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Point Beach Nuclear Plant, Units 1 and 2  
Dockets 50-266 and 50-301  
License Nos. DPR-24 and DPR-27

Annual 10 CFR 50.59 Summary Report for 2003

As required by 10 CFR 50.59, Nuclear Management Company, LLC (NMC), is submitting this annual, 10 CFR 50.59 Summary Report for the Point Beach Nuclear Plant (PBNP).

This report consists of two enclosures. Enclosure 1 contains descriptions of facility changes, tests and experiments in accordance with 10 CFR 50.59 during 2003. Enclosure 2 contains commitment change evaluations completed in 2003.

This letter contains no new commitments and no revisions to existing commitments.



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Enclosures (2)

cc: Administrator, Region III, USNRC  
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**ENCLOSURE 1**

**POINT BEACH NUCLEAR PLANT  
ANNUAL 10 CFR 50.59  
SUMMARY REPORT FOR 2003**

**10 CFR 50.59 EVALUATIONS**

**Procedure Changes  
Modifications  
FSAR Changes and Other Evaluations**

**6 pages follow**

## **10 CFR 50.59 CHANGES**

### **PROCEDURE CHANGES**

#### **Crediting of Auxiliary Feedwater Pump Minimum Flow Recirculation Line Flow Restricting Orifices Installed by MR 02-039\*A/B/C/D and OPR000031 Compensatory Action Removal**

Evaluation 2003-001 addresses several interrelated tasks to support the return of the Auxiliary Feedwater (AFW) pump recirculation line flow restricting orifices to service, this action will permit the elimination of the compensatory actions stated in operability recommendation OPR000031 to secure the AFW pumps if discharge flow cannot be maintained above the specified minimum values. The activities to be addressed by this evaluation are:

1. Evaluation of AFW orifices replaced by MR 02-039\*A/B/C/D
2. Change in requirements for bypassing of main service water (SW) Zurn strainers in operations procedure OI 70
3. Elimination of compensatory actions in OPR000031 to secure AFW pumps

Evaluation 2003-001 addresses crediting of the design functions of the Auxiliary Feedwater recirculation line, including the flow restricting orifices (1(2) RO-4003, RO-4008, RO-4015) that have been installed by modifications MR 02-039\*A/B/C/D). The installation preceded based on 10 CFR 50.59 screenings SCR 2002-0021-03 and SCR 2003-0106.

Currently, the design function of the orifices to pass the recommended AFW pump minimum flow rates is not being credited in the plant's licensing basis. Operability recommendation OPR000031 will be revised to eliminate the compensatory actions for the AFW pumps to secure them on low flow. This 50.59 evaluation will provide the basis for revising the operability recommendation to credit the orifices that have already been installed. The SW system will still be considered operable but nonconforming until the Zurn strainers are evaluated to perform a safety function to prevent debris from plugging AFW components. The Zurn strainer issue is outside the scope of this evaluation. New requirements will be added to OI 70 to declare the SW and AFW systems inoperable if the Zurn strainers are bypassed.

**Summary of 10 CFR 50.59 Evaluation:** The basis for evaluation 2003-001 centers around the orifices, and the justification that they will not plug with debris already present in the SW piping system (tubercles, corrosion products, etc.) or in the condensate storage tanks (CSTs). Testing has determined that plugging of the orifices with debris that will pass through the Zurn strainers (silt, lake grass, Zebra mussels) will not occur. The orifices are unlikely to fail in a mode that will result in increased flow.

Therefore, the orifices are capable of performing their design function to pass and restrict flow, and the AFW pumps are not adversely affected by crediting of the orifices. The new requirements in OI 70 to enter LCO 3.0.3 and declare SW and AFW inoperable when bypassing the Zurn strainers, are appropriate actions and consistent with the PBNP current licensing basis (CLB). The elimination of the compensatory actions is also appropriate based on the acceptability of the orifices, and will not affect the AFW pumps adversely. Therefore, the equipment important to safety in the AFW and SW systems are not more likely to malfunction as evaluated in the CLB. The radiological consequences of all accidents that rely on the AFW and SW systems are not affected. The AFW and SW systems cannot initiate an accident evaluated in the CLB different than any previously evaluated. The possibility of a malfunction of an SSC important to safety with a different result (common mode AFW system failure) is not being created. A design basis limit for a fission product barrier is not affected, and no method of evaluation is affected. Based on the evaluation above, no activity requiring prior NRC approval was identified, and no change to Technical Specifications are required. These activities will require revision to the FSAR. (EVAL 2003-001)

### **MODIFICATIONS COMPLETED IN 2003**

#### **MR 99-012, Retirement of the Retention Pond**

Modification 99-012 will install the appropriate piping, isolation valves and filters to allow bypassing the retention pond. The original function of the retention pond was to allow for solids removal from the waste stream prior to release to Lake Michigan. The retention pond is being bypassed to prevent the release of potentially contaminated effluents from the retention pond to the environment in the area of the retention pond due to leakage of the pond. The retention pond and immediate vicinity are all located on the licensee property but outside the protected area fence. The retention pond is not specifically considered part of the Liquid Radioactive Effluent Treatment System per the Radiological Effluent Control Manual (RECM). However the retention pond is included in Figure 2-1 of the RECM.

