

September 23, 2002

Mr. A. Cayia  
Site Vice President  
Point Beach Nuclear Plant  
Nuclear Management Company, LLC  
6610 Nuclear Road  
Two Rivers, WI 54241

SUBJECT: POINT BEACH NUCLEAR PLANT  
NRC INSPECTION REPORT 50-266/02-09(DRS); 50-301/02-09(DRS)

Dear Mr. Cayia:

On August 9, 2002, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Point Beach Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on August 9, 2002, with you and members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection focused on the design and performance capability of the electrical portion of the diesel generator system, the high pressure safety injection system and the component cooling water system to ensure that the systems were capable of performing their required safety-related functions.

Based on the results of this inspection, the inspectors identified two findings of very low safety significance (Green) that were determined to involve a violation of NRC requirements. However, because of the very low safety significance and because the findings were entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny these Non-Cited Violations, you should provide a response to this letter with the basis for your denial or concern, within 30-days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at the Point Beach Nuclear Power Plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Zelig Falevits, Acting Chief  
Electrical Engineering Branch  
Division of Reactor Safety

Docket Nos. 50-266; 50-301  
License Nos. DPR-24; DPR-27

Enclosure: Inspection Report 50-266/02-09(DRS);  
50-301/02-09(DRS)

cc w/encl: R. Grigg, President and Chief  
Operating Officer, WEPCo  
R. Anderson, Executive Vice President  
and Chief Nuclear Officer  
T. Webb, Licensing Manager  
D. Weaver, Nuclear Asset Manager  
T. Taylor, Plant Manager  
J. O'Neill, Jr., Shaw, Pittman,  
Potts & Trowbridge  
K. Duveneck, Town Chairman  
Town of Two Creeks  
D. Graham, Director  
Bureau of Field Operations  
A. Bie, Chairperson, Wisconsin  
Public Service Commission  
S. Jenkins, Electric Division  
Wisconsin Public Service Commission  
State Liaison Officer

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-266; 50-301  
License Nos: DPR-24; DPR-27

Report No: 50-266/02-09(DRS); 50-301/02-09(DRS)

Licensee: Nuclear Management Company, LLC

Facility: Point Beach Nuclear Plant, Units 1 & 2

Location: 6610 Nuclear Road  
Two Rivers, WI 54241

Dates: July 22, 2002, through August 9, 2002

Inspectors: H. Walker, Lead Inspector  
G. Hausman, Reactor Inspector  
D. Schrum, Reactor Inspector  
S. Sheldon, Reactor Inspector  
C. Baron, Contract Inspector  
C. Jones, Contract Inspector  
A. Klett, Summer Intern

Approved by: Zelig Falevits, Acting Chief  
Electrical Engineering Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000266-02-09(DRS), IR 05000301-02-09(DRS); Nuclear Management Company, LLC; on 07/22-08/09/02; Point Beach Nuclear Plant, Units 1 & 2. Safety System Design and Performance Capability Inspection.

The inspection was a 3-week baseline inspection for the biennial review for design and performance capability of the electrical portion of the diesel generator system, the high pressure safety injection system, and the component cooling water system. The inspection was performed by a team of inspectors that consisted of a team leader, three Region III inspectors, and two consultants. In addition an NRC inspector trainee also accompanied the inspection team. Two Green findings were identified, one involving deficiencies in emergency operating procedures and the other inadequate corrective actions in correcting calculation deficiencies.

The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the Significance Determination Process (SDP) does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. Inspector-Identified Findings

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Several specific emergency operating procedure (EOP) deficiencies were identified during the inspection.

The finding was considered to be greater than minor because the failure of licensee personnel to take appropriate actions under post-accident conditions could have resulted in system operating modes that had not been analyzed, and could have affected the performance of safety-related components and had a credible impact on safety. Because there was no actual failure of safety-related components associated with the mitigating systems cornerstone, the finding is considered to be of very low safety significance (Green). (Section 1R21)

- Green. The inspectors identified a Non-Cited Violation (10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action") where the licensee failed to take adequate corrective actions to resolve previously identified problems with the plant's engineering calculations concerning refueling water storage tank (RWST) water levels.

The finding was considered to be greater than minor because licensee personnel failed to correct repetitive RWST calculation errors, which resulted in the propagation of erroneous RWST elevation vs. level data into inputs to other

calculations. Inaccurate level indications were provided to the control room operators during performance of emergency operating procedures (EOPs).

The failure to provide the operator with accurate RWST level indications during the performance of EOPs during a potential loss of coolant accident could have adversely affected the performance of safety-related components and had a credible impact on safety. Because there was no actual failure of safety-related components associated with the mitigating systems cornerstone, the finding is considered to be of very low safety significance (Green). (Section 4OA2)

B. Licensee-Identified Findings

None.

## Report Details

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R21 Safety System Design and Performance Capability (71111.21)

##### Introduction

Inspection of safety system design and performance verifies the initial design and subsequent modifications and provides monitoring of the capability of the selected system to perform design bases functions. As plants age, the design bases may be lost and important design features may be altered or disabled. The plant risk assessment model is based on the capability of the as-built safety system to perform the intended safety functions successfully. This area of inspection will verify that controls of the mitigating systems and barrier integrity cornerstones, for which there are no indicators to measure performance, exist and are used.

The objective of the safety system design and performance capability inspection was to assess the adequacy of calculations, analyses, other engineering documents, and operational and testing practices that were used to support the performance of the electrical portion of the diesel generator system, the high pressure safety injection system and the component cooling water system during normal, abnormal, and accident conditions. The inspection was performed by a team of inspectors that consisted of a team leader, three Region III inspectors, and two consultants. In addition an NRC inspector trainee also accompanied the inspection team.

The electrical portion of the diesel generator system, the high pressure safety injection system and the component cooling water system were selected for review during this inspection. This selection was based upon:

- having a high probabilistic risk analysis ranking;
- having had recent significant modifications; and
- not having received recent NRC review.

The criteria used to determine the system's performance included:

- applicable technical specifications;
- applicable USAR sections;
- licensee responses and commitments to generic communications; and
- the systems design documents.



