		
Gamma Scan						
I-131	0.06	0.07	0.5			
Cs-137	0.08	0.06	18	18	0.25	0.15
Cs-134	0.06	0.05	15	15	0.25	0.13
Co-58				15	0.25	0.13
Co-60				15	0.25	0.13
Ba-La-140			15	15		
Zr-Nb-95				15		
Fe-59				30		0.26
Zn-65				30		0.26
Mn-54				15		0.13

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

NOTES FOR TABLE 15.7.7-2

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

1. For gamma isotopic analysis of environmental samples, the spectrum is scanned over the energy range of 80 to 2048 KeV for gamma ray emitting radionuclides which may be attributable to Point Beach Nuclear Plant effluents. The analysis specifically includes, but is not limited to Mn-54, Fe-59, Zn-65, Co-58, Co-60, Zr-Nb-95, Ru-103, Ru-106, I-131, Ba-La-140, Cs-134, Cs-137, Ce-141, and Ce-144.
2. The environmental TLDs have an LLD of 1 mrem/chip.
3. No drinking water
4. T.S. = total solids

TABLE 15.7.7-3 RADIOLOGICAL ENVIRONMENTAL MONITORING ANALYSIS

NOTIFICATION LEVELS

<u>Analysis</u>	<u>Vegetation (pCi/g wet)</u>	<u>Airborne (pCi/m<sup>3</sup>)</u>	<u>Milk (pCi/l)</u>	<u>Well Water &amp; Lake Water (pCi/l)-T.S.</u>	<u>Algae (pCi/g wet)</u>	<u>Fish (pCi/g wet)</u>
H-3				30,000		
I-131	0.1	0.9	3			
Cs-137	2	20	70	50	10	2
Cs-134	1	10	60	30	10	1
Co-58				1,000	10	30
Co-60				300	10	10
Ba-La-140			300	200		
Zr-Nb-95				400		
Fe-59				400		10
Zn-65				300		20
Mn-54				1,000		30

Unit 1 - Amendment No. 97  
Unit 2 - Amendment No. 101

## 15.7.8 ADMINISTRATIVE CONTROLS

### 15.7.8.1 Responsibilities of the Manager's Supervisory Staff

The responsibilities of the Manager's Supervisory Staff with respect to these radiological effluent technical specifications are listed in specification 15.6.5.2.6 at items k and l.

### 15.7.8.2 Audits

- A. An audit of the activities encompassed by the Offsite Dose Calculation Manual and the Process Control Program and its implementing procedures shall be performed at least once every 24 months utilizing either offsite licensee personnel or a consulting firm.
- B. An audit of the radiological environmental monitoring program and the results thereof shall be performed at least once every 12 months utilizing either offsite licensee personnel or a qualified consulting firm.
- C. The results of the audits in A and B above shall be transmitted to the Vice-President - Nuclear Power and the Chairman of the Offsite Review Committee.

### 15.7.8.3 Plant Operating Procedures

The ODCM and the PCP shall be established and maintained in accordance with the provisions of specification 15.6.8. Effluent and environmental monitoring shall be addressed in the Quality Assurance Program.

### 15.7.8.4 RETS Reporting Requirements

The following written reports shall be submitted to the Administrator, U.S. Nuclear Regulatory Commission Region III with a copy to the Director, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555 within the time periods specified.

#### A. Semiannual Monitoring Report

A report within 60 days after January 1 and July 1 each year for the six month period or fraction thereof, ending June 30 and December 31 containing:

- 1. Information relative to the quantities of liquid, gaseous and solid radioactive effluents released from the facility, and effluent volumes used in maintaining the releases

within the limits of 10 CFR 20 shall be provided (summarized on a monthly basis) as follows:

a. Liquid Releases

- (1) Total radioactivity (in Curies) released, other than tritium, and average diluted discharge concentrations.
- (2) Total tritium (in Curies) discharged, and average diluted discharge concentrations.
- (3) Total volume (in gallons) of liquid waste released into circulating water discharge.
- (4) Total volume (in gallons) of dilution water used.
- (5) The maximum concentration released (averaged over the period of a single release).
- (6) Estimated total radioactivity (in Curies) released, by nuclide (other than tritium), based on representative isotopic analyses performed.

b. Gaseous Releases

- (1) Total radioactivity (in Curies) released of:
  - (a) Noble Gases.
  - (b) Halogens.
  - (c) Particulates
  - (d) Tritium.
- (2) Maximum release rate (for any one-hour period).
- (3) Estimated total radioactivity (in Curies) released by nuclide (other than tritium) based on representative isotopic analyses performed.

c. Solid Waste

- (1) The total amount of solid waste shipped (in cubic feet).
- (2) Estimated total radioactivity (in Curies) involved.
- (3) The dates of shipment.

2. New and Spent Fuel Receipts and Shipments

- a. Number and type of new fuel assemblies received during the reporting period, if any.

- b. Number of spent fuel assemblies shipped off site during the reporting period, if any.

3. Environmental Monitoring

- a. A summary of pertinent environmental monitoring activities performed during the reporting period, including:

- (1) The number and types of samples taken and the types of analytical measurements made on the samples.

- (2) Any changes made in sample types or locations during the reporting period and criteria for these changes.

- b. A summary of survey results during the reporting period including a comment on any significant portion of the Operational Environmental Monitoring Program not conducted.

4. Leak Testing of Sealed Sources

Results of required leak tests performed on sealed sources if the tests reveal the presence of 0.005 microcuries or more of removable contamination.

5. Meteorological Data

Meteorological data shall be kept in file on site for review by the NRC upon request. The data available will include wind speed, wind direction, atmospheric stability, and precipitation (if measured). The data will be in the form of strip charts, hour-by-hour averages listed on magnetic tape or joint frequency distributions of each of the parameters except precipitation. The magnetic tape and joint frequency distributions will be available following the installation and operation of the new plant process computer and software (approximately 1987).

6. ODCM and PCP Changes

A description of changes to the ODCM or PCP which were implemented and became effective during the reporting period. The description shall include sufficient information to support the rationale for the changes

and a determination that the change will not reduce the overall effectiveness of the PCP or ODCM. For the ODCM, this submittal shall include revised ODCM pages affected by the change identified with a revision number and approval date.

7. Special Circumstance Reports

- a. In accordance with note 7 to Table 15.7.3-1, if the Waste Gas Holdup System Explosive Gas Monitor is out of service for greater than 14 days.
- b. In accordance with 15.7.7.B.3, factors which render the LLDs stated in Table 15.7.7-2 unachievable.
- c. In accordance with 15.7.7.E.2, failure of the analytical laboratory to participate in an Interlaboratory Comparison Program.

B. Measured Radioactivity Above Notification Levels

If the confirmed level of radioactivity remains above the notification levels specified in Table 15.7.7-3 of specification 15.7.7 "Operational Environmental Monitoring Program", a written report describing the circumstance shall be prepared and submitted within thirty days of the confirmation that a notification level was exceeded.

C. Radioactive Liquid Effluent Treatment

If the radioactive liquid effluent treatment system is inoperable and liquid effluents are being discharged for 31 days without the treatment required to meet the release limits specified in Section 15.7.5, a special report shall be prepared and submitted to the Commission within thirty days which includes the following information:

1. Identification of the inoperable equipment or subsystem and the reason for inoperability.
2. Actions taken to restore the inoperable equipment to operable status.

3. Summary description of actions taken to prevent a recurrence.

D. Radioactive Gaseous Effluent Treatment

If the radioactive gaseous effluent treatment system is inoperable and gaseous effluents are being discharged for 31 days without the treatment required to meet the release limits specified in Section 15.7.5, a special report shall be prepared and submitted to the Commission within thirty days which includes the following information:

1. Identification of the inoperable equipment or subsystem and the reason for inoperability.
2. Actions taken to restore the inoperable equipment to operable status.
3. Summary description of actions taken to prevent a recurrence.

E. Radioactive Effluent Releases

If the quantity of radioactive material actually released in liquid or gaseous effluents during any calendar quarter exceeds twice the quarterly limit as specified in Section 15.7.5, a special report shall be prepared and submitted to the Commission within thirty days of determination of the release quantity.

