APPENDIX D

Evaluation of ODCM Revision 1

(Point Beach Nuclear Plant, Units 1 and 2)

D.1 EVALUATION OF CHANGES TO THE ODCM

The Wisconsin Electric Power Company (WE), the Licensee for the Point Beach Nuclear Plant, Units 1 and 2, submitted revisions to their Offsite Dose Calculation Manual (ODCM). The ODCM was approved, in general, as stated in the memorandum dated May 24, 1985.[1] Revisions to the approved ODCM are required by the Licensee's Technical Specifications to be reported to the NRC in the Semiannual Monitoring Report for the period in which the revisions are made. However, since the extensive revisions could not be effectively identified in the Semiannual Monitoring Report, the Licensee submitted to the NRC, with letter dated January 20, 1986[2], a revised copy of the ODCM which superceded the previous version. The revised ODCM, dated August 1985 was designated as Revision 0. Subsequently, Revision 1 of the ODCM, dated September 1987, was submitted to the NRC with the Semiannual Monitoring Report for July-December, 1987.[3]

The NRC transmitted Revision 1 of the ODCM to the Idaho National Engineering Laboratory (INEL) for review. The INEL reviewed the entire ODCM as a whole. The result of the ODCM evaluation for Units 1 and 2 is intended to be a stand-alone document and is given in Supplement 1 to this appendix.

D.2 REFERENCES

1. Memorandum from D. R. Muller (NRC) to G. C. Lainas (NRC), Subject: DSI SAFETY EVALUATION AND ENVIRONMENTAL CONSIDERATION OF POINT BEACH NUCLEAR POWER PLANT, UNITS 1 AND 2 SUPPORTING A LICENSE AMENDMENT (RETS, MPA ITEM A-02), May 24, 1985.

2. Letter from C. W. Fay (WE) to H. R. Denton (NRC), Subject: RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS) POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, January 20, 1986.

3. Letter from C. W. Fay (WE) to U. S. Nuclear Regulatory Commission, Subject: DOCKET NOS. 50-266 AND 50-301 SEMIANNUAL MONITORING REPORT POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, February 22, 1988.

SUPPLEMENT 1

to

APPENDIX D

EVALUATION OF CHANGES TO THE ODCM

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INTRODUCTION

Purpose of Review

The purpose of this supplement is to report the review and evaluation of the revised Offsite Dose Calculation Manual (ODCM) submitted by the Wisconsin Electric Power Company (WE) for the Point Beach Nuclear Plant, Units 1 and 2. The ODCM is a supplementary document for implementing the Radiological Effluent Technical Specifications (RETS) in compliance with 10 CFR 50, Appendix I requirements.[1]

Scope of Review

As specified in NUREG-0472[2], 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 radioactive effluent systems. As a minimum, the ODCM should provide equations and methodology for the following topics:

- Alarm and trip setpoints on effluent instrumentation
- Liquid effluent concentrations in unrestricted areas
- Gaseous effluent dose rates at or beyond the site boundary
- Liquid and gaseous effluent dose contributions
- 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.

Plant-Specific Background

The WE submitted an ODCM for the Point Beach Nuclear Plant (PBNP), Units 1 and 2 with letter dated January 21, 1985. The ODCM was reviewed by the NRC and determined the ODCM to be a generally acceptable reference as stated in an NRC memorandum dated May 24, 1985.[3] The Licensee made revisions to the approved ODCM and submitted an entire revised copy to the NRC. The revised copy, designated as Revision 0, superceded the January 21, 1985 submittal. The Licensee's technical specifications require that changes to the approved ODCM be submitted to the NRC in the Semiannual Monitoring Report for the period in which the change was made. However, due to the extensive revisions which could not be effectively identified in the July-December 1985 Semiannual Monitoring Report, a complete copy of the revised ODCM was submitted to the NRC with letter dated January 20, 1986.[4] Subsequently Revision 1 of the ODCM, dated September 1987, was submitted to the NRC with the July-December 1987 Semiannual Monitoring Report.[5] The NRC transmitted Revision 1 of the ODCM to the Idaho National Engineering Laboratory (INEL) for review. The INEL reviewed the ODCM and the results and conclusions of the evaluation are presented in this supplement.