The following system and component attributes were reviewed in detail:

System Requirements

Process Medium - water  
Energy Source - electrical power  
Control Systems - initiation, control, and shutdown actions  
Operator Actions - initiation, monitoring, control, and shutdown  
Heat Removal - cooling water

System Condition and Capability

Installed Configuration - elevation and flow path operation  
Operation  
Design - calculations and procedures  
Testing - flow rate, pressure, temperature, voltage, and current

Components

Three components were selected for detailed review during the inspection. The chosen components were the G02 electrical diesel generator, a safety injection pump, and the component cooling water heat exchanger. The following attributes were reviewed for these components:

Component Degradation  
Equipment/Environmental Qualification - temperature (pumps)  
Vibration (pumps and generator)  
Equipment Protection - flood, missile and freezing (pumps)  
Component Inputs and Outputs  
Industry Operating Experience

.1 System Requirements

a. Inspection Scope

The inspectors reviewed the updated safety analysis report, technical specifications, system descriptions, drawings and available design basis information to determine the performance requirements of the selected systems. The reviewed system attributes included process medium, energy sources, controls, and heat removal.

**Process Medium:** This attribute required review to ensure that emergency service water would supply sufficient water to cool safety related components following an event or transient.

**Energy Sources:** This attribute needed to be reviewed to verify that vital power would be available when required and to ensure that the safety injection and component cooling water systems would start and perform when needed and to verify that appropriate valves would have sufficient power to change states when required.

**Controls:** This attribute initiation, control, and shutdown actions were properly established and functional. Additionally, review of alarms and indicators was necessary to ensure that operator actions, when needed, would be accomplished in accordance with the design.

**Operations:** This attribute was reviewed because operator actions played an important role in the ability to ensure that the selected systems would accomplish their safety related functions.

**Heat Removal:** This attribute required review to ensure that the safety injection and the component cooling water systems received adequate cooling water for heat removal.

b. Findings

Deficiencies in Emergency Operating Procedures

The inspectors reviewed several emergency operating procedures (EOPs) that contained actions related to post-accident operation of the high head safety injection system. As a result of this review, several concerns, applicable to both the Unit 1 and Unit 2 EOPs, were identified. Three important issues were noted:

- Revision 31 of EOP-1, "Loss of Reactor or Secondary Coolant," and Revision 27 of EOP-1.3, "Transfer to Containment Sump Recirculation," included steps that could have resulted in the potential run-out of the high head safety injection pumps or low head safety injection pumps under post-accident conditions.

Step 21 of EOP-1 directed operators to open both motor operated reactor vessel safety injection isolation valves, SI-878A and SI-878C, within the first four hours of a loss of coolant accident. Opening these valves would establish two flow paths from the "B" high head safety injection pump injection header to the reactor vessel, in addition to the two flow paths to the reactor coolant system cold legs. Step 33a of EOP-1.3 directed the operators to open the manual high head safety injection pump discharge header cross-connect valves, SI-829A and SI-829B, if the "B" safety injection train was not available. The operators were then directed to shut the "A" high head safety injection pump discharge motor operated valve SI-866A. Opening these cross-connect valves would have established a flowpath from the "A" high head safety injection pump discharge to the "B" high head safety injection header, which could have previously been aligned to the reactor vessel by opening valves SI-878A and SI-878C.

As a result of the above system alignment, a single high head safety injection pump, operating in either injection mode, or recirculation "piggy-back" mode could have supplied flow through a total of four flowpaths. The inspectors were concerned that this alignment with multiple flow paths could result in run-out of the high head safety injection pumps or low head safety injection pumps under post-accident conditions.

In response to these concerns, licensee personnel reviewed the safety injection flow analysis, Calculation N92-086, "ECCS Pump NPSH Calculation," Revision 3, and determined that the current revision did not address these "four flowpath" operating modes. During the inspection, licensee personnel initiated a corrective action program (CAP) document number 028893 to address this specific calculation issue. The evaluation of this issue by licensee personnel concluded that the flow condition had been previously analyzed and that the potential high head safety injection pump run-out condition associated with this alignment would not result in an operability concern.

In addition to the specific issue addressed by CAP 028893, a more important condition could result from this valve alignment in conjunction with a loss of instrument air to RHR throttle valves RH-624 and RH-625. This condition could have resulted in the runout (cavitation) of an operating low head safety injection pump attempting to provide full flow to the reactor vessel as well as the operating high head safety injection pump suction. This condition had not been previously evaluated. On July 31, 2002, licensee personnel initiated CAP 028910 to address this issue. As a result of the licensee's evaluation, Temporary Procedure Change Nos. 2002-474, 2002-475, 2002-476, and 2002-0477 were issued on August 1, 2002, to remove step 21 from EOP-1 and step 33a from EOP-1.3 for both units. These procedure changes resolved the potential runout concerns, and were included in permanent EOP revisions issued during the inspection.

- Revision 27 of EOP-1.3, "Transfer to Containment Sump Recirculation," included steps that could have resulted in a refueling water storage tank (RWST) isolation valve, SI-856A or SI-856B, being opened at the same time as the associated containment sump isolation valves, SI-850/851A or SI-850/851B, due to a single failure of a valve. This alignment could have resulted in the RWST draining directly to the containment sump under some post-accident conditions.

Step 32b of EOP-1.3 directed the operators to open train "B" containment sump isolation valve SI-850B (valve SI-851B was previously opened). At this point in the procedure, train "B" RWST isolation valve SI-856B would also be open. Step 32c then directed the operators to shut SI-856B. The inspection team noted that a single failure of valve SI-856B to shut would have resulted in an open flowpath from the RWST to the containment sump. If the containment pressure was sufficiently low, the contents of the RWST could have then drained directly to the containment sump, reducing the inventory available for containment spray and the time available to complete the EOP actions. Steps 33c and 33d were similar for train "A."

In response to this concern, the licensee initiated CAP 028911. Action on the CAP follow-up determined that this was a previously unrecognized failure mode requiring additional evaluation. The licensee also issued Operability Determination OPR-000024, Revision 0, to address this issue on August 2, 2002. OPR-000024 stated that the radiological accident analysis, Final Safety Analysis Report (FSAR) Table 14.3.5-4, assumes a post loss of coolant accident (LOCA) containment spray duration of 65 minutes. This spray duration could be

reduced due to RWST inventory being diverted directly to the containment sump. OPR-000024 concluded that the containment spray system was “Operable But Nonconforming” and that no compensatory measures were required.