**Summary of 10 CFR 50.59 Evaluation:** As part of the retirement of the retention pond, the effluent sump discharge will be rerouted back into the plant and join the common discharge piping downstream of the new filters but upstream of RE-230. The only inputs to the effluent sump after the modification will be the sewage treatment plant and the potable water reverse osmosis (RO) unit filter backwash and reject. For this reason, the effluent sump pumps are being replaced with smaller, lower capacity pumps. These inputs are not expected to be contaminated but will still be routed past RE-230 prior to discharge. All penetrations will be completed per NP 8.4.11 to maintain the fire rating of each barrier. The addition of the very small instrument air load will not affect the operation of the instrument air system. The monitoring of radiological releases from the

plant will not change. All current effluents, which flow past RE-230, will continue to be monitored by RE-230 prior to release to the environment. The setpoints and alarm response to alarms generated by RE-230 will be determined per the Offsite Dose Calculation Manual (ODCM). A local area monitor will monitor the filter, which treats the facade sumps, and routine surveys will be performed. Rerouting of the plant effluent piping in non-vital areas of the plant and installing additional electric loads on non-vital motor control centers will not increase the probability or possibility of malfunction of any equipment important to safety. This piping change will not create a different type of accident or constitute a test or experiment as described in the CLB. Only the programs for the monitoring and reporting of radiological effluents are contained in the CLB, and these will not change as a result of this modification. (SE 1999-0135)

#### **MR 00-043, Pressure Regulator for Nitrogen Tank T-101**

MR 00-043 will add a pressure regulator downstream of isolation valve NG-81 to properly control Nitrogen Storage Tank pressure. This will change the pressure regulation control from relief valves NG-1046D&C to the new regulator. The interim configuration will be the same as normal system line-up. The pipe cap downstream of valve NG-82, which is normally closed, will be removed and the regulator attached. The location of the new regulator is outside and any nitrogen leakage will not be a suffocation hazard to the workers. The new regulator will modulate the current pressure swings of the tank and header to improve system pressure stability, reliability, and performance. Also, the situation of relief valves not re-seating properly and wasting nitrogen gas will be corrected because the relief valve will not degrade due to cycling.

**Summary of 10 CFR 50.59 Evaluation:** The nitrogen gas system is a non-safety related system supplying a non-vital cover gas to plant components. This is a long-term corrosion and explosion preventative measure. The system will not be compromised or shut down during installation. Post-installation will have the pressure regulation of the header switched from the relief valves to the new regulator. Therefore the proposed activity will not increase the probability of occurrence of an accident or event. Nitrogen gas itself is only a suffocation hazard in confined spaces and is otherwise inert. The installation will occur outside and any leakage of nitrogen would not be a threat to worker or nuclear safety. The nitrogen storage tank and header will operate as previously with a normal system line-up during installation. After installation the regulator will be adjusted to regulate the header pressure safer and more effectively. This will improve component reliability and overall plant and nuclear safety. The installation modification does not affect any Technical Specification requirements or create an unreviewed safety question. (SE 2000-0085)

**MR 99-046, Construct 3-Hour Fire Rated Wall in the U1 Motor Control Center (MCC) Room (Fire Zone 156)**

MR 99-046 installed a Seismic Class 1 three-hour fire-rated wall west of Column Line J in Fire Zone 156 (U1 MCC Room) of the 8' PAB. The wall provides a three-hour fire barrier between redundant trains of the Unit 1 Charging Pump cables, which are routed through the room. Revision 1 of this safety evaluation is being written to document a change in the proposed licensing status of the new barrier installed by MR 99-046. Originally the installation of this barrier was planned to subdivide Fire Area A06 into two distinct safe shutdown sub-areas. Further analysis of this modification and its effects on the Safe Shutdown Analysis, Safe Shutdown Analysis Management System (SSAMS), and Cable and Raceway Data System (CARDS) indicated that incorporation of the proposed change resulted in no benefit to the Fire Protection Program; therefore the existing fire area was not subdivided. Erection of this barrier provides the separation required by Exemption No. 1 (Fire Protection Evaluation Report - FPER Table 5.2.6-1) and provides protection to operators performing manual actions on either side of the wall for a fire located on the immediate opposite side of the wall. Therefore, the wall performs its desired function within the bounds of the existing Appendix R licensing basis without requiring significant revision of the Safe Shutdown Analysis or supporting documentation. Consequently this safety evaluation is being revised to document that the new room created by the erection of this wall is still contained in Fire Area/Zone A06/156 and that Exemption No. 1 remains in effect.