15.7.8.5 Major Change to Radioactive Liquid, Gaseous and Solid Waste Treatment Systems

Licensee initiated major changes to the radioactive waste treatment systems (liquid, gaseous, and solid) shall be reported to the U.S. Nuclear Regulatory Commission with the annual update to the FSAR for the period in which the major change was complete. The discussion of each change shall include:

- A. A summary of the evaluation that led to the determination that the change could be made in accordance with 10 CFR Part 50.59;
- B. Information necessary to support the reason for the change;

- C. A description of the equipment, components and processes involved and the interfaces with other plant systems;
- D. An evaluation of the change, which shows how the predicted releases of radioactive materials in liquid effluents and gaseous effluents and/or quantity of solid waste will differ from those previously predicted in the license application and amendments thereto;
- E. An evaluation of the change, which shows the expected maximum exposures to an individual in the unrestricted area and to the general population that differ from those previously estimated in the license application and amendments thereto;
- F. An estimate of the exposure to plant operating personnel as a result of the change.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NOS. 97 AND 10110  
FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27  
WISCONSIN ELECTRIC POWER COMPANY  
POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

To comply with Section V of Appendix I of 10 CFR Part 50, the Wisconsin Electric Power Company has filed with the Commission plans and proposed technical specifications developed for the purpose of keeping releases of radioactive materials to unrestricted areas during normal operations, including expected operational occurrences, as low as is reasonably achievable. Wisconsin Electric Power Company filed this information with the Commission by letter dated December 20, 1984, and modified by letter submittals dated March 11, 1985, and April 12, 1985, which requested changes to the Technical Specifications appended to Facility Operating License Nos. DPR-24 and DPR-27 for the Point Beach Plant. The proposed technical specifications update those portions of the technical specifications addressing radioactive waste management and make them consistent with the current staff positions as expressed in NUREG-0472. These revised technical specifications would reasonably assure compliance, in radioactive waste management, with the provisions of 10 CFR Part 50.36a, as supplemented by Appendix I to 10 CFR Part 50, with 10 CFR Parts 20.105(c), 106(g), and 405(c); with 10 CFR Part 50, Appendix A, General Design Criteria 60, 63 and 64; and with 10 CFR Part 50, Appendix B.

8510170087 851003  
PDR ADOCK 05000266  
P PDR

## 2.0 BACKGROUND AND DISCUSSION

### 2.1 Regulations

10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Section 50.36a, "Technical Specifications on Effluents from Nuclear Power Reactors," provides that each license authorizing operation of a nuclear power reactor will include technical specifications that (1) require compliance with applicable provisions of 10 CFR Part 20.106, "Radioactivity in Effluents to Unrestricted Areas;" (2) require that operating procedures developed for the control of effluents be established and followed; (3) require that equipment installed in the radioactive waste system be maintained and used; and (4) require the periodic submission of reports to the NRC specifying the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents, any quantities of radioactive materials released that are significantly above design objectives, and such other information as may be required by the Commission to estimate maximum potential radiation dose to the public resulting from the effluent releases.

10 CFR Part 20, "Standards for Protection Against Radiation," paragraphs 20.105(c), 20.106(g), and 20.405(c), require that nuclear power plant and other licensees comply with 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations" and submit

reports to the NRC when the 40 CFR Part 190 limits have been or may be exceeded. 10 CFR Part 50, Appendix A - General Design Criteria for Nuclear Power Plants, contains Criterion 60, Control of releases of radioactive materials to the environment; Criterion 63, Monitoring fuel and waste storage; and Criterion 64, Monitoring radioactivity releases. Criterion 60 requires that the nuclear power unit design include means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. Criterion 63 requires that appropriate systems be provided in radioactive waste systems and associated handling areas to detect conditions that may result in excessive radiation levels and to initiate appropriate safety actions. Criterion 64 requires that means be provided for monitoring effluent discharge paths and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences and postulated accidents.

10 CFR Part 50, Appendix B, establishes quality assurance requirements for nuclear power plants.

10 CFR Part 50, Appendix I, Section IV, provides guides on technical specifications for limiting conditions for operation for light-water-cooled nuclear power reactors licensed under 10 CFR Part 50.

## 2.2 Standard Radiological Effluent Technical Specifications

NUREG-0472 provides radiological effluent technical specifications for pressurized water reactors which the staff finds to be an acceptable standard for licensing actions. Further clarification of these acceptable methods is provided in NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants." NUREG-0133 describes methods found acceptable to the staff of the NRC for the calculation of certain key values required in the preparation of proposed radiological effluent technical specifications for light-water-cooled nuclear power plants. NUREG-0133 also provides guidance to licensees in preparing requests for changes to existing radiological effluent technical specifications for operating reactors. It also describes current staff positions on the methodology for estimating radiation exposure due to the release of radioactive materials in effluents and on the administrative control of radioactive waste treatment systems.

The above NUREG documents address all of the radiological effluent technical specifications needed to assure compliance with the guidance and requirements provided by the regulations previously cited. However, alternative approaches to the preparation of radiological effluent technical specifications and alternative radiological effluent technical specifications may be acceptable if the staff determines that the alternatives are in compliance with the regulations and with the intent of the regulatory guidance.

The standard radiological effluent technical specifications can be grouped under the following categories:

- (1) Instrumentation
- (2) Radioactive effluents
- (3) Radiological environmental monitoring
- (4) Design features
- (5) Administrative controls.

Each of the specifications under the first three categories is comprised of two parts: the limiting condition for operation and the surveillance requirements. The limiting condition for operation provides a statement of the limiting condition, the times when it is applicable, and the actions to be taken in the event that the limiting condition is not met.

In general, the specifications established to assure compliance with 10 CFR Part 20 standards provide, in the event the limiting conditions of operation are exceeded, that without delay conditions are restored to within the limiting conditions. Otherwise, the facility is required to effect approved shutdown procedures. In general, the specifications established to assure compliance with 10 CFR Part 50 provide, in the event the limiting conditions of operation are exceeded, that within specified times, corrective actions are to be taken, alternative means of operation are to be employed, and certain reports are to be submitted to the NRC describing these conditions and actions.

The specifications concerning design features and administrative controls contain no limiting conditions of operation or surveillance requirements.

Table 1 indicates the standard radiological effluent technical specifications that are needed to assure compliance with the particular provisions of the regulations described in Section 1.0.

### 3.0 EVALUATION

The attached report (EGG-PBS-6863) was prepared for us by EG&G Idaho, Inc. as part of our technical assistance contract program. Their report provides their technical evaluation of the compliance of the licensee's submittal with NRC-provided criteria. The staff has reviewed this TER and agrees with the evaluation.

### 3.1 SUMMARY

The proposed changes to the radiological effluent technical specifications for Point Beach Nuclear Plant, Unit Nos. 1 and 2, have been reviewed, evaluated, and found to be in compliance with the requirements of the NRC regulations and with the intent of NUREG-0133 and NUREG-0472 (the Point Beach Plant consists of two pressurized water reactors) and thereby fulfill all the requirements of the regulations related to radiological effluent technical specifications.

**Table 1. Relation Between Provisions of the Regulations and the Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors and Boiling Water Reactors**

● Indicate the specifications that are needed to assure compliance with the identified provision of the regulations.

Provisions of Title 10 Code of Federal Regulations	Standard Radiological Effluent Technical Specifications													
	Instrumentation	Radioactive Effluents						Rad. Envir. Monitoring	Design Features	Administrative Control				
		Liquid	Gaseous			Total Dose								
Rad. Liquid Effl. Monitoring	Rad. Gas. Effl. Monitoring	Effluent Concentration	Dose	PWR/BWR	PWR		BWR	Rad. Env. Monitoring Program	Site Boundaries*	Review and Audits	Procedures			
§ 50.36a Technical specifications on effluents from nuclear power reactors Remain within limits of § 20.106 Establish and follow procedures to control effluents Maintain and use radioactive waste system equipment Submit reports, semi-annual and other	●	●	●	●	●	●	●			●	●	●	●	●
§§ 20.105(c), 20.106(g), 20.405(c) Compliance with 40 CFR 190							●	●	●					●
Part 50 Appendix A - General Design Criteria Criterion 60 - Control of releases of radioactive materials to the environment Criterion 61 - Fuel storage and handling and radioactivity control Criterion 63 - Monitoring fuel and waste storage Criterion 64 - Monitoring radioactivity releases	●	●	●	●	●	●	●			●		●	●	●
Part 50 Appendix B - Quality Assurance Criteria Part 50 Appendix I - Guides to Meet "As Low As Is Reasonably Achievable (ALARA)" Maintain releases within design objectives Establish surveillance & monitoring program to provide data on: (1) quantities of rad. matls. in effluents (2) radiation & rad. matls. in the environment (3) changes in use of unrestricted areas Exert best efforts to keep releases "ALARA" Submit report if calculated doses exceed the design objective Demonstrate conform. to des. obj. by calc. proced.	●	●	●	●	●	●				●	●	●	●	●
Part 100														

\*Note: Needed to fully implement other specifications.