Revision 28 of EOP-1.3, “Transfer to Containment Sump Recirculation - Low Head Injection,” was issued on August 7, 2002. This procedure revision revised the subject valve alignment sequence and included appropriate “Response Not Obtained” actions to address the failure of valve SI-856B (step 23d) or SI-856A (step 25d) to shut.

- Revision 27 of EOP-1.3, “Transfer to Containment Sump Recirculation,” included steps that could have resulted in operation of a high head safety injection pump with its suction valve significantly throttled under large break LOCA conditions. This could have resulted in inadequate pump net positive suction head (NPSH) and potential pump damage or failure.

Step 19 of EOP-1.3 directed the operators to align the “B” safety injection train using the “Alternate Method.” This step was only to be used if the “A” train was not available due to a failure. Prior to this sequence of steps the “B” train high head and low head safety injection pumps would both be aligned to the RWST and operating. Step 19c would throttle the low head safety injection flow until the total high head and low head safety injection flow was less than 2200 gpm. Step 19d would then throttle the RHR heat exchanger outlet to high head safety injection pump “piggyback” valve SI-857B open until the low head safety injection pump discharge pressure was reduced to less than 130 psig. The high head safety injection pump suction from the RWST, SI-896B, would then be shut by step 19e. At this point in the procedure, the high head safety injection pump could be operating in “piggyback” mode with suction valve SI-857B throttled. Similarly, step 24 of EOP-1.3 directed the operators to align the “A” safety injection train using the “Alternate Method” if the “B” train was not available due to a failure.

The inspection team noted that the existing EOP setpoint basis document for the 130 psig value (EOPSTPT W.2, Revision 0) did not provide an adequate basis for this value. The EOP setpoint basis document contained an informal calculation based on an assumed post-accident safety injection flow distribution. The team identified a concern that the high head safety injection pumps may not be provided with adequate NPSH under all accident scenarios.

In response to this concern, the licensee performed informal flow analyses during the inspection, using their existing emergency core cooling system (ECCS) computer flow model. For the most limiting postulated large break LOCA, the licensee determined that the EOP setpoint value of 130 psig could have resulted in valve SI-857B being throttled to a position of less than 10 percent opened, potentially resulting in inadequate NPSH for the operating high head safety injection pump when valve SI-896B was closed. This result indicated that the high head safety injection pump could have been damaged or failed under large break LOCA conditions.

The licensee also performed informal flow analyses for a limiting small break LOCA condition, assuming no low head safety injection flow due to elevated reactor coolant system pressure. For this condition, the EOP setpoint value of 130 psig could also result in valve SI-857B being throttled to a position of less than 10 percent opened. However, the small break LOCA analysis indicated that the operating high head safety injection pump would still have sufficient NPSH. This analysis provided reasonable assurance of safety injection system operability under the most limiting small break LOCA conditions.

In response to this issue, licensee personnel initiated CAP 028992 during the inspection. In addition, Revision 28 of EOP-1.3, "Transfer to Containment Sump Recirculation - Low Head Injection," was issued on August 7, 2002. This procedure revision eliminated the "piggyback" alignment of the high head safety injection pumps during large break LOCA conditions. Therefore, the safety injection system would be capable of performing its safety functions under large break LOCA conditions.

For small break LOCA conditions, this "piggyback" alignment would still be implemented in accordance with Revision 8 of EOP-1.4, "Transfer to Containment Sump Recirculation - High Head Injection." Although this mode of operation was found to be acceptable, operation of the high head safety injection pumps with the suction valves SI-857A/B throttled is not desirable. The licensee is continuing to investigate this condition under CAP 028992.

In addition to these three issues, the team identified several less significant EOP related concerns. Licensee personnel initiated CAP 028946 and CAP 028894 to address these issues. In addition, CAP 028998 was initiated to address the overall EOP issue and to ensure that comprehensive corrective action was implemented.

c. Analysis

An evaluation of this issue concluded that it was caused by a performance deficiency resulting in a finding of very low safety significance (Green). The mitigating systems cornerstone was affected due to the possible degrading of long term heat removal due to this condition. No other cornerstones were determined to be degraded as a result of this issue.

This finding was determined to be greater than minor based on the potential to affect the safety injection and containment spray systems' design basis functions. Plant EOPs included steps that could have resulted in system operating modes that had not been analyzed, and could have resulted in potential safety system operability was concerns. The capability of these systems to perform their mitigating function was based on the operability of both the low head and high head safety injection pumps, as well as sufficient RWST inventory to support the required containment spray duration. The design basis calculations did not support some of the system alignments included in the EOPs, and analyses have concluded that some of these alignments were not acceptable.

This finding is assessed as green because it does not represent an actual loss of the safety injection or containment spray systems' safety functions. The specific accident conditions that could have challenged these systems have not existed, and the systems have not been operated under these operating modes. The licensee has implemented appropriate corrective actions to ensure continued operability of these systems.

d. Enforcement

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and that these activities be accomplished in accordance with these instructions, procedures or drawings.

Contrary to the above, as of August 2002, the design basis for the safety injection system was not correctly translated into plant emergency operating procedures. These plant procedures included steps that could have resulted in system operating modes that had not been analyzed, and were subsequently found to be unacceptable. The failure to incorporate this design basis requirement into controlling procedures is a violation.

Licensee personnel implemented appropriate corrective actions to address these issues. Using the SDP process to determine the safety significance, the finding was found to be of very low safety significance (Green). Because no actual loss of safety system function occurred and mitigating systems remained operable and CAP 20014512 was initiated to enter the issue into the corrective action program, the violation will be a Non-Cited Violation (NCV) as allowed by Section VI.A.1, of the NRC Enforcement Policy (NCV 50-266/02-09-01(DRS); NCV 50-301/02-09-01(DRS)).

**4. OTHER ACTIVITIES (OA)**

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed a selected sample of CAPs, associated with the selected systems, to verify an appropriate threshold for identifying issues and to verify the adequacy of corrective actions for the identified issues. In addition, CAPs written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problem into the corrective action system.

b. Findings

The refueling water storage tank (RWST) provides the primary source of borated water for emergency injection into the reactor coolant system and for containment spray during postulated large/small break LOCAs. The control room's RWST level instrumentation provides the plant operators with critical RWST level indication. Engineering calculations establish the numeric data needed to calibrate the RWST level

instruments and to ensure that the required amount of borated water was available/deliverable during the performance of the plant's EOPs.