REVIEW CRITERIA

Review criteria for the ODCM were provided by the NRC in two documents:

NUREG-0472, RETS for PWRs[2]
NUREG-0133, Preparation of RETS for Nuclear Power Plants.[6]

In the ODCM review, the following NRC guidelines were also used: "General Contents of the Offsite Dose Calculation Manual," Revision 1[7], and Regulatory Guide 1.109.[8] The ODCM format is left to the Licensee and may be simplified by tables and grid printouts.

EVALUATION

Liquid Radwaste Treatment System

There are two nuclear power units at the PBNP site and both units share a common liquid radwaste cleanup system. Batch releases from the cleanup system are diluted with the Unit 1 or the Unit 2 service water and the circulating water discharge before release to Lake Michigan. Continuous releases from the steam generator blowdown and the service water system from each unit are released directly to the circulating water discharge. Turbine building floor drain liquids and secondary side sampling drain liquids from both units are combined in a common header before release to the retention pond whose effluents are then released to the circulating water discharge. A simplified block diagram of the liquid radwaste cleanup and discharge system is shown in Figure 2-1 of the ODCM.

In addition to the effluent radiation monitors identified in Figure 2-1 of the ODCM, the PBNP technical specification Table 15.7.3-1 requires a flow meter on the waste condensate tank discharge and a flow rate recorder on the waste distillate tank. Therefore, the flow recorders and the radiation monitors provide the effluent monitoring for release of liquid radwastes from the PBNP.

Liquid Radwaste Monitor Setpoints

Technical Specification 15.7.5.A.1 requires that "alarm setpoints for liquid effluent monitors shall be determined and adjusted utilizing the methodologies and parameters given in the ODCM."

The methodology to determine the liquid radwaste monitor's setpoints is described in Section 3.0 of the ODCM. The monitors have an alert setpoint and an alarm or trip setpoint. The alert setpoint is set to alarm at twice the steady-state reading established for the effluent released. Section 3.6 of the ODCM contains the methodology for

determining the trip setpoints for the liquid radwaste monitors. The Semiannual Monitoring Reports indicate that Co-60 is the dominate long-lived radionuclide released. The monitor's trip setpoint is set to the undiluted concentration of Co-60 that would result in the maximum permissible concentration (MPC) of Co-60 in the unrestricted area. The monitor's actual response to the mix of radionuclides in the liquid radwaste released is normalized through a calibration constant to equivalent concentrations of Co-60. The calibration constant is described in Section 3.5 of the ODCM. The determination of the calibration constant in Section 3.5 requires use of a mix of nuclides in a calibration source. This mix of radionuclides is then equated to an equivalent concentration of Co-60. It is not clear how the mix of nuclides in the calibration source is representative of the mix of nuclides in the actual release. If the calibration source is obtained via a well mixed grab sample of the radwaste intended for release, then it would be representative. However, if this is the case it is not stated in the ODCM. Discharge flow parameters are listed in Table 3-1 of the ODCM.

The Licensee's method to determine the setpoints for the liquid effluent monitors described in Section 3.0 of the ODCM, is in general, in agreement with the guidelines of NUREG-0133. However, without a better understanding of the basis for the calibration constant, it is uncertain if the method is completely acceptable for use in determining the monitor's setpoints.

Gaseous Radwaste Treatment System

There are four gaseous release points at the PBNP site:

Auxiliary building vent
Drumming area vent
Unit 1 containment purge vent
Unit 2 containment purge vent.

The two units at the PBNP site share a common gaseous radwaste cleanup

system and both units share a common spent fuel surface area exhaust and a drumming area exhaust. Radionuclides from the gaseous radwaste treatment system are released to the atmosphere at the auxiliary building vent. Radionuclides from the spent fuel area and the drumming area are released to the atmosphere at the drumming area vent. Each unit has its own containment purge system.