The proposed changes will not remove or relax any existing requirement related to the probability or consequences of accidents previously considered and do not involve a significant hazards consideration.

The proposed changes will not remove or relax any existing requirement needed to provide reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner. The staff, therefore, finds the proposed changes acceptable.

#### 4.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in the inspection, surveillance and reporting requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR §51.22(c)(9) and 10 CFR §51.22(c)(10). Pursuant to 10 CFR §51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

5.0 CONCLUSION

We have concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: October 3, 1985

Principal Contributor:  
C. Miller, DSI

Attachment:  
"Radiological Effluent Technical Specifications (RETs) Implementation -  
Point Beach Nuclear Plant," EGG - PBS - 6863, May 1985.

EGG-PBS-6863

RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS  
(RETS) IMPLEMENTATION--POINT BEACH NUCLEAR PLANT

William Serrano  
John W. Mandler  
Thomas E. Young

Published May 1985

EG&G Idaho, Inc.  
Idaho Falls, Idaho 83415

Prepared for the  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Under DOE Contract No. DE-AC07-76ID01570  
FIN No. A6459

85464544 XA

## ABSTRACT

A review of the Radiological Effluent Technical Specifications (RETS) of the Point Beach Nuclear Plant was performed. The principal review guidelines used were NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," and Draft 7" of NUREG-0472, Revision 3, "Radiological Effluent Technical Specifications for Pressurized Water Reactors." Draft submittals were discussed with the Licensee by both EG&G and the NRC staff until all items requiring changes to the Technical Specifications were resolved. The Licensee then submitted final proposed RETS to the NRC which were evaluated and found to be in compliance with the NRC review guidelines. The proposed Offsite Dose Calculation Manual was reviewed and generally found to be consistent with the NRC review guidelines.

## FOREWORD

This Technical Evaluation Report was prepared by EG&G Idaho, Inc. under a contract with the U. S. Nuclear Regulatory Commission (Office of Nuclear Reactor Regulation, Division of Systems Integration) for technical assistance in support of NRC operating reactor licensing actions. The technical evaluation was conducted in accordance with criteria established by the NRC.

## CONTENTS

ABSTRACT .....	1
FOREWORD .....	11
1. INTRODUCTION .....	1
1.1 Purpose of the Technical Evaluation .....	1
1.2 Generic Issue Background .....	1
1.3 Plant-Specific Background .....	3
2. REVIEW CRITERIA .....	5
3. TECHNICAL EVALUATION .....	8
3.1 General Description of Radiological Effluent Systems .....	8
3.2 Radiological Effluent Technical Specifications .....	10
3.3 Offsite Dose Calculation Manual .....	20
4. CONCLUSIONS .....	23
5. REFERENCES .....	25

## FIGURES

1. Point Beach liquid radwaste treatment and discharge pathways .....	9
2. Point Beach gaseous radwaste treatment and discharge pathways .....	11

## TABLE

1. Correspondence of provisions of NUREG-0472. The Licensee's current technical specifications and the Licensee's proposal for the Point Beach Nuclear Plant .....	24
--	----

## 1. INTRODUCTION

### 1.1 Purpose of the Technical Evaluation

The purpose of this Technical Evaluation Report (TER) is to review and evaluate the proposed changes in the Technical Specifications of the Point Beach Nuclear Plant (PBNP) with regard to Radiological Effluent Technical Specifications (RETS) and the proposed Offsite Dose Calculation Manual (ODCM).

The evaluation used criteria proposed by the Nuclear Regulatory Commission (NRC) staff in the model Technical Specifications for pressurized water reactors (PWRs), NUREG-0472,<sup>[1]</sup> and subsequent revisions. This effort is directed toward the NRC objective of implementing RETS which comply with the regulatory requirements, primarily those of 10 CFR Part 50, Appendix I.<sup>[2]</sup> Other regulations pertinent to the control of effluent releases are also included within the scope of compliance.

### 1.2 Generic Issue Background

Since 1970, 10 CFR Part 50, Section 50.36.a,<sup>[3]</sup> "Technical Specifications on Effluents from Nuclear Power Reactors," has required licensees to provide Technical Specifications which ensure that radioactive releases will be kept as low as is reasonably achievable (ALARA). In 1975, numerical guidance for the ALARA requirement was issued in 10 CFR Part 50, Appendix I. The licensees of all operating reactors were required<sup>[4]</sup> to submit, no later than June 4, 1976, their proposed ALARA Technical Specifications and information for evaluation in accordance with 10 CFR Part 50, Appendix I. However, in February 1976, the NRC staff recommended that proposals to modify Technical Specifications be deferred until the NRC completed the model RETS.

The model RETS deal with radioactive waste management systems and environmental monitoring. Although the model RETS address the 10 CFR

Part 50, Appendix I requirements, subsequent revisions include provisions for addressing issues not covered in Appendix I. These provisions are stipulated in the following regulations:

- o 10 CFR Part 20,<sup>[5]</sup> "Standards for Protection Against Radiation," Sections 20.105.c, 20.106.g and 20.405.c which require that nuclear power plants and other Licensees comply with 40 CFR Part 190,<sup>[6]</sup> "Environmental Radiation Protection Standards for Nuclear Power Operations," and submit reports to the NRC when the 40 CFR Part 190 limits have been or may be exceeded.
  
- o 10 CFR Part 50, Appendix A,<sup>[7]</sup> "General Design Criteria for Nuclear Power Plants," which contains Criterion 60--Control of releases of radioactive materials to the environment; Criterion 63--Monitoring fuel and waste storage; and Criterion 64--Monitoring radioactive releases.
  
- o 10 CFR Part 50, Appendix B,<sup>[8]</sup> which establishes the quality assurance required for nuclear power plants.

The NRC position on the model RETS was established in May 1978 when the NRC's Regulatory Requirements Review Committee approved the model RETS: NUREG-0472 for PWRs and NUREG-0473 for BWRs. Copies of the model RETS were sent to licensees in July 1978 with a request to submit proposed site-specific RETS on a staggered schedule over a six-month period. Licensees responded with requests for clarifications and extensions.

The Atomic Industrial Forum (AIF) formed a task force to comment on the model RETS. NRC staff members first met with the AIF task force on June 17, 1978. The model RETS were subsequently revised (Revision 1) to reflect comments from the AIF and others. A principal change was the transfer of much of the material concerning dose calculations from the model RETS to a separate document, the ODCM.

Revision 1 of the model RETS was sent to licensees on November 15 and 16, 1978 with guidance (NUREG-0133)<sup>[9]</sup> for preparation of the RETS and the ODCM and a new schedule for responses, again staggered over a six-month period.

Four regional seminars on the RETS were conducted by the NRC staff during November and December 1978. Subsequently, a preliminary copy of Revision 2 of the model RETS and additional guidance on the ODCM and a PCP were issued in February 1979 to each utility at individual meetings. NUREG-0472, Revision 2<sup>[1]</sup> and NUREG-0473, Revision 2<sup>[10]</sup> were published in July 1979 and updated in January 1980 and February 1980. In response to the NRC's request, operating reactor licensees subsequently submitted initial proposals on plant RETS and the ODCM. Review leading to ultimate implementation of these documents was initiated by the NRC in September 1981 using subcontracted independent teams as reviewers.

As the RETS reviews progressed, feedback from the licensees led the NRC to modify some of the provisions in the February 1, 1980 version of Revision 2 to clarify specific concerns of the licensees and thus expedite the reviews. Starting in April 1982, the NRC distributed revised versions of RETS in draft form to the licensees during the site visits. The new guidance on these changes was presented in an AIF meeting on May 19, 1982.<sup>[11]</sup> Some interim changes regarding the Radiological Environmental Monitoring Section were issued in August 1982.<sup>[12]</sup> With the incorporation of these changes, the NRC issued Draft 7" of Revision 3 of NUREG-0472<sup>[13]</sup> and NUREG-0473<sup>[14]</sup> in September 1982 to serve as new guidance for the review teams.

### 1.3 Plant-Specific Background

In conformance to the 1975 directive,<sup>[4]</sup> the Wisconsin Electric Power Company (WE), the Licensee of the Point Beach Nuclear Plant Units 1 and 2, filed with the NRC on June 4, 1976<sup>[15]</sup> a license amendment request. The request included proposed ALARA Technical Specifications for review and approval by the NRC.