Calculation N-92-045, "RWST Elevation vs. Level," Revision 0, dated May 4, 1992, was written to determine the elevation (above grade) of the RWST fluid level as a function of RWST percent indicated level. In 1997, the licensee determined that the original calculation was incorrect since it had set the 100 percent indicated level at the upper instrument tap instead of at the tank overflow connection. The licensee rewrote Calculation N-92-045 to correct this error and to update the calculation format (Revision 1, December 15, 1997). However, in March 2001, the licensee identified five RWST level-related calculations (evaluated under CAP 013639) that had not been updated to incorporate the changes contained in the 1997 revision.

During this inspection, the inspectors reviewed Calculation N-92-045, Revision 1, and found that the RWST level equation contained an additional error. The distance between the tank bottom and the level instrument's lower tap (1.396 feet) had been incorrectly omitted from part of the revised elevation equation. The inspectors determined that due to the licensee's failure to properly correct the calculation error in Revision 0, the revised calculation was still incorrect at the time of the inspection. Moreover, the required corrections to the other calculations identified by the licensee had not been performed as intended and were also in error. As a result of these errors, EOPs for LOCAs as well as other RWST related procedures could have been adversely affected. In addition, such procedures might have degraded further through the continued propagation of the RWST elevation vs. level calculation error to other calculations and procedures. At the completion of this inspection, not all of the affected calculations that were dependent on the results of Calculation N-92-045 had been identified and evaluated. However, the inspectors concluded that the discovery of the additional error did not appear to affect the operability of the plant.

### Analysis

This finding was determined to be greater than minor based on the potential impact on multiple calculations/procedures and based on the licensee's failure to take adequate corrective measures to correct identified calculation errors. The original Calculation N-92-045 and its 1997 revision both provided inaccurate results that could have compromised critical safety functions. While the calculation errors identified during this inspection did not result in an actual operability problem, the inspectors considered it fortunate that an actual operability problem did not result from the additional calculations and the associated procedures that were affected. For example, RWST level errors could result in the operators discontinuing containment spray or realigning safety injection flow prematurely. The errors could also result in operating safety injection system pumps without adequate suction pressure, possibly resulting in pump damage and the loss of one or both trains of emergency core cooling. Moreover, since the revision to the original calculation was intended to correct errors in the original calculation and failed to do so, the inspectors determined that the plant's corrective action process was not adequate in this case. The finding is assessed as green because it does not represent an actual operational failure. Nevertheless, the failure of the licensee to correct an identified calculation error resulted in new errors and the propagation of the erroneous data as inputs to other calculations.

c. Enforcement

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that corrective measures shall assure that the cause of the condition adverse to quality is determined and corrective action taken to preclude repetition. Contrary to the above, as of August 2002, the licensee's corrective actions to ensure accurate RWST calculations and use of RWST elevation vs. level indication information was inadequate. Having identified a calculation error in a fundamental calculation, the licensee issued a revised calculation that was still inaccurate and also failed to ensure that the calculations and procedures impacted by the revision were reviewed and updated appropriately. Because of the very low safety significance of this issue and the initiation of CAP028849, this issue is treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy Enforcement Policy (NCV 50-266/02-09-02(DRS); NCV 50-301/02-09-02(DRS)).

**40A6 Management Meetings**

Exit Meeting Summary

The inspectors presented the inspection results to you and other members of your staff at the conclusion of the inspection on August 9, 2002. The inspectors noted that some documents, provided early in the inspection, were identified as proprietary and would be treated appropriately. The licensee acknowledged the information discussed during the exit and agreed that no additional proprietary information was discussed or provided.



## KEY POINTS OF CONTACT

### LICENSEE

L. Armstrong, Design Engineering Manager  
T. Carter, System Engineering Manager  
F. Flentje, Senior Compliance Specialist, Regulatory Affairs  
S. Bach, SI System Engineer  
A. Cayia, KPB Site Director  
B. Day, Performance Assessment Manager  
K. Holt, Supervisor, Electrical Analysis, Site Design  
T. Kendall, Supervisor, Mechanical Analysis, Site Design  
D. Pederson, EDG Systems Engineer  
M. Rosseau, Supervising Engineer, I&C Design  
T. Taylor, Plant Manager  
E. Weinkam III, Director, Regulatory Services, NMC  
W. Zipp, Supervisor, System Engineering

### NRC

P. Krohn, Senior Resident Inspector  
M. Morris, Resident Inspector

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

50-266/02-09-01	NCV	Identified deficiencies in the plant emergency operating procedures
50-266/02-09-02	NCV	Failure to take adequate corrective actions to resolve previously identified problems with engineering calculations concerning refueling water storage tank levels

### Closed

50-266/02-09-01	NCV	Identified deficiencies in the plant emergency operating procedures
50-266/02-09-02	NCV	Failure to take adequate corrective actions to resolve previously identified problems with engineering calculations concerning refueling water storage tank levels

### Discussed

None

## LIST OF ACRONYMS USED

ADAMS	Agency-Wide Document Access and Management System
CAP	Corrective Action Program Document
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
ECCS	Emergency Core Cooling System
EOP	Emergency Operating Procedure
FSAR	Final Safety Analysis Report
LOCA	Loss of Coolant Accident
NCV	Non-Cited Violation
NPSH	Net Positive Suction Head
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records System
RWST	Refueling Water Storage Tank
SDP	Significance Determination Process

## LIST OF DOCUMENTS REVIEWED

The following documents were selected and reviewed by the inspectors during the Point Beach Design and Performance Capability Inspection conducted July 22 through August 9, 2002. The review was conducted to accomplish the objectives and scope of the inspection and to support findings and issues noted. This list may include documents prepared by others for the licensee. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Also inclusion on this list does not imply NRC acceptance of the document, unless specifically stated in the body of the inspection report.