**Summary of 50.59 Evaluation:** MR 99-046 installed a Seismic Class 1 three-hour fire-rated wall west of Column Line J in Fire Zone 156 (Unit 1 MCC Room) of the 8' PAB. The wall will provide a three-hour fire barrier between redundant trains of the Unit 1 Charging Pump cables, which are routed through the room. Installation of the fire rated wall will not interfere with the operation or maintenance of any plant equipment. The new wall will provide full compliance with Appendix R, as exempted via Exemption No. 1 (FPER Table 5.2.6-1), for separation of redundant trains of equipment in this Fire Area. The installation of the wall will not affect any Technical Specification requirements or create an unreviewed safety question. (SER 2000-0107-01)

**MR 01-081, PSL-CR-001 Root Isolation Valve Addition**

MR 01-081 will add a root isolation valve and test tee to the cryogenic gas compressor suction low alarm, PSL-CR-001. Addition of a root isolation valve and test tee will allow for calibration of the pressure switch with the unit online. In addition installation of the valve will allow for ease in calibration compared to the current system configuration. Currently calibration of the pressure switch can only be accomplished by a complicated vent and purge. Installation of the root

isolation valve will remove these constraints. The Cryogenic System (CR) is not used to remove Krypton-85 gas at PBNP, as stated in FSAR Chapter 11.2. However a portion of the system is used to provide a flow path from the letdown gas strippers to the cryogenic gas compressors. Gas is routed from the compressors to a common decay system for removal of Xenon-133. The gas leaving the decay system is recycled back to the volume control tank. PSL-CR-001 provides an alarm to the control room in the event of low suction pressure to the cryogenic gas compressor. Installation of a root isolation and test tee will be components similar to those already installed on cryogenic components. The third connection on the test tee will be capped. All valves and test tees are rated for well over the system operating pressure and are fabricated from stainless steel.

**Summary of 50.59 Evaluation:** The Cryogenic System is not relied upon to mitigate any postulated accident or event. A description of the system and its functions is provided in FSAR Chapter 11.2, "Gaseous Waste Management System." Installations of a root isolation valve and test tee connection do not affect any FSAR postulated accidents. FSAR Chapter 14.2.3, "Accident Release-Waste Gas," shows that a rupture of a gas decay tank is the bounding gas release accident scenario and bounds a cryogenic vessel rupture. The valve and test tee connection will be fabricated from stainless steel and have pressure ratings that exceed the design pressure of the Cryogenic System. The valve and test tee being installed are identical to similar valves and test tee connections used on other calibrated components of the system. Manipulation of the valve will be administratively controlled to ensure proper valve alignment. The change does not affect the margin of safety and system operation is still bounded by all applicable Technical Specifications. Therefore this change does not constitute an unreviewed safety question since the valve and test are compatible with the system requirements and any postulated failure of the valve or fitting are bounded by current plant analysis. (SER 2001-0042)

## **FSAR CHANGES AND OTHER EVALUATIONS**

### **FSAR Appendix A.2, Method of Evaluation Change Eliminating Arbitrary Intermediate Pipe Rupture Analysis for HELBs Outside of Containment**

FSAR Appendix A.2 involves a change to a method of evaluation described in the Point Beach FSAR. The proposed activity is to eliminate the requirement to postulate arbitrary intermediate pipe ruptures for High Energy Line Breaks (HELB) outside of containment from the Point Beach licensing basis. The determination of pipe break location is an element of the method(s) of evaluation used for calculating dynamic effects and environmental effects of high energy line breaks. FSAR Appendix A.2 High Energy Pipe Failure Outside Containment, Section A.2.2, Criteria, item 5 states, "Break locations are selected in accordance with Reference 1." Reference 1 is "General Information Required for

**Consideration of the Effects of a Piping System Break Outside of Containment," AEC, December 19, 1972. This general information was attached to a letter from A. Giambusso (Atomic Energy Commission) to Wisconsin Electric dated December 19, 1972. An Errata Sheet for this letter was attached in a letter from the AEC to Wisconsin Electric dated January 24, 1973. The Giambusso letter described above provided criteria used to determine the design basis break locations in the (high-energy) piping systems outside of containment. One of these criteria is that piping breaks are to be postulated to occur at intermediate locations, in addition to those postulated to occur at terminal ends, and at intermediate locations meeting certain stress intensity or fatigue cumulative usage factor criteria. (Terminal ends are extremities of piping runs that connect to structures or components, or pipe anchors that act as rigid constraints to pipe motion.) On June 19, 1987, the NRC issued Generic Letter 87-11, "Relaxation in Arbitrary Intermediate Pipe Rupture Requirements." The generic letter included Revision 2 to Branch Technical Position MEB 3-1 from Section 3.6.2 of the Standard Review Plan (NUREG-0800). MEB 3-1, "Postulated Rupture Locations in Fluid System Piping Inside and Outside Containment," was created to utilize the available piping design information by postulating pipe ruptures at locations having relatively higher potential for failure. In addition, this revision to MEB 3-1 eliminated all dynamic effects and environmental effects resulting from arbitrary intermediate pipe ruptures.**