In response to the NRC's letters of July 11, 1978 (Mr. B. R. Grimes, Assistant Director for Engineering and Projects, Division of Operating Reactors, to all power reactor licensees) and November 15, 1978, Wisconsin Electric submitted proposed changes to the Point Beach Technical Specifications<sup>[16]</sup> for NRC review. The NRC reviewed the proposal and identified review comments in memorandum dated March 31, 1980.<sup>[17]</sup> EG&G Idaho, Inc. (EG&G), selected as an independent task review team, initiated a review and evaluation of this submittal. The submittal was compared with the model RETS and assessed for compliance with the requirements of 10 CFR Part 50, Appendix I, and 10 CFR Part 50, Appendix A.

Review comments and questions dated May 17, 1982,<sup>[18]</sup> concerning the RETS proposal were mailed to the NRC and the Licensee prior to arranging a site visit with the licensee. During the site visit (June 2-3, 1982), technical discussions resolved some of the shortcomings of the proposed RETS (e.g., missing information and other deviations from the requirements) identified in the submitted review. A summary of the site visit discussions was submitted to the NRC by EG&G in letter dated February 17, 1983.<sup>[19]</sup> The NRC submitted review comments to the Licensee in letter dated April 25, 1983.<sup>[20]</sup> The Licensee responded with a modified RETS submittal dated September 1983 to the NRC with letter dated October 7, 1983.<sup>[21]</sup> The October 1983 letter contained the modified RETS, the proposed ODCM, the June 1982, Revision 2 Environmental Monitoring Manual, and the Process Control Program.

EG&G reviewed the submittals contained with the Licensee's October 1983 letter and transmitted review comments to the NRC with letter dated January 9, 1984.<sup>[22]</sup> The NRC transmitted review comments to the Licensee with letter dated July 18, 1984.<sup>[23]</sup> The resultant changes were discussed between the NRC and the Licensee during a meeting held on October 11, 1984 in Bethesda, Maryland. The Licensee submitted proposed changes to the RETS with letter dated December 20, 1984.<sup>[24]</sup> EG&G reviewed the December 1984 RETS proposal and transmitted review comments to the NRC with letter dated February 15, 1985.<sup>[25]</sup> The comments were discussed between EG&G and NRC in a meeting held on February 27, 1985 in Bethesda, Maryland. The discussions resolved most of the remaining issues and the remainder were

resolved between the NRC and the Licensee. The Licensee also submitted cost-benefit analyses in support of the Radioactive Waste Treatment Technical Specification with letters dated March 11, 1985 [26] and April 12, 1985.[27] The cost-benefit analyses were reviewed and approved by the NRC. The resolution to all issues allowed EG&G to prepare a TER for submittal to the NRC.

The Licensee's ODCM proposal submitted with letter dated October 1983[21] was reviewed by EG&G. EG&G review comments were transmitted to the NRC with letter dated January 9, 1984.[22] The comments were discussed between the NRC and the Licensee at the meeting held on October 11, 1984. As a result a complete revision to the ODCM dated January 1985 was prepared by the Licensee and submitted to the NRC. The PBNP Environmental Manual is incorporated into the Offsite Dose Calculational Manual by reference. The ODCM was reviewed by EG&G and review comments transmitted to the NRC with letter dated April 5, 1985.[28] It was determined the ODCM contains documented and approved methods that are generally consistent with the guidelines of NUREG-0133 and is therefore acceptable to NRC as a reference.

## 2. REVIEW CRITERIA

Review criteria for the RETS were provided by the NRC in three documents:

1. NUREG-0472, RETS for PWRs
2. NUREG-0473, RETS for BWRs
3. NUREG-0133, Preparation of RETS for Nuclear Power Plants

Twelve essential criteria are given for the RETS and ODCM:

1. All significant releases of radioactivity shall be controlled and monitored.

2. Offsite concentrations of radioactivity shall not exceed the 10 CFR Part 20, Appendix B, Table 2 limits.[29]
3. Offsite radiation doses shall be ALARA.
4. Equipment shall be maintained and used to keep offsite doses ALARA.
5. Radwaste tank inventories shall be limited so that failures would not cause offsite doses exceeding 10 CFR Part 20 limits.
6. Hydrogen and/or Oxygen concentrations in the waste gas system shall be controlled to prevent explosive mixtures.
7. Wastes shall be processed to shipping and burial ground criteria under a documented program, subject to quality assurance verification.
8. An environmental monitoring program, including a land use census, shall be implemented.
9. The radwaste management program shall be subject to regular audits and reviews.
10. Procedures for control of liquid and gaseous effluents shall be maintained and followed.
11. Periodic and special reports on environmental monitoring and on releases shall be submitted.
12. Offsite dose calculations shall be performed using documented and approved methods consistent with NRC methodology.

In addition to NUREG-0472 and NUREG-0473 and their subsequent revisions, the NRC staff issued guidelines, [30,31] clarifications, [32,33] and branch positions [34,35,36] establishing a policy that requires the licensees of operating reactors to meet the intent, if not the letter, of the model RETS requirements. The NRC branch positions issued since the RETS implementation review began have clarified the model RETS for operating reactors.

Review criteria for the ODCM are based on the following NRC guidelines: Branch Technical Position, "General Content of the Offsite Dose Calculation Manual;" [37] NUREG-0133; [9] and Regulatory Guide 1.109. [38] The format for the ODCM is left to the licensee and may be simplified by tables and grid printouts.

### 3. TECHNICAL EVALUATION

#### 3.1 General Description of Radiological Effluent Systems

This briefly describes the liquid and gaseous radwaste effluent treatment systems, release paths, and control systems installed at Point Beach Nuclear Plant, a PWR.

##### 3.1.1 Radioactive Liquid Effluents

A block diagram of the radioactive liquid waste treatment system and discharge pathways for the Point Beach Nuclear Plants was obtained from the ODCM and is shown in Figure 1. This system can be utilized to process steam generator blowdown and primary side liquid wastes. Processing of liquid wastes is accomplished at PBNP by the Chemical and Volume Control System and the Liquid Radioactive Waste System. The Chemical and Volume Control System (CVCS) holdup tanks are shared between Units 1 and Unit 2 and collect reactor coolant letdown for boron control and other miscellaneous reactor coolant drains. These liquids are then processed by the boron recovery portion of the CVCS. Boric acid evaporator condensate is released to the circulating water discharge or recycled to the makeup water storage tank. Activity is released in liquid effluents from the CVCS, the liquid radioactive waste system, and secondary system wastes collected and sent to the retention pond. The CVCS system is operated continuously during normal plant operation. The CVCS will be operated continually except during unlikely periods of system inoperability. Secondary system wastes are collected and discharged without processing since they are insignificant contributions to total plant liquid releases. The processing of steam generator blowdown and all liquid wastes collected from the controlled side of the plant is not done continually. These wastes may be discharged from the plant without processing. Liquid wastes from the radioactive waste disposal system are diluted by the circulating water system prior to release to Lake Michigan. Liquid waste from the waste disposal system may be discharged to the circulating water system of either unit via the service