### 1R21 Safety System Design and Performance Capability

#### **1.0 Procedures**

4 AWI-05.06.02	10 CFR 50.59 Applicability Screenings	Revision 1
4 AWI-05.06.03	10 CFR 50.59 Evaluations	Revision 0
4 AWI-01.	Condition Report Process	Revision 7
AOP-10A	Safe Shutdown - Local Control	Revision 33
AOP-10B Unit 1	Safe to Cold Shutdown in Local Control	Revision 3
AOP-9B Unit 2	Component Cooling Water System Malfunction	Revision 17
CL-10B	Service Water Safeguards Lineup	Revision 52
CL-7B	Safety Injection System Checklist Unit 1	Revision 17
EOP-0 Unit 1	Reactor Trip or Safety Injection	Revision 38
EOP-1 Unit 1	Loss of Reactor or Secondary Coolant	Revision 31
EOP-1 Unit 2	Loss of Reactor or Secondary Coolant	Revision 31
EOP-1.1 Unit 1	SI Termination	Revision 29
EOP-1.2 Unit 1	Small Break LOCA Cooldown and Depressurization	Revision 23
EOP-1.3 Unit 1	Transfer to Containment Sump Recirculation	Revision 27
EOP-1.3 Unit 2	Transfer to Containment Sump Recirculation	Revision 27
EOP-1.3 Unit 1	Transfer to Containment Sump Recirculation - Low Head Injection	Revision 28
EOP-1.4 Unit 1	Transfer to Containment Sump Recirculation - High Head Injection	Revision 8
IT-01	Vibration Analysis Annual Trending Charts for U1 and U2 SI Pumps	May 29, 2002

IT-02	High Head Safety Injection Pumps and Valves (Quarterly) Unit 2; performed July 23, 2002	Revision 48
IT-03	Low Head Safety injection Pumps and Valves (Quarterly) Unit 1	Revision 43
IT-60	Containment Isolation Valves	Revision 27
IT-605	Radwaste Component Cooling Water Supply and Return Valves (Refueling) Unit 2	Revision 6
OI 100	Adjusting SI Accumulator Level and Pressure (SI Accumulator Leak Rate Worksheet)	June 6, 2002 (completed for July 12, 2002)
OI 35A	Standby Power Alignment	Revision 8
OI-135A	Fill and Vent Train A RHR System Unit 1	Revision 4
OI-135B	Fill and Vent Train A RHR System Unit 1	Revision 4
OI-70	Service Water System Operation	Revision 39
OP 11A G-02	Emergency Diesel Generator G-02	Revision 4
OP 11B	Emergency Diesel Generator G-03 (G-04)	Revision 7
ORT-68	Component Cooling Water to and from 1P-1A Refueling Shutdown Unit 1	Revision 23
ORT-69	Component Cooling Water to and from 1P-1B Refueling Shutdown Unit 1	Revision 21

## 2.0 Temporary Procedure Changes

2002-0477	Change to Unit 2 EOP-1, Revision 31	August 1, 2002
2002-0476	Change to Unit 1 EOP-1, Revision 31	August 1, 2002
2002-0475	Change to Unit 2 EOP-1.3, Revision 27	August 1, 2002
2002-0474	Change to Unit 1 EOP-1.3, Revision 27	August 1, 2002

## 3.0 Modifications

01-075	Install Oil Sightglass on Component Cooling Pump
84-157	Repair or Replace the "A" CCW Heat Exchanger
84-159	Add a Forth CCW Heat Exchanger

93-87	Spare Parts Equivalency Evaluation Document - Replacement of CC-768	
94-066*A	Soft Face Check Valve Disk (2SI-834D) and Relief Valve Installation	
97-073*A	1/2SI-857A(B) Motor Operator	
97-085*A	SI Valve Upgrade Modification (2SI-857A&B and 2SI-897A&B)	
97-085*B	1(2)SI-897A&B Motor Operators	
M-171	Revise High Head Safety Injection System Design Pressure	
M-171	Raise High Head Safety Injection System Design Pressure to 1745 psig	April 2, 1974
MR 82-28	U1 - Install Manual Operators on Valves SI 897 A/B	November 18, 1982
MR 83-119	U2 - Install Manual Operators on Valves SI 897 A/B	September 13, 1983
MR 85-080	U2 - Modify CC Valve (2-779) to Relieve at 65 psi to maintain containment integrity (min. 60 psi)	August 27, 1986
MR 87-238	High Head SI Pump Throttle Valves	September 8, 1989
MR 92-144*A/B/C	Replace Valves CCW-LW-63 & 64	October 14, 1992
MR 97-073*A	1 / 2 SI Valve Upgrade (SI-857 A(B) Motor Operator)	June 22, 1997
MR 97-073*C	SI Test Line Return Valves 1SI-897A and 1SI-897B Modification - Electrical	August 1, 2000
00-110	G-02 Voltage Regulator Control Switch Rewiring Modification	December 11, 2000

#### 4.0 Design Calculations

2000-0044	Containment Accident Sump Level as a Function of RWST Drain Down	September 14, 2000
95-0149	SI-887 Required Relief Capacity	Revision 0
95-0177	Safety Injection Pump Motor Start During Degraded Voltage Conditions	September 19, 1995

96-0103	Cooling of Recirculation Flow by the RHR Hx Post-LOCA	Revision 0
96-0191	Minimum Allowable IST Acceptance Criteria for SI Pump Performance	Revision 3
96-0229	Minimum Allowable IST Acceptance Criteria for RHR Pump Performance	Revision 1
96-0284	Uncertainty Associated with Instrumentation Used in IT-12 & IT-13 for CCW Pumps	Revision 1
97-0116	Accumulator Fill Line Evaluations	Revision 0
97-0675	CCW: Accident Analysis Assumption May Not Be Supported by Equipment/system Design Capabilities	February 28, 1997
98-0149	RWST Volume/Level Requirement to Qualify as a Boration Path	Revision 0
98-0014	SI-887 Relief Valve Backpressure	May 18, 1998
CN-WEPCO-006	Point Beach ITC and ITD Investigation for WIS24 and WEP25	Revision 0
N-92-045	RWST Elevation vs. Level	Revision 0
N-91-101	SI/CS/RHR Test Line Orifice $\Delta p$ Versus Flow	Revision 1
N-92-045	RWST Elevation vs. Level	Revision 1
N-93-108	Volume in RWST Required for Sump "B" Recirculation	Revision 0
N-94-033	RWST Inventory Evaluation for EOP 1.3 Validation Using the ECCS Flow Model	April 7, 1997
N-88-039	Estimated Pipe Break Flowrates in Non-QA CCW Pipe	Revision 0
N-90-004	SI Flow Rate, 2 Pumps, as a Function of RCS Pressure	Revision 0
N-90-085	Safety Injection Pump Starting Curves	October 31, 1990
N-91-116	High Head Safety Injection System Pump Flow Rates and Suction Pressures as a Function of RCS Pressure	January 6, 1992
N-92-045	RWST Elevation vs. Level	December 15, 1997
N-92-086	ECCS Pump NPSH Calculation	Revision 2