**Summary of Evaluation: NRC Generic Letter 87-11, states that "Licensees of operating plants desiring to eliminate previously required effects from arbitrary intermediate pipe ruptures may do so without NRC approval unless such changes conflict with the license or technical specifications." NRC has determined that there are no conflicts with the license or technical specifications as a result of this change. Therefore, the change to the method of evaluation for selecting pipe break location for high energy line breaks outside of containment does not result in a departure from a method of evaluation as defined in 10 CFR 50.59. Therefore NRC approval of the change by a license amendment is not required. (EVAL 2003-002)**



**ENCLOSURE 2**

**POINT BEACH NUCLEAR PLANT  
ANNUAL 10 CFR 50.59  
SUMMARY REPORT FOR 2009**

**COMMITMENT CHANGE EVALUATIONS**

2 pages follow

## **Commitment Change Evaluations**

### **Boric Acid Leakage and Corrosion Monitoring**

The original commitment stated that procedures IT-230/235 would be revised to include an inspection checklist consistent with the principal leakage locations, per GL 88-05. Commitment Change (CCE-001) updates the reference from procedures IT-230/235 to Boric Acid Leakage and Corrosion Monitoring Program procedure (BALCM) Appendix A, Reactor Coolant Leak Test Boundary Document.

**Justification For Change:** The BALCM Appendix A provides references to the RCS pressure test procedures 1(2)-PT-RCS-1 similar to procedures IT-230/235 however, BALCM Appendix A provides reasons for selection of the components listed in the pressure test procedures. Boric Acid Program documents have been recently issued and reflect the latest guidance with respect to this pressure test. (CCE 2003-001)

### **Security Equipment Replacement Project**

The commitment for Security Equipment Replacement Project itself is unchanged from a technical perspective. This change is schedule only. The completion date is extended from December 31, 2003 to June 30, 2004. (CCE 2003-003)

**Justification For Change:** The Security Equipment Replacement Project is divided into two separate projects: 1) replacement of security computer hardware and software, and 2) replacement of the security perimeter. The computer hardware and software replacement was completed in 2003. Although significant parts of the remaining scope will be installed and tested before the current commitment date, the entire modification will not be accepted in time to meet the December 31, 2003 due date.

The progress on security perimeter replacement was reviewed and found acceptable during an NRC security inspection conducted on August 4-8, 2003. Revising the due date/commitment date to June 30, 2004, will provide sufficient time to resolve remaining implementation issues in a thorough manner prior to acceptance of the modification.

## **Cavity Seal Rings**

The original commitment for the Cavity Seal Rings stated the cavity seal rings would be stored in a specific storage location, namely, sufficiently above the cavity floor to permit cooling airflow through the annulus. The commitment change states that PBNP will no longer store the cavity seal ring above the annulus. The cavity seal ring described in this commitment will no longer be used. Instead, a segmented cavity seal ring is used in Unit 1 and will be used in Unit 2 starting from the U2R26 refueling. The segmented cavity seal ring can be removed from containment to the 66-foot elevation of the primary auxiliary building (PAB) at the end of each refueling outage. (CCE 2003-004)

Justification For Change: The Cavity Seal Rings commitment was previously inactivated on June 19, 2001 per CCE 2000-011, which stated that at the end of U1R25 the old cavity seal ring was cut-up and removed from containment permanently. The same will occur in U2R24. The old cavity seal ring was used in U2R24 and U2R25. It has been stored in the containment during U2C25 and U2C26. Although the commitment was inactivated, the old cavity seal ring has been stored in accordance with the original commitment; that is, sufficiently above the cavity floor to permit cooling air flow through the annulus. For U2C25 it was stored the same as previous cycles; that is, suspended from the zip lifts on the reactor head. For U2C26, the seal ring is being supported on stands described in temporary modification TM 02-022.

This commitment change has been created to document incorrect statements made in a previous commitment change, CCE 2000-011. All statements made about Unit 1 were correct and actions were completed prior to in-activating the commitments. The Unit 2 statements were made prior to completion of the actions. The commitments may remain inactive.