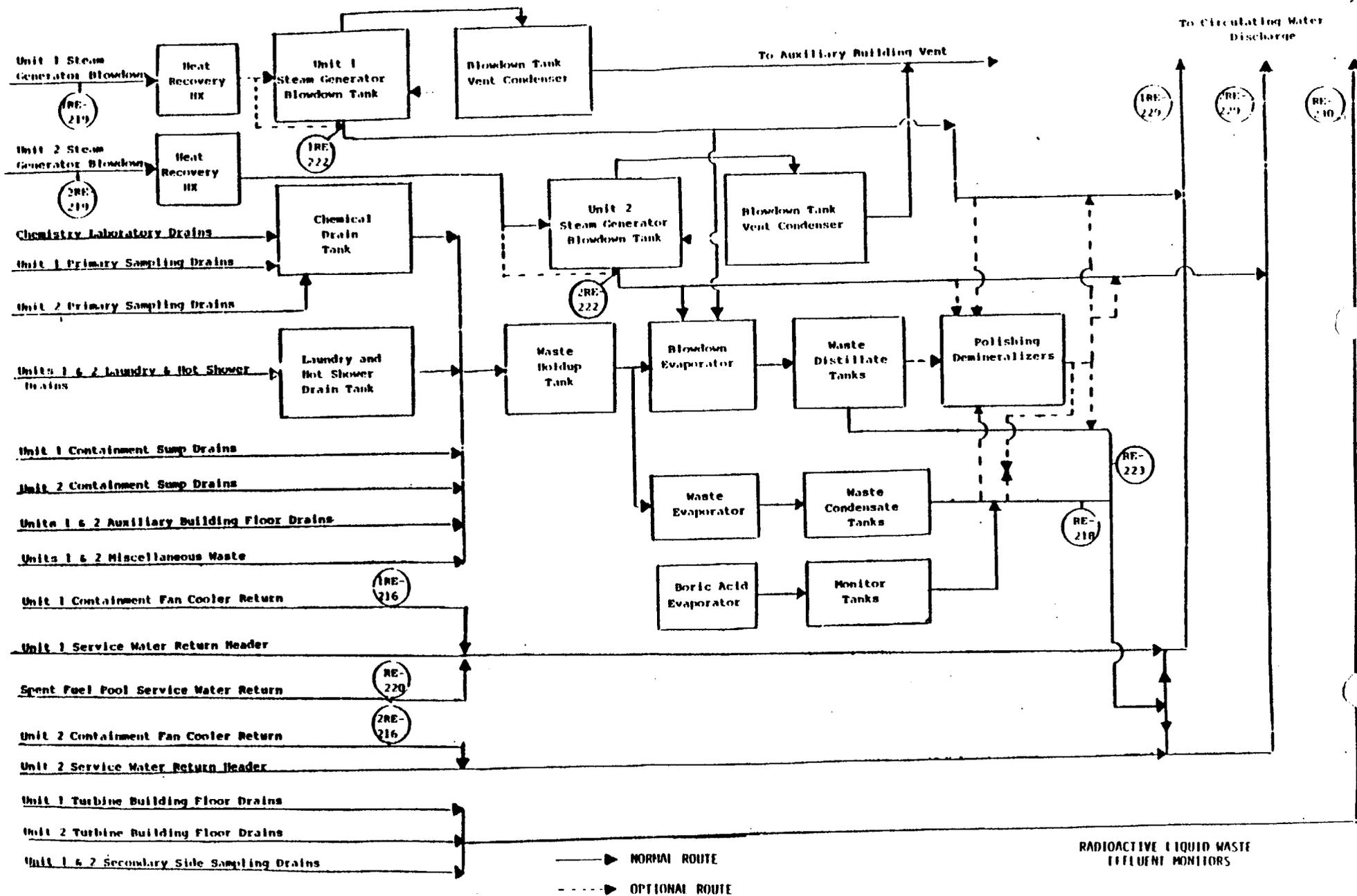


Figure 1. Point Beach liquid radwaste treatment and discharge pathways.

water return header. Because of the low radioactivity levels in the circulating water discharge, the concentrations of liquid radioactive effluents at this point are not measured directly. The concentrations in the circulating water discharge are calculated from the measured concentration of the liquid effluent, the discharge flow rate of the effluent and the nominal flow in the circulating water system.

### 3.1.2 Radioactive Gaseous Effluents

A block diagram of the radioactive gaseous waste treatment system and discharge pathways for the Point Beach Nuclear Plants was obtained from the ODCM and is shown in Figure 2. Processing of gaseous wastes is accomplished at PBNP by the gaseous radioactive treatment system and ventilation exhaust filtration systems. Filtration systems are provided for the removal of particulates and/or radioiodines in the Unit 1 and Unit 2 containment purge and drumming area exhaust stacks, from the auxiliary building ventilation, shield building ventilation, and the chemistry laboratory exhaust, and from gas decay tank and air ejector effluents.

Noble gases stripped from primary coolant letdown can be processed by the compressed gas decay tank system. Noble gas releases are on a batch basis following a decay time.

The HEPA and carbon adsorber filtration systems are expected to operate continually except the auxiliary building ventilation charcoal filter and air ejector charcoal filter will be operated to meet the release limits. Prior to release to the atmosphere, gaseous wastes are mixed in the auxiliary building vent with the flow from at least one of two auxiliary building exhaust fans. Further dilution then occurs in the atmosphere.

## 3.2 Radiological Effluent Technical Specifications

The following subsections describe the primary objectives of each section of the model RETS and a summary of the commitments of the

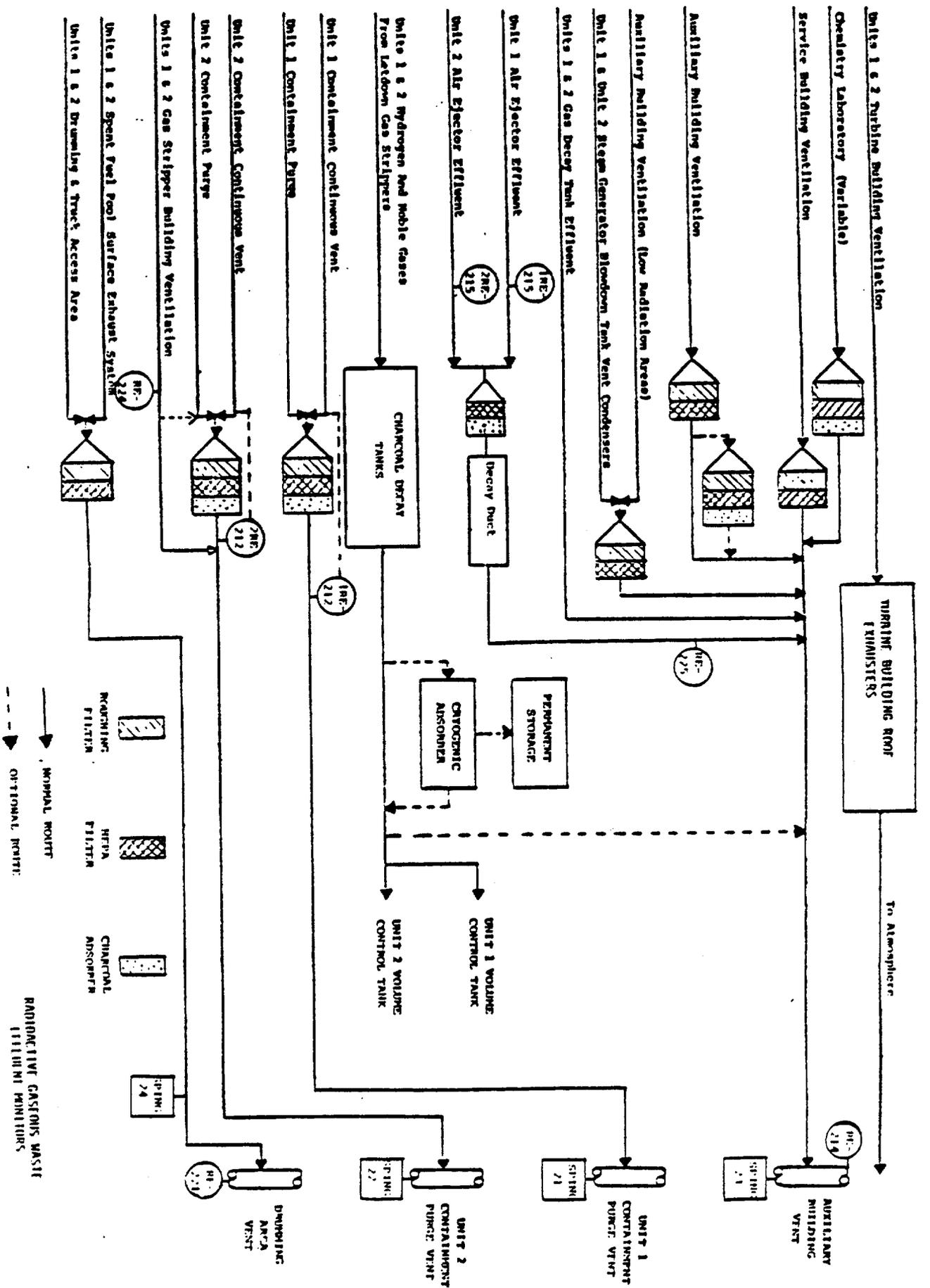


Figure 2. Point Beach gaseous radwaste treatment and discharge pathways.

Licensee's RETS. A cross-reference between the numbering in the model RETS and the Licensee's RETS is contained in Table 1. The chronological sequence of the RETS review was described in the Plant-Specific Background, Section 1.3 of this report.

### 3.2.1 Effluent Instrumentation

The objective of the model RETS with regard to effluent instrumentation is to ensure that all significant liquid and gaseous radioactive effluents are monitored. The model RETS specify that all effluent monitors be operable with periodic surveillance and that alarm/trip setpoints be determined in order to ensure that offsite radioactive effluent concentrations do not exceed maximum permissible concentrations (MPCs) listed in 10 CFR Part 20.

The Licensee has provided radiation monitors for all effluent lines with potential for release of significant amounts of radioactivity in liquid or gaseous effluents.