N-92-086	ECCS Pump NPSH Calculation	Revision 3
N-92-100	Batteries D05, D06, D105, D106, D305, 1D-205 and 2D-205 DC System Master Calculation	Revision 3
N-93-002-03-A	Determination of Minimum Sustained Voltage Required on 4160 VAC Safeguards Buses	November 18, 1998
N-93-002-03-B	Effects of CR 94-270 on Calculation N-93-002, Revision 3	November 8, 2000
N-93-002-03-C	OWA 1-99R-006 Removal	November 6, 2000
N-93-049	ECCS Flow Model Validation	August 30, 1993
N-93-053	CCW Relief Valve Setpoint Check for Operations with Surge Tank Vent Valve Shut	September 28, 1993
N-93-058	Battery D105 DC System Sizing, Voltage Drop, and Short Circuit Calculations	Revision 1
N-93-069	1(2)CC-719 (Group 9) MOV Differential Pressure Calculation	February 2, 1994
N-93-70	1(2)CC-738A, 738B MOV Differential Pressure Calculation	Revision 0
N-93-75	1(2)SI-852A, 852B MOV Differential Pressure Calculation	Revision 1
N-94-033	RWST Inventory Evaluation for EOP 1.3 Validation Using ECCS Flow Model	Revision 3
N-94-061	Minimum Usable Level in the RWST with Vortexing	May 17, 1994
PBNP-IC-02-02-A	Refueling Water Storage Tank Level Channel Check Tolerance	Revision 0
PBNP-IC-34	Refueling Water Storage Tank Level Scaling Calculation	Revision 0
RFS-W-1505	Safety Injection based on Test Data	Revision 0
RFS-W-624	SI Accumulator Line L/D	Revision 0
RFS-W-864	Component Cooling Surge Tank Level Setpoints	Revision 0
RFS-W-867	RWST Level Set Points	September 27, 1969

**5.0 Corrective Action Program Documents (CAPs) (Written as a result of inspection issues)**

028837	Train B SI Flow Element Sensing Lines Improperly Sloped	July 24, 2002
028849	Calculation N-92-045, RWST Elevation vs. Level, May Provide Incorrect Results	July 25, 2002
028854	Calculation error regarding RWST vs. CTMT Sump Level	July 25, 2002
028859	Observed Accumulation of Fuel Oil in Drip Tray on G-01 Skid	July 26, 2002
028951	DBD-11 SI & Spray System Discrepancy	August 5, 2002
028980	Calc 95-0149 Contains Administrative Errors	August 6, 2002
028993	Conflicting Calculation Results	August 8, 2002
028804	Line Class on P&ID 110E017 Sheet 1 Appears to Be Incorrect	
028820	DBD #11 Does Not Provide a Basis Regarding Maximum Leakage for LHSI Operability	
028827	SI Pump Seal Leak-off	
028836	Typographical Error Regarding L/D Value for Accumulator Piping in DBD #11	
028837	Train B Flow Element Sensing Lines Improperly Sloped	
028851	Documentation of Piping Between CCW Hx Isolation Valves	
028893	Two Cases Used in EOPs Omitted When Revising ECCS NPSH Calculation	
028894	Observations on EOP 1.3	
028910	SI Alignments in EOP 1.3 Could Result in Excessive Flowrates	
028911	Potential for Draining the RWST to Containment During a DBA LOCA	
028945	FSAR 9.1 May Need Additional Changes to Reflect CCW Closed Loop Inside Containment	
028946	SSDI Question #43, EOP 1.3 Manual CC Valves	



028992	EOP 1.4 Step 19d - Inadequate Basis for Setpoint
028994	Calc of Containment Spray Duration Does Not Consider No Auto Initiation of Containment Spray
028998	EOP Issues Identified during 2002 SSDI

**6.0 Corrective Action Program Documents (CAPs) (Written prior to the start of the inspection)**

97-0675	CCW System Design for Achieving Safe Shutdown	March 3, 1997
98-2572	Potential to Overstress Piping and Supports During Post-LOCA Recirculation	
001122	Instrument Loop and Meter Uncertainties for RWST Level Indication	12/19/2001
001514	Full Travel of SI Valve in Question	
002262	Concerns about Gas Binding of Si Pumps and System Leakage	February 21, 2002
002292	2P-15B SI Pump Failed IT-2 Inputs	
002509	G-01 Pole Field Winding Partial Shorting	March 12, 2002
002574	G-01 Generator Condition Monitoring Plan	March 15, 2002
002914	PBNP Continues to Lift CC and CCW System Relief Valves During Routine Evolutions	
003141	Foreign Material in Safety Injection Piping	May 1, 2002
003187	Calc 97-0118 Uses NPL 97-0278 Decay Heat	
013257	SI-00869B Replacement Drawing Not Updated	December 13, 2000
013257	SO-00869B Replacement Concern	
013639	Calculations Not Updated	04/25/2002
014033	CC System Maintenance Rule Unavailability Time Calculation Errors	May 22, 2001
028468	Failure to Supersede All Appropriate Calculations upon Issue of a Revision	June 13, 2002