A block diagram of the gaseous radwaste cleanup and discharge system is supposed to be in Figure 2-2 of the ODCM. However, Figure 2-2 in the ODCM is a repeat of the diagram for the liquid radwaste treatment system.

There are flow rate monitors or sampling systems associated with each of the gaseous effluent radiation monitors and are identified in Table 15.7.3-2 of the Technical Specifications. Therefore, the flow monitors and samplers along with the radiation monitors provide the required effluent monitoring for release of gaseous radwastes from the PBNP.

Gaseous Radwaste Monitor Setpoints

Technical Specification 15.7.5.C.1 requires that "alarm setpoints for the gaseous effluent monitors shall be determined and adjusted utilizing the methodologies and parameters given in the ODCM."

The methodology to determine the noble gas radwaste monitor's setpoints is described in Section 3.0 of the ODCM. The monitors have an alert setpoint and an alarm or trip setpoint. The alert setpoints are set to alarm at twice the steady-state reading established for the effluent released. The alarm setpoint for each of the four noble gas radiation monitors will be correlated to the MPC of Xe-133 in the unrestricted area. If the setpoint for the monitor at each release point is determined based on the MPC of Xe-133 at the unrestricted area boundary, then there is no provision or consideration for simultaneous releases. In other words, if the concentration level at the exit of each of the four vents were at the maximum allowed, then the concentration at the unrestricted area could be in excess of the Xe-133 MPC by a factor of four.

Section 3.7 of the ODCM contains the methodology for determining the trip setpoints for the noble gas monitors. An adjustment factor of 2.12×10^3 sec.ft^3/min.m^3 is omitted in the equation for the setpoint in Section 3.7. The setpoint calculation uses the highest annual average X/Q value at the unrestricted area. The monitor's trip setpoint is set to the undiluted concentration of Xe-133 that would result in the MPC of Xe-133 at the unrestricted area. The Semiannual Monitoring Reports indicate that Xe-133 is one of the major contributors to the noble gases released in a six-months period. The monitor's actual response to the mix of radionuclides in the gaseous radwaste released is normalized through a calibration constant to equivalent concentrations of Xe-133. The method to determine the calibration constant is described in Section 3.5 of the ODCM and discharge flow parameters are listed in Table 3-2 of the ODCM.

Similar to the setpoint calculation for the liquid radwaste monitors, the determination of the calibration constant in Section 3.5 for the gaseous radiation monitors requires use of a mix of nuclides (noble gases) in a calibration source. This mix of noble gases is then equated to an equivalent concentration of Xe-133. Again it is not clear how the mix of nuclides in the calibration source is representative of the nuclide mix in the actual release.

The Licensee's method to determine the setpoints for the gaseous effluent monitors described in Section 3.0 of the ODCM, is in general, in agreement with the guidelines of NUREG-0133. However, with the omission of consideration for simultaneous releases, without a better understanding of the basis for the calibration constant, and the insertion of the required correction factor, it is uncertain if the method is acceptable for use in determining the monitor's setpoints.

Concentrations in Liquid and Gaseous Effluents

The Licensee's Technical Specification 15.7.6 requires that the concentrations of radioactive material released from the site in liquid and gaseous effluents be determined by sampling and analysis in accordance with Table 15.7.6-1 for liquids and Table 15.7.6-2 for gases. The Technical Specification, however, does not require the methodology for determining the concentrations in the liquid and gaseous effluents to be described in the ODCM. Consequently, there is no description in the ODCM for determining the concentrations.

Regardless, the noble gas concentrations would be assured to be within the 10 CFR 20, Appendix B, Table II limits by correctly determining the setpoints for the noble gas monitors. Additionally, since the PBNP limits for radionuclides in gaseous releases are based on concentrations instead of dose rates, there is no gaseous dose rate methodology required for inclusion in the ODCM.