#### 3.2.1.1 Radioactive Liquid Effluent Instrumentation.

There are three release points for radioactive liquids to the circulating water discharge and each release point is provided with a radiation monitor. Additionally monitors are provided at significant locations upstream from these release points as shown in Figure 1. Stream flows are determined from instrumentation or pump curves. Thus, instrumentation is provided for all significant radioactive liquid release points with acceptable surveillance performed on the monitoring system.

#### 3.2.1.2 Radioactive Gaseous Effluent Instrumentation.

Radioactive gases are released to the atmosphere at four release points. Each release point is provided with radiation monitors with additional monitors at significant locations upstream from the release points as shown in Figure 2. Noble gas and SPING monitors are located at each release point. Each monitoring system contains flow rate measuring devices and acceptable surveillance checks are performed on each system.

### 3.2.1.3 Liquid and Gaseous Instrumentation Setpoints.

The Licensee's Technical Specifications require that the concentration of radioactive material will be monitored "during releases via this pathway" for all monitored effluent paths. The setpoints at each release point are established to prevent exceeding the release concentrations for liquid releases or corresponding dose rates for gaseous releases of 10 CFR Part 20 in unrestricted areas. The setpoints for the liquid and gaseous effluent instrumentation will be determined in accordance with the Offsite Dose Calculation Manual (ODCM).

The Licensee's RETS submittal on liquid and gaseous effluent monitoring instrumentation has satisfied the provisions and meets the intent of NUREG-0472.

## 3.2.2 Concentration and Dose Rates of Effluents

### 3.2.2.1 Liquid Effluent Concentration.

The Licensee's RETS include a commitment to maintain the concentration of radioactive liquid effluents released from the site to the unrestricted areas to within 10 CFR Part 20 limits. Both batch and continuous radioactive liquid releases are sampled and analyzed periodically in accordance with an acceptable sampling and analysis program.

Therefore, the Licensee's RETS submittal on liquid effluent concentrations meets the intent of NUREG-0472.

### 3.2.2.2 Gaseous Effluent Dose Rate.

The Licensee's RETS include a commitment to maintain the gaseous dose rate from the site in the unrestricted area to within NUREG-0472 limits. Both batch and continuous radioactive gaseous releases are sampled and analyzed periodically in accordance with an acceptable sampling and analysis program.

Therefore, the Licensee's RETS submittal on gaseous effluent dose rates meets the intent of NUREG-0472.

### 3.2.3 Offsite Doses from Effluents

The objectives of the model RETS with regard to offsite doses from effluents are to ensure that offsite doses are kept ALARA, are in compliance with dose specifications of NUREG-0472 and are in accordance with 10 CFR Part 50, Appendix I and 40 CFR Part 190.

The Licensee's RETS include a commitment to:

1. Limit the quarterly and annual dose due to liquid effluents to within the NUREG-0472 criteria
2. Limit the quarterly and annual air dose due to noble gas releases converted to total body and skin doses to within the NUREG-0472 criteria
3. Limit the quarterly and annual dose to any organ due to release of iodine-131, tritium, and radionuclides in particulate form to within the NUREG-0472 criteria.

The Licensee's RETS state that compliance to 40 CFR 190 is assured by demonstrating compliance to the Appendix I doses. However, the direct radiation component will be included if necessary to demonstrate compliance in the event the radioactive effluents exceed twice the annual limits.

Therefore, the Licensee's RETS submittal of offsite doses from radioactive effluents meets the intent of NUREG-0472.

### 3.2.4 Effluent Treatment

The objectives of the model RETS with regard to effluent treatment are to ensure that the radioactive waste treatment systems are used to keep releases ALARA and to satisfy the provisions for Technical Specifications governing the maintenance and use of radwaste treatment equipment.

The Licensee's submitted cost-benefit analyses demonstrated it was cost-beneficial to operate certain components of the radioactive liquid and gaseous treatment systems only when required to meet the release limits. This analysis was reviewed and approved by the NRC. A special report shall be submitted to the NRC within thirty days if the treatment system is inoperable and the waste is being discharged for 31 days without treatment.

Therefore, the Licensee's RETS submittal on effluent treatment meets the intent of NUREG-0472.

### 3.2.5 Tank Inventory Limits

The objective of the model RETS with regard to a curie limit on liquid-containing tanks is to ensure that in the event of a tank rupture, the concentrations in the nearest potable water supply and the nearest surface water supply in an unrestricted area would not exceed the limits of 10 CFR Part 20, Appendix B Table II. The objective of the model RETS with regard to a curie limit on gas-containing tanks is to ensure that in the event of an uncontrolled release of the tank's contents the resulting total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem.

There are no tanks containing radioactive liquids outside of buildings. In addition, a dike surrounds the buildings. The only temporary tanks are those used for sludge lancing which are provided with a catch tray capable of containing the entire 4000-gallon volume.

It is impossible to inject gaseous activity into one storage tank to result in an offsite dose of 0.5 rem based on the corresponding total inventory of noble gases in the reactor coolant system. Therefore, a Technical Specification stating the curie limit for a waste gas decay tank is not required.

Therefore, the Licensee's RETS submittal on tank inventory limits meets the intent of NUREG-0472.

### 3.2.6 Explosive Gas Mixtures

The objective of the model RETS with regard to explosive gas mixtures is to prevent hydrogen explosions in the waste gas system.

The waste gas system is operated hydrogen rich. Therefore, the concentrations are controlled by limiting the oxygen concentrations to  $\leq 4\%$  by volume. The proposed specifications and instrumentation for explosive gas mixtures have been approved by the NRC on an interim basis until the NRC establishes a final position on the explosive gas monitoring.

Therefore, the Licensee's submittal on explosive gas mixtures meets the intent of NUREG-0472 for the interim.

### 3.2.7 Solid Radwaste System

The objective of the model RETS with regard to the solid radwaste system is to ensure that radwaste will be properly processed and packaged before it is shipped from the plant to the burial site to satisfy the requirements of 10 CFR Part 20, Section 20.301 and 10 CFR Part 71.[39]

The Licensee's RETS include a commitment to use the solid radwaste system in accordance with a Process Control Program to process wet radioactive wastes to meet shipping and burial ground requirements.

Therefore, the Licensee's RETS submittal on solid radioactive waste meets the intent of NUREG-0472.

### 3.2.8 Radiological Environmental Monitoring Program

The objectives of the model RETS with regard to a radiological environmental monitoring program are to ensure that (a) an adequate

full-area coverage environmental monitoring program exists, (b) there is an appropriate land use census, and (c) an acceptable Interlaboratory Comparison Program exists. The monitoring program implements Section IV.B.2 of Appendix I to 10 CFR Part 50, the land use census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50, and the requirement for participation in an approved Interlaboratory Comparison Program is provided to ensure that independent checks are performed as part of the quality assurance program for environmental monitoring to demonstrate that valid results are obtained for Section IV.B.2 of Appendix I to 10 CFR Part 50.

The Licensee's RETS on a radiological environmental monitoring program have followed the model RETS and the Branch Technical Position on the subject issued November 1979, [34] as applicable to the site, and have provided an adequate number of sample locations for pathways identified. The Licensee's method of sample analysis and maintenance of the monitoring program satisfies the requirements of Appendix I, 10 CFR Part 50. The Licensee's RETS contain a land use census specification which requires sufficient annual information for a PWR. The RETS also state that the Licensee will participate in an NRC approved Interlaboratory Comparison Program.

Thus, the Licensee's RETS submittal for a radiological environmental program meets the intent of NUREG-0472.

### 3.2.9 Audits and Reviews

The objective of the model RETS with regard to audits and reviews is to ensure that audits and reviews of the radwaste and environmental monitoring programs are properly conducted.

The Licensee's administrative structure identifies the Unit Review Group (URG) and the Offsite Review Committee (OSRC) as the two groups comparable to the Unit Review Group (URG) and the Company Nuclear Review and Audit Group (CNRAG), respectively.

The URG is responsible for reviewing all changes to the ODCM and the PCP. The URG is also responsible for reviewing every release of radioactive material to the environment in excess of the release limits.

An audit of the activities encompassed by the Offsite Dose Calculation Manual and the Process Control Program and its implementing procedures shall be performed at least once every 24 months utilizing either offsite licensee personnel or a consulting firm. An audit of the radiological environmental monitoring program and the results thereof shall be performed at least once every 12 months utilizing either offsite licensee personnel or a qualified consulting firm. The results of these audits shall be transmitted to the Vice-President--Nuclear Power and the Chairman of the Offsite Review Committee.

The URC and OSRC encompass the total responsibility for reviews and audits specified in NUREG-0472. Therefore, the Licensee's requirement for audits and reviews meets the intent of NUREG-0472.