## 7.0 Engineering Drawings

2E-2002	Byron Jackson Co. 4x6x8 8STG-DVMX	
BECH E-1	Single Line Station Diagrams	Revision 16
EMD 8413730 SH 20	Relay and Metering Diagram Diesel Generator G-02	Revision 9
EMD 8413730 SH 21	Diesel Generator G-02 DC Control	Revision 7
EMD 8413730 SH 22	Diesel Generator G-02 Start No. 1 Circuitry	Revision 11
EMD 8413730 SH 23	Diesel Generator G-02 Start No. 2 Circuitry	Revision 10
PB 01 MCCK000001	P&ID Auxiliary Coolant System Point Beach N.P. Unit 1	Revision 37
PB 01 MCCK000004	P&ID Auxiliary Coolant System Point Beach N.P. Unit 1	Revision 21
PB 01 MESK000002	P&ID Safety Injection System Point Beach N.P. Unit 1	Revision 50
PB 01 MSFK000001	P&ID Auxiliary Coolant System Point Beach N.P. Unit 1	Revision 41
PB 01 MSFK000002	P&ID Auxiliary Coolant System Point Beach N.P. Unit 1	Revision 57
PB 01 MSIG183001	Containment Spray and Safety Injection Piping Isometric Diagram Point Beach N.P. Unit 1	Revision 7
PB 01 MSIG246001	1T13 RWST Assembly & Details	Revision 5
PB 01 MSIK000001	P&ID Safety Injection System Point Beach N.P. Unit 1	Revision 55
PB 01 MSIL183001	SIS from vlv 841 to pri. coolant cold leg, 6"-SI- 2501R-1,2,4 10"-SI-2501R-1,2 10"-RC-2501R- 5,8	Revision 9
PB 01 MSIL183002	Safety Injection V-827A & B to S.I. Pump P-15A & B, P-14A & B & V-856A & B SI-151R Point Beach N.P. Unit 1	Revision 12
PB 01 MSIL183005	Safety Injection from Pump P-15A & B to ctmt. penet. P-27 & P-13 4" & 6" SI-1501R-1, -2, & -3	Revision 9

PB 01 MSIL183040	Piping Isometric 2" Safety Injection Piping 1-P15A&B SI Pumps to RWST Point Beach N.P. Unit 1	Revision 0
PB 01 MSIL183042	Piping Isometric 2" Safety Injection Piping in Containment Sheet 1 of 3 Point Beach N.P. Unit 1	Revision 0
PB 01 MSIL183043	Piping Isometric 2" Safety Injection Piping in Containment Sheet 2 of 3 Point Beach N.P. Unit 1	Revision 0
PB 01 MSIL183045	SIS from Penetration P-22 to Reactor Vessel 1-R1 SI-601R-2, SI-2501R-5, RC-2501R-5	Revision 8
PB 01 MSIL183048	Hot Leg Injection Line from Penetration P27 to Reactor Coolant System 4-SI-1501R-2	Revision 6
PB 01 MSIL183049	Cold Leg Injection Line from Penetration P13 to Reactor Coolant System 4-SI-1501R-3	Revision 6
PB 02 MSFK000001	P&ID Auxiliary Coolant System Point Beach N.P. Unit 2	Revision 49
PB 02 MSFK000003	P&ID Auxiliary Coolant System Point Beach N.P. Unit 2	Revision 41
PB 02 MSFK000004	P&ID Auxiliary Coolant System Point Beach N.P. Unit 2	Revision 17
PB 02 MSFL246001	RWST Assembly & Details #24102 Point Beach N.P. Unit 2	Revision 4
PB 02 MSIK000001	P&ID Safety Injection System Point Beach N.P. Unit 2	Revision 49
PB 02 MSIL000001	P&ID Safety Injection System Point Beach N.P. Unit 2	Revision 47
PB 02 MSIL133002	Safety Injection Pump Discharge to Injection SI-1501R-1 and SI-1501R-3 Point Beach N.P. Unit 2	Revision 10
PB 02 MSIL133003	Safety Injection Pump Discharge to Injection SI-1501R-1 and SI-1501R-2 P-220 Point Beach N.P. Unit 2	Revision 10
PB 02 MSIL183004	Piping Isometric SIS from 2-T34A & B to Primary Coolant Cold Leg Point Beach N.P. Unit 2	Revision 4
PB 02 MSIL183043	Suction from RWST to SI, CS, RHR Pumps Point Beach N.P. Unit 2	Revision 14

PB 02 MSIL183053	Piping Isometric 2" Safety Injection Piping 2T-38 to Spray Pumps Point Beach N.P. Unit 2	Revision 0
PB 02 MSIL183054	Piping Isometric 2" Safety Injection Piping in Containment Sheet 1 Point Beach N.P. Unit 2	Revision 0
PB 02 MSIL183055	Piping Isometric 2" Safety Injection Piping in Containment Sheet 2 Point Beach N.P. Unit 2	Revision 1
PB 02 MSIL183056	Piping Isometric 2" Safety Injection Piping in Containment PBA-2124 Sheet 3 Point Beach N.P. Unit 2	Revision 1
PB 02 MSIL183057	S.I.S. Penetration P-22 to Reactor 2-R1, 6"-SI-601R-2, 6"-SI-2501R-5 & 6"-RC-2501R-5 Point Beach N.P. Unit 2	Revision 3
PB 02 MSIL183058	Reactor Vessel Injection Line from MV-852A to Reactor Vessel 2-R1 6-SI-2501R, 6-RC-2501R-5 P-218 Sh. 1 Point Beach N.P. Unit 2	Revision 6
PB 31 MCWG074001	Shaft Seal Type-1, 3.000 D. Point Beach N.P. Units 1 & 2	Revision 2
PB 31 MSIL269006	Gate Valve 10" 1500# W/SMB-2 Operator Point Beach N.P. Units 1 & 2	Revision 6
PB 31 MSIL269017	Swing Check Valve 8" 1600# Point Beach N.P.	Revision 5
WEST 499B466 SH 317	Elementary Wiring Diagram Component Cooling Pump	Revision 13
WEST 499B466 SH 724A	Elementary Wiring Diagram 1P15A Safety Injection Pump Loop "A" Injection 1SI-878D	Revision 7

## 8.0 Surveillances

ORT 3A	Safety Injection Actuation With Loss of Engineered Safeguards AC (Train A) Unit 1	October 17, 2000
ORT 3A	Safety Injection Actuation With Loss of Engineered Safeguards AC (Train A) Unit 1	April 9, 2001
TS 82	Emergency Diesel Generator G02 Monthly	March 7, 2002
TS 82	Emergency Diesel Generator G02 Monthly	May 28, 2002
TS 82	Emergency Diesel Generator G02 Monthly	June 1, 2002
TS 82	Emergency Diesel Generator G02 Monthly	April 5, 2002