As mentioned previously, Technical Specification 15.7.5.A.2 requires that the setpoints for the liquid effluent monitors be established to ensure that the concentrations do not exceed the 10 CFR 20 Appendix B, Table II limits. Also, Technical Specification 15.7.5.C.2 requires that the setpoints for the noble gas effluent monitors be established to ensure that the concentrations do not exceed the 10 CFR 20 Appendix B, Table II limits. Thus, the only methods described in the ODCM for use in demonstrating compliance to the concentration limits are the setpoints for the radiation monitors.

Dose Due to Liquid Effluents

The ODCM contains the methods to calculate the dose to any individual due to the release of radioactivity in liquid effluents as required by Technical Specification 15.7.5.B.3. The licensee identifies two independent methods for assuring compliance to the dose limits. The

first or primary method consists of summing all curies released in a calendar quarter or calendar year and comparing the total curies released to the curie limit required to cause the quarterly or annual dose limits to be exceeded. The second or alternate method uses the methodology of Regulatory Guide 1.109.

Technical Specification 15.7.5.B.1 requires that the annual calculated total quantity of radioactive material released from PBNP in liquid effluents shall not result in doses to an individual in excess of the annual dose limits identified in Technical Specification 15.7.5.B.1. The dose limits are in agreement with the annual limits of NUREG-0472 for a two-unit site. Compliance to the calendar quarter dose limits is assured by limiting the curies released in a calendar quarter to one-fourth of the annual equivalent curie limits as stated in Technical Specification 15.7.5.B.2. This is conservative for the calendar quarter, in that NUREG-0472 permits the quarterly dose limit to be one-half the annual dose limits instead of one-fourth of the annual dose limits.

Section 4.3 of the ODCM contains the methodology for determining the annual curie release limit and is based on the 10 CFR 50, Appendix I dose limits. In Section 4.3.B.1, it is not clear why the total body is identified as the limiting organ instead of the thyroid for the radioiodines since Table E-11 in Regulatory Guide 1.109 shows the I-131 dose factor for the thyroid to be approximately 600 times greater than the I-131 dose factor for the total body. Also, in Section 4.3.B.2 should not the liver be the limiting organ instead of the total body for tritium and other particulates (i.e., Cs-134 and Cs-137)?

Section 5.2 contains the methodology to demonstrate that the actual curies released during a calendar quarter or calendar year are less than the calculated allowed release. In Section 5.2, individual annual curie limits are identified for tritium, radioiodines, and Co-60. It is not clear how the individual curies are combined to ensure the annual dose limit is not exceeded. In other words, if the curies released for tritium, radioiodines, and Co-60 were at the limits stated in Section 5.2, the dose limit would be exceeded by a factor of three.

The Licensee's method of monitoring the cumulative curies released in liquid effluents to assure that the dose to any individual does not exceed the dose limits is, in general, in agreement with the guidelines of NUREG-0133. However, with the discrepancies identified in this review it is uncertain if the methods are completely acceptable for use in projecting the dose to the maximum exposed individual.

If the actual curies released in a quarter exceeds twice the Licensee's quarterly allowed release, then the doses are calculated in accordance with the NUREG-0133 methodology. The methodology is contained in Section 6.0 of the ODCM. In Section 6.4.C.2, the U_a is incorrectly identified as 370 l/year instead of 730 l/year and in Table 5-1, the ratio term for Te-131m should be 1.49E-01 instead of 1.49E-02. With these two exceptions, the methodology is, in general, in agreement with the guidelines of NUREG-0133 and should be considered acceptable for use in projecting the dose to the maximum exposed individual.

Dose Due to Gaseous Effluents

The ODCM contains the methods to calculate the dose to any individual due to the release of radioactivity in gaseous effluents as required by Technical Specification 15.7.5.D.3. The licensee identifies two independent methods for assuring compliance to the dose limits. The first or primary method consists of summing all curies released in a calendar quarter or calendar year and comparing the total curies released to the curie limit required to cause the quarterly or annual dose limits to be exceeded. The second or alternate method, in general, uses the methodology of NUREG-0133.