### 3.2.10 Procedures and Records

The objective of the model RETS with regard to procedures is to ensure that written procedures be established, implemented, and maintained for the PCP, the ODCM, and the QA program for effluent and environmental monitoring. The objective of the model RETS with regard to records is to ensure that documented records pertaining to the radiological environmental monitoring program are retained for the duration of the operating license.

The Licensee's RETS include a requirement to establish, implement, and maintain written procedures for the radwaste solidification program (PCP) and the dose evaluation program (ODCM). Quality assurance program procedures for effluent and environmental monitoring shall be addressed in the Quality Assurance Program.

The Licensee's RETS state that records of analyses required by the Radiological Environmental Monitoring Program shall be permanently retained.

Therefore, the Licensee's RETS submittal on procedures and records meets the intent of NUREG-0472.

### 3.2.11 Reports

The objective of the model RETS with regard to reporting requirements is to ensure that appropriate annual and semiannual periodic reports and special reports are submitted to the NRC.

The licensee's RETS include commitments to submit the following reports:

#### 1. Environmental Monitoring

This report is submitted on a semi-annual basis. The report will contain reasons for not conducting the environmental monitoring program as required, and reasons for unavailability of samples. The report shall include results of the land use census and a description of corrective actions to be taken if the contracted laboratory is not participating in the Interlaboratory Comparison Program.

#### 2. Semiannual Monitoring Report

Semiannual Monitoring Reports are submitted containing information relative to the amount of liquid, gaseous, and solid waste effluents released from the facility. It was determined that the reporting commitments met the intent of the requirements of NUREG-0472.

#### 3. Special Reports

The Licensee's RETS include a commitment to file a special report under the following conditions:

- o Exceeding the liquid effluent dose limits according to Specifications 15.7.5.F.3 and 15.7.8.4.E.

- o Exceeding the gaseous effluent dose limits according to Specifications 15.7.5.F.3 and 15.7.8.4.E within 30 days of determination.
- o Exceeding the total dose limits according to Specification 15.7.5.H.3 within 30 days.
- o Exceeding the reporting levels for the radioactivity measured in environmental sampling program Specification 15.7.7.C.1 within 30 days.

Therefore, the Licensee's RETS submittal on reports meets the intent of NUREG-0472.

### 3.2.12 Other Administrative Controls

An objective of the model RETS in the administrative controls section is to ensure that any changes to the PCP and ODCM and major changes to the radioactive waste treatment systems are reported to the NRC.

The Licensee's RETS require that changes to the ODCM, PCP and major changes to the radioactive waste treatment systems be reported to the NRC.

Notification of changes to the ODCM (including changes to the PBNP Environmental Manual) and the PCP will be included in the Semiannual Monitoring Report for the period in which the changes are made. Major changes to the radioactive waste treatment systems will be reported with the annual update to the FSAR.

Therefore, the Licensee's RETS submittal for these administrative controls meets the intent of NUREG-0472.

### 3.3 Offsite Dose Calculation Manual

As specified in NUREG-0472, the ODCM is to be developed by the Licensee

to document the methodology and approaches used to calculate offsite doses and maintain the operability of the effluent system. As a minimum, the ODCM should provide equations and methodology for the following topics:

- o alarm and trip setpoints for effluent instrumentation
- o liquid effluent concentration in unrestricted areas
- o gaseous effluent dose rate or concentrations at or beyond the site boundary
- o liquid and gaseous effluent dose contributions
- o total dose compliance, including direct shine
- o liquid and gaseous effluent dose projections.

In addition, the ODCM should contain flow diagrams, consistent with the systems being used at the station, defining the treatment paths and the components of the radioactive liquid, gaseous, and solid waste management systems. A description and the location of samples in support of the environmental monitoring program are also needed in the ODCM.

### 3.3.1 Evaluation

The alarm setpoint for the liquid effluent monitors are based on the MPC of a reference isotope. The setpoint calculation satisfies the equation in the addendum of NUREG-0133 to determine the alarm and trip setpoints for the liquid effluent monitors. This assures that the alarm and trip actions will occur prior to exceeding the 10 CFR Part 20, Appendix B, Table II values at the discharge point to the unrestricted area.

The alarm setpoints for the noble gas monitors are based on the MPC of a reference isotope. The calculation, based on equations similar to those in NUREG-0133, ensure that alarm will occur prior to exceeding the concentration limits in 10 CFR Part 20, Appendix B, Table II to the unrestricted areas.

Compliance to 10 CFR Part 50 Appendix I is assured by limiting the curies released to below quantities which would result in the dose limits

of Appendix I. A summation of all releases in equivalent curies may be performed on a quarterly basis. Additionally dose calculations may be performed in lieu of determining the curies released. The curies released or the doses calculated are compared to the quarterly allowed limits to demonstrate compliance. For liquid effluents the limiting dose is the adult total body dose due to radioiodines and the adult total body dose due to tritium and particulates. For gaseous effluents, the total body noble gas gamma dose is limiting, the infant thyroid dose due to radioiodines is limiting, and for remaining isotopes the liver dose to a child is limiting.

Demonstration to 40 CFR Part 190 compliance shall be performed if the dose calculations exceed twice the annual limits. The calculations shall include direct radiation contributions from the reactor units and from any outside storage tanks.

Dose projections to determine use of the liquid or gaseous cleanup systems are not included in the ODCM. This is acceptable since the Technical Specifications based on a cost-benefit analyses require use of the equipment to meet the release limits.

The ODCM contains block diagrams of the radioactive liquid and gaseous treatment systems and effluent flow paths.

A complete description of the PBNP radiological environmental monitoring program is contained in the PBNP Environmental Monitoring Manual which is incorporated in the ODCM by reference. Specific parameters of distance and the direction sector from the plant, have been provided for each and every sample location.

The Licensee's ODCM for the Point Beach Nuclear Plant is generally in compliance with the NRC requirements and uses methods consistent with the methodology and guidance prescribed in NUREG-0133.

#### 4.0 CONCLUSIONS

The Licensee's proposed RETS and ODCM were reviewed and evaluated and the following conclusions were reached:

- o The Licensee's proposed RETS for the Point Beach Nuclear Plant submitted December 20, 1984 and modified by submittals dated March 11, 1985 and April 12, 1985 meets the intent of the NRC staff's "Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors", NUREG-0472. The specifications for explosive gas mixtures meet the intent for the interim.
  
- o The Licensee's ODCM dated January 1985 and submitted on January 21, 1985 uses documented and approved methods that are applicable to the Point Beach Nuclear Plant and are generally consistent with the guidelines of NUREG-0133. The PBNP Environmental Manual is included in the ODCM by reference. Therefore, the ODCM is an acceptable reference.

A correspondence between (a) NUREG-0472, (b) the Licensee's current RETS, and (c) the Licensee's proposed RETS is shown in Table 1.

TABLE 1. CORRESPONDENCE OF PROVISIONS OF NUREG-0472, THE LICENSEE'S CURRENT TECHNICAL SPECIFICATIONS AND THE LICENSEE'S PROPOSAL FOR THE POINT BEACH NUCLEAR PLANT.

<u>RETS Requirements</u>	<u>NUREG-0472</u>	<u>Current Technical Specification</u>	<u>Licensee Proposal (Section)</u>
Effluent Instrumentation	3.3.3.10	15.3.9.A	15.7.3.A.1
	3.3.3.11	15.3.9.B	15.7.3.B.1
Concnetration	3.11.1.1	15.3.9.C	15.7.5.A.2
	3.11.2.1	15.3.9.D	15.7.5.C.2
Offsite Doses	3.11.1.2	15.3.9.E	15.7.5.B.1.2
	3.11.2.2	15.3.9.F.3	15.7.5.D.1.a,2
	3.11.2.3	15.3.9.F.2,4,5	15.7.5.D.1.b,2
	3.11.4	--	15.7.5.H
Radwaste Treatment	3.11.1.3	15.3.9.I	15.7.5.G.1
	3.11.2.4	15.3.9.I.2	15.7.5.G.2
Tank Inventory Limits	3.11.1.4	--	--
	3.11.2.6	--	--
Explosive Gas Mixtures	3.11.2.5	--	15.7.5.I
Solid Radwaste	3.11.3	--	15.7.5.J
Environmental Monitoring	3.12.1	--	15.7.7.A.1
Land Use Census	3.12.2	--	15.7.7.D
Interlaboratory Comparison	3.12.3	--	15.7.7.E
Audits and Reviews	6.5.1	15.6.5.2.6	15.6.5.2.6,7
	6.5.2	15.6.5.3.8	15.7.8.2.A,B
Procedures and Records	6.8	--	15.7.8.3
	6.10	--	15.6.10.v
Reports	6.9	15.6.9.2.C	15.7.8.4
Other Administrative Controls	6.13	--	15.7.8.4.A.6
	6.14	--	15.7.8.4.A.6
	6.15	--	15.7.8.5