TS 82	Emergency Diesel Generator G02 Monthly	July 13, 2002
TS 82	Emergency Diesel Generator G02 Monthly	June 17, 2002
TS 82	Emergency Diesel Generator G02 Monthly	June 8, 2002
TS 82	Emergency Diesel Generator G02 Monthly	May 24, 2002
TS 82	Emergency Diesel Generator G02 Monthly	May 29, 2002
TS 82	Emergency Diesel Generator G02 Monthly	June 30, 2002
PBTP-110	EDG G-02 Test	March 14, 2002

### 9.0 Miscellaneous Documents and Records

	List of HHSI Pump Mechanical Seal Failures	August 7, 2002
54-E-70491-B	Induction Motor Data Sheet (CC DBD Reference 10.6.25)	November 20, 1968
92-002-00	Licensing Event Report - Radioactive Waste Disposal System Component Cooling Water Isolation Valves Outside Design Basis	Revision 0
Action Request Form	Basis for VNPAB System's Non-Safety Related Scope Questioned	August 8, 2002
Bechtel Power Corporation letter BLP-89-051	Transmittal of Unit 2 CCW System Performance Evaluation Report for Point Beach Nuclear Plant	April 21, 1989
BG-EOP-1.3	EOP Background Document - Transfer to Containment Sump Recirculation	Revision 22
BLP-89-051	Bechtel Letter - Transmittal of Unit 2 CCW System Performance Evaluation Report	April 21, 1989
CC Valve Test Table	Inservice Testing Program CC Valve Test Table	Revision 9
CIX-001515	Vendor Manual - Component Cooling Water Heat Exchangers	N/A
Curve No. 46578	Component Cooling Pump Curve	December 21, 1968
Curve No. 46418	Component Cooling Pump Curve	September 26, 1968
Curve No. 46417	Component Cooling Pump Curve	September 26, 1968
Curve No. 46579	Component Cooling Pump Curve	December 21, 1968

D02-2588	PBNP G-02 Diesel Generator Vibration Investigation	July 8, 2002
DBD-02	Component Cooling Water System Design Basis Document	Revision 1
DBD-10	Residual Heat Removal System	Revision 1
DBD-11	Safety Injection and Containment Spray System Design Basis Document	Revision 0
DCN 2002-0480	Incorporate MR 99-040	03/19/2002
DG-M17	Wisconsin Electric Nuclear Power Department Design and Installation Guidelines, Guideline for the Preparation of Motor-Operated Valve (MOV) Differential Pressure Calculations	Rev 0, January 11, 1994
Engineering Evaluation No. 2001-0036	CC Hx Testing and Acceptance Criteria	Revision 0
EOPSTPT L.15	EOP Setpoint Basis Document L.15	Revision 0
EOPSTPT L.13	EOP Setpoint Basis Document L.13	Revision 0
EOPSTPT W.2	EOP Setpoint Basis Document W.2	Revision 0
EOPSTPT L.3	EOP Setpoint Basis Document L.3	Revision 1
EOPSTPT W.1	EOP Setpoint Basis Document W.1	Revision 0
EWR025669	Engineering Work Request, U2, Increase the Stroke Time of LW 63 and 64	June 25, 2002
Maintenance E-M18	SI Pump Motor Phase Resistance Checks	Data to August 5, 2002
Memorandum-John Crane Inc.	Cooling Requirement for Pump Shaft Seals Point Beach Nuclear Plant	April 19, 1990
MOV stroke times	Sample Stroke Time Data for SI and CC MOVs, Trended	November 2000 to June 2002
N/A	Atlas Letter - Component Cooling Heat Exchangers Vibration Analysis	January 9, 1989
NPL 97-0351	WE Letter - Technical Specification Change Request 192	June 13, 1997
OBD-11	Operability Determination, Gas Binding of SI Pumps	Revisions 3, 4, and 5
OBD-23	Establish Periodic Venting, Unit 2	April 10, 2002

Operability Determination OPR-000024	RWST Diverted Inventory to Containment Sump Affects Containment Spray Duration	Revision 0
Operability Determination OPR-000005	2P-15B SI Pump Failed to Meet Differential Pressure Acceptance Criteria	Revision 0
OPR000008	Operability Determination for CAP002509	March 13, 2002
OPR000024	Operability Recommendation for CAP 028911 on Potential for Draining the Rrst to Containment During DBA LOCA	August 1, 2002
OPR 000024	Potential to Drain the RWST to Containment During a DBA LOCA	08/01/2002
OTH004007	Perform a Common Mode Failure Analysis for G-02, G-03 and G-04 Based on the Degraded Rotor Poles Found During the G-01 Inspection and Rotor Pole Drop Test.	March 13, 2002
PBWC-WMP-1182	Westinghouse Letter - Component Cooling Water Systems	December 21, 1971
PCR004492	Procedure Change Request, U2, Revise procedures for monthly venting of SI lines and Track Accumulator Refills/leak Rate	May 6, 2002
Project # 1255 Appendix 2 Test Data	Test Data related to Crain Packing Company Pump Seals	N/A
SCR 2002-0295	10 CFR 50.59/72.48 Screening - Changes to EOP-1 and EOP-1.3 to Eliminate the Requirement for the SI Core Deluge Flowpath	August 1, 2002
SE 98-17	10 CFR 50.59/72.48 Screening and Safety Evaluation - Convert 2SI-857A(B) to MOVs and 2SI-897A(B) to Fail Open	November 30, 1998
SE 97-121	RWST Level Changes	07/02/1997
SER 93-071	10 CFR 50.59 Report - Change to CCW System Configuration for Normal Operation	August 31, 1993
SI Valve Test Table	Inservice Testing Program SI Valve Test Table	Revision 9
T2.3.4	Component Instruction Manual Transmittal Memo - HX-12A-D Component Cooling Water Heat Exchangers	Revision 3

Vendor BYRONJ, Control# 00264	SI Pump Vendor Manual	Through SPEED 2001-17
Vendor Manual	Installation, Operation, and Maintenance CC Heat Exchangers - Atlas Industrial Manufacturing Co..	
VPNPD-96-011	Response to Generic Letter 95-07, Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves	February 9, 1996
WEP-97-500	Large Break LOCA Safety Assessment for Increased Safety Injection Delay Times	January 10, 1997
WEP-98-017 NSD-SAE-ESI-