Technical Specification 15.7.5.D.1 requires that the annual calculated total quantity of radioactive material released from PBNP in gaseous effluents shall not result in doses to an individual in excess of the annual dose limits identified in Technical Specification 15.7.5.D.1. The dose limits are in agreement with the annual limits of NUREG-0472 for a two-unit site. The dose limits from 10 CFR 50, Appendix I to the skin,

total body, and any organ are used instead of the gamma and beta dose limits to air, and the dose to any organ as suggested in NUREG-0472. Compliance to the calendar quarter dose limits is assured by limiting the curies released in a calendar quarter to one-fourth of the annual equivalent curie limits as stated in Technical Specification 15.7.5.D.2. This is conservative for the calendar quarter, in that NUREG-0472 permits the quarterly dose limit to be one-half the annual dose limits instead of one-fourth of the annual dose limits.

Section 4.3 of the ODCM contains the methodology for determining the annual curie release limit and is based on the 10 CFR 50, Appendix I dose limits.

Section 5.3 contains the methodology to demonstrate that the actual curies released during a calendar quarter or calendar year are less than the allowed release. In Section 5.3, individual curie limits are identified for tritium, noble gases, radioiodines, and particulates. It is not clear how the individual curie limits are combined to ensure the annual dose limit is not exceeded. In other words, if the curies released for tritium, noble gases, radioiodines, and Co-60 were at the limits stated in Section 5.3, the dose limit would be exceeded by a factor of four.

The Licensee's method of monitoring the cumulative curies released in gaseous effluents to assure that the dose to any individual does not exceed the dose limits is, in general, in agreement with the guidelines of NUREG-0133. However, with the discrepancies identified in this review it is uncertain if the methods are completely acceptable for use in projecting the dose to the maximum exposed individual.

If the actual curies released in a quarter exceeds twice the Licensee's quarterly allowed release, then the doses are calculated in accordance with the NUREG-0133 methodology. The methodology is contained in Section 6.0 of the ODCM.

Table 1.4-2 of the ODCM identifies categories for the annual average and grazing season X/Q and D/Q dispersion parameters. According to Section 6.2.a, the Auxiliary Building Vent is the release point for the gas decay tanks and Table 1.4-2 assigns the dispersion values for the Auxiliary Building Vent to Category IIB. This is in disagreement with Section 6.3.A which states that all releases shall be grouped into Categories IA or IIA.

If the actual quarterly curie release exceeds twice the Licensee's quarterly allowed release, then the doses are calculated in accordance with the NUREG-0133 methodology. The methodology is contained in Section 6.0 of the ODCM and with the exception of the confusion in the assignment of the dispersion parameters for the Auxiliary Building Vent, the methodology is, in general, in agreement with the guidelines of NUREG-0133 and is acceptable for use in projecting the dose to the maximum exposed individual.

Dose Projections

The technical specifications do not require dose projections to initiate use of either the liquid or gaseous radwaste treatment systems. Consequently, no methodology exists in the ODCM to project doses. The technical specifications require that the radwaste treatment systems be operated and if the systems become inoperable, then the effluent reporting requirements of Technical Specification 15.7.5.F shall apply. Technical Specification 15.7.5.F states that corrective actions shall be taken to ensure that subsequent releases will be in compliance with quarterly and calendar limits.

Therefore, the omission of the dose projections in the ODCM is in agreement with the technical specifications, since the technical specifications do not require dose projections to be included in the ODCM.

Diagrams

A simplified diagram for the liquid waste treatment system is shown in Figure 2-1 and a corresponding list of the radioactive waste liquid effluent monitors is contained in Table 2-1 of the ODCM. A simplified diagram for the gaseous waste treatment system is supposed to be in Figure 2-2. However, Figure 2-2 is a repeat of Figure 2-1. A list of the radioactive gaseous effluent monitors is contained in Table 2-2 of the ODCM.