## 5. REFERENCES

1. United States Nuclear Regulatory Commission, Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors, NUREG-0472, Revision 2, July 1979.
2. United States Office of The Federal Register, Title 10, Code of Federal Regulations, Part 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low as is Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents."
3. United States Office of the Federal Register, Title 10, Code of Federal Regulations, Part 50, Section 50.36a, "Technical Specifications on Effluents from Nuclear Power Reactors."
4. United States Office of the Federal Register, Title 10, Code of Federal Regulations, Part 50, Appendix I, Section V.B., "Effective Dates."
5. United States Office of the Federal Register, Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation."
6. United States Office of the Federal Register, Title 40, Code of Federal Regulations, Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations."
7. United States Office of the Federal Register, Title 40, Code of Federal Regulations, Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants."
8. United States Office of the Federal Register, Title 10, Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."
9. United States Nuclear Regulatory Commission, Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, NUREG-0133, October 1978.
10. United States Nuclear Regulatory Commission, Standard Radiological Effluent Technical Specifications for Boiling Water Reactors, NUREG-0473, Revision 2, July 1979.
11. C. A. Willis and F. J. Congel, "Summary of Draft Contractor Guidance of RETS, AIF Environmental Subcommittee Meeting, Washington, D. C.", May 19, 1982.
12. F. J. Congel, memo to RAB Staff (NRC), Interim Changes in the Model RETS, August 9, 1982.

13. United States Nuclear Regulatory Commission, Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors, NUREG-0472, Revision 3, Draft 7", September 1982.
14. United States Nuclear Regulatory Commission, Standard Radiological Effluent Technical Specifications for Boiling Water Reactors, NUREG-0473, Revision 3, Draft 7", September 1982.
15. Letter from Sol Burstein, WE, to B.C. Rusche, NRC, Subject: TECHNICAL SPECIFICATION CHANGE REQUEST FOR MAINTAINING RELEASES AS LOW AS REASONABLY ACHIEVABLE, June 4, 1976.
16. Letter from Sol Burstein, WE, to H. R. Denton, NRC, Subject: MODIFICATION TO CHANGE REQUEST NO. 33 RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, January 28, 1980.
17. Memorandum R. L. Bangert, NRC, to A. Schwencer, NRC, Subject: REVIEW OF PROPOSED RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS FOR POINT BEACH NUCLEAR PLANT, UNIT NO. 1 AND 2, March 31, 1980.
18. Letter from T. E. Young, EG&G, to C. A. Willis, NRC, Subject: TRANSMITTAL OF QUESTIONS FOR POINT BEACH RETS REVIEW-TEY-2-82, May 17, 1982.
19. Letter from W. Serrano, EG&G, to C. A. Willis, NRC, Subject: STATUS OF POINT BEACH RETS SUBMITTAL-Serr-7-83, February 17, 1983.
20. Letter from R. A. Clark, NRR, to C. W. Fay, WE, Subject: FORWARD EG&G SUMMARY OF DISCUSSIONS WITH RESPECT TO RETS DURING THE 6-2-82 PLANT VISIT, April 25, 1983.
21. Letter from C. W. Fay, WE, to H. R. Denton, NRC, Subject: MODIFICATION TO CHANGE REQUEST NO. 33 RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, October 7, 1983.
22. Letter from W. Serrano, EG&G, to C. L. Miller, NRC, Subject: POINT BEACH RETS AND ODCM REVIEW-Serr-1-84, January 9, 1984.
23. Letter from J. R. Miller, NRC, to C. W. Fay, WE, Subject: NRC COMMENTS ON INITIAL REVIEW OF 10-7-83 RETS SUBMITTAL, July 18, 1984.
24. Letter from C. W. Fay, WE, to H. R. Denton, NRC, Subject: RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS CHANGE REQUEST 33 POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, December 20, 1984.
25. Letter from W. Serrano, EG&G, to C. R. Nichols, NRC, Subject: REVIEW OF POINT BEACH RETS-Serr-2-85, February 15, 1985.
26. Letter from C. W. Fay, WE, to H. R. Denton, NRC, Subject: RADWASTE COST-BENEFIT ANALYSIS POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, March 11, 1985.

27. Letter from C. W. Fay, WE, to H.R. Denton, NRC, Subject: DOCKETS 256 AND 301, MODIFICATIONS TO TECHNICAL SPECIFICATIONS (RETS) POINT BEACH NUCLEAR PLANT UNITS 1 AND 2, April 12, 1985.
28. Letter from W. Serrano, EG&G, to C. R. Nichols, NRC, Subject: REVIEW OF POINT BEACH ODCM-Serr-09-85, April 5, 1985.
29. United States Office of The Federal Register, Title 10, Code of Federal Regulations, Part 20, Appendix B, "Concentrations in Air and Water Above Natural Background."
30. C. A. Willis, Letter to F. B. Simpson (summarizing changes to RETS requirements following meeting with Atomic Industrial Forum), November 20, 1981.
31. W. E. Kreger, NRC, memo to R. J. Mattson, NRC, Plans for Dealing with the Explosive Gas Issue in Implementing the Radiological Effluent Technical Specifications (RETS), December 14, 1981.
32. C. A. Willis and F. J. Congel, "Status of NRC Radiological Effluent Technical Specification Activities," Atomic Industrial Forum Conference on HEPA and Nuclear Regulations, October 4-7, 1981.
33. C. A. Willis, Memo to P. C. Wagner, Plans for Implementing Radiological Effluent Technical Specifications for Operating Reactors, November 4, 1981.
34. W. P. Gammil, NRC, Memo to P. C. Wagner, NRC, Current Position on Radiological Effluent Technical Specifications (RETS) Including Explosive Gas Controls, October 7, 1981.
35. United States Nuclear Regulatory Commission, Radiological Assessment Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program, November 1979.
36. United States Nuclear Regulatory Commission, Methods for Demonstrating LWR Compliance with the EPA Uranium Fuel Cycle Standard (40 CFR Part 190), NUREG-0543, February 1980.
37. United States Nuclear Regulatory Commission, Branch Technical Position, General Contents of the Offsite Dose Calculation Manual, Revision 1, February 8, 1979.
38. Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, "Revision 1, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, October 1977.
39. United States Office of the Federal Register, Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."

NRC FORM 335 12-841 NRCM 1102, 3201, 3202	U.S. NUCLEAR REGULATORY COMMISSION  <b>BIBLIOGRAPHIC DATA SHEET</b>	1. REPORT NUMBER (Assigned by TIDC, add Vol. No., if any)  EGG-PBS-6863
2. TITLE AND SUBTITLE  RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS) IMPLEMENTATION - POINT BEACH NUCLEAR PLANT	J. LEAVE BLANK	4. DATE REPORT COMPLETED MONTH: May      YEAR: 1985
5. AUTHOR(S)  W. Serrano, J. W. Mandler, T. E. Young	6. DATE REPORT ISSUED MONTH: May      YEAR: 1985	8. PROJECT/TASK/WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code)  Radiation Measurements Section EG&G Idaho, Inc. Idaho Falls, ID 83415	9. FIN OR GRANT NUMBER	11a. TYPE OF REPORT  b. PERIOD COVERED (Inclusive dates)
10. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code)  Division of Systems Integration Office of Nuclear Regulatory Research U.S. Nuclear Regulatory Commission Washington, D.C. 20555	12. SUPPLEMENTARY NOTES	
13. ABSTRACT (200 words or less)  <p style="text-align: center;">             A review of the Radiological Effluent Technical Specifications (RETS) of the Point Beach Nuclear Plant was performed. The principal review guidelines used were NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," and Draft 7" of NUREG-0472, Revision 3, "Radiological Effluent Technical Specifications for Pressurized Water Reactors." Draft submittals were discussed with the Licensee by both EG&amp;G and the NRC staff until all items requiring changes to the Technical Specifications were resolved. The Licensee then submitted final proposed RETS to the NRC which were evaluated and found to be in compliance with the NRC review guidelines. The proposed Offsite Dose Calculation Manual was reviewed and generally found to be consistent with the NRC review guidelines.           </p>		
14. DOCUMENT ANALYSIS • KEYWORDS/DESCRIPTORS  b. IDENTIFIERS/OPEN-ENDED TERMS	15. AVAILABILITY STATEMENT	16. SECURITY CLASSIFICATION (This page)  (This report)
		17. NUMBER OF PAGES
		18. PRICE