A simplified diagram for the solid waste treatment is not contained in the ODCM.

Maps showing site boundaries and unrestricted areas and effluent release points are not included in the ODCM. However, a map is contained in the Technical Specifications as Figure 15.7.1-1.

Total Dose

Technical Specification 15.7.5.H.1 states that "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." Technical Specification 15.7.5.H.2 requires that demonstration of compliance to the total dose limits shall be made when twice the annual dose limits are exceeded.

Section 4.4.4 of the ODCM addresses the requirement to demonstrate compliance to the 40 CFR 190 total dose limits. The ODCM includes a commitment to address the direct radiation contribution from the reactor units and any outside storage tanks. Neither the ODCM or the technical specifications specifically states that the contribution to the total dose from the nearby Kewaunee plant will be included in a total dose calculation. Although, 40 CFR 190 requires consideration from all nearby fuel cycle sources, it is not clear from either the ODCM or the technical

specifications that the contributions to the total dose from the nearby Kewaunee plant would be considered.

Radiological Environmental Monitoring Program

The Radiological Environmental Monitoring program is not described in the ODCM but is described in the PBNP Environmental Manual (EM) as required by Technical Specification 15.7.7. Reference to the EM is also contained in Section 8.0 of the ODCM. The EM contains the distance and direction sector from the reactor site for each and every radiological environmental monitoring sample with the following exceptions:

Table 15.7.7-1 of the Technical Specifications identifies 23 thermoluminescent dosimeters (TLDs) whereas Section 2.4.2 of the EM states that TLDs are to be posted at only 22 locations.

Table 15.7.7-1 of the Technical Specifications identifies 9 TLDs to be located in the general area of the site boundary. In Figure 2-1 of the EM, there appears to be only 7 TLDs in the general area of the site boundary.

Figure 2-1 in the EM is illegible and should be replaced.

Another figure should be included in the EM providing more plant detail to show sample locations within the site boundary, the liquid and gaseous release points, and boundaries for the unrestricted areas.

The EM details the soil and shoreline sediment sampling program. However, these samples are not included in the technical specifications.

Summary

In summary, the Licensee's ODCM as revised uses methods that are generally consistent with the methodology and guidance in NUREG-0133. However, it is suggested that the Licensee submit another revision to address the concerns identified in this review.

CONCLUSIONS

The Wisconsin Electric Power Company, the Licensee for the Point Beach Nuclear Plant, Units 1 and 2 submitted extensive revisions to the Offsite Dose Calculation Manual (ODCM) for the two units. The extensive revisions were incorporated into a complete copy designated as Revision 0 submitted to the NRC with letter dated January 20, 1986. Another complete copy containing the Revision 1 changes was submitted to the NRC with the July-December 1987 Semiannual Monitoring Report. The Revision 1 was reviewed as a whole and it is determined that the ODCM uses methods that are, in general, in agreement with the guidelines of NUREG-0133. However, it is suggested that the Licensee submit another revision to address the discrepancies identified in this review which are summarized below:

- In Section 3.5, it is not clear how the mix of nuclides in the calibration source used to determine the calibration constant for the liquid effluent monitors is representative of the mix of nuclides in the actual release. It is this mix of radionuclides that are equated to an equivalent concentration of Co-60. If the calibration source is obtained via a well mixed grab sample of the radwaste intended for release, then it would be representative.

- In Section 3.0 of the ODCM, there is no provision or consideration of simultaneous releases from each of the four gaseous release points when determining the alarm trip setpoints for the noble gas monitors.

- In Section 3.5, it is not clear how the mix of nuclides in the calibration source used to determine the calibration constant for the gaseous effluent monitors is representative of the mix of nuclides in the actual release. It is this mix of radionuclides that are equated to an equivalent concentration of Xe-133.

- In Section 3.7, a correction factor of 2.12×10^3 sec.ft^3/min.m^3 is omitted in the equation for the setpoint.

- In Section 4.3.B.1, it is not clear why the total body and not the thyroid is the limiting organ for the radioiodines.

- In Section 4.3.B.2, it is not clear why the total body and not the liver is the limiting organ for tritium and other particulates, i.e., Cs-134 and Cs-137.

- In Section 5.2, it is not clear how the individual curies releases for tritium, radioiodines, and others are combined to ensure the dose limit is not exceeded. In other words, if the curies released for tritium, radioiodines, and Co-60 were at the limits stated in Section 5.2, the dose limit would be exceeded by a factor of three.

- In Section 6.4.C.2, the U_a is identified as 370 l/year instead of 730 l/year.

- In Section 5.3, it is not clear how the individual curies released for tritium, noble gases, radioiodines, and particulates are combined to ensure the dose limit is not exceeded. In other words, if the curies released for tritium, noble gases, radioiodines, and Co-60 were at the limits stated in Section 5.3, the dose limit would be exceeded by a factor of four.

- According to Section 6.2.a, the Auxiliary Building Vent is the release point for the gas decay tanks and Table 1.4-2 assigns the dispersion values for the Auxiliary Building Vent to Category IIB. This is in disagreement with Section 6.3.A which states that all releases shall be grouped into Categories IA or IIA.

- In Section 4.4.4 of the ODCM and in Technical Specification 15.7.5.H, it is not clear if the contribution to the total dose from the nearby Kewaunee plant is considered in a total dose calculation.

- In Table 5-1, the ratio term for Te-131m should be 1.49E-01 instead of 1.49E-02.

- A simplified diagram for the gaseous waste treatment system is supposed to be in Figure 2-2. However, Figure 2-2 is a repeat of the liquid radwaste treatment system which is shown in Figure 2-1 of the ODCM.

- A simplified diagram showing the solid waste treatment is not contained in the ODCM.

- Table 15.7.7-1 of the Technical Specifications identifies 23 TLDs whereas Section 2.4.2 of the Environmental Manual states that TLDs will be posted at only 22 locations.

- Table 15.7.7-1 of the Technical Specifications identifies nine TLDs to be located in the general area of the site boundary. In Figure 2-1 of the Environmental Manual, there appears to be only seven TLDs in the general area of the site boundary.

- Figure 2-1 in the Environmental Manual is illegible and must be replaced.

- Another figure must be included in the Environmental Manual providing more plant detail to show sample locations within the site boundary, the liquid and gaseous release points, and boundaries for the unrestricted areas.

- The Environmental Manual describes the soil and shoreline sediment sampling program. However, these samples are not included in the technical specifications.

REFERENCES

1. 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".

2. "Radiological Effluent Technical Specifications for Pressurized Water Reactors," Rev. 3, Draft 7", intended for contractor guidance in reviewing RETS proposals for operating reactors, NUREG-0472, September 1982.

3. Memorandum from D. R. Muller (NRC) to G. C. Lainas (NRC), Subject: DSI SAFETY EVALUATION AND ENVIRONMENTAL CONSIDERATION OF POINT BEACH NUCLEAR POWER PLANT, UNITS 1 AND 2 SUPPORTING A LICENSE AMENDMENT (RETS, MPA ITEM A-02), May 24, 1985.

4. Letter from C. W. Fay (WE) to H. R. Denton (NRC), Subject: RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS) POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, January 20, 1986.

5. Letter from C. W. Fay (WE) to U. S. Nuclear Regulatory Commission, Subject: DOCKET NO. 50-266 AND 50-301 SEMIANNUAL MONITORING REPORT POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, February 22, 1988.

6. "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, A Guidance Manual for Users of Standard Technical Specifications," NUREG-0133, October 1978.

7. "General Contents of the Offsite Dose Calculation Manual," Revision 1 Branch Technical Position, Radiological Assessment Branch, NRC, February 8, 1979.

8. "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I," Regulatory Guide 1.109, Rev. 1, October 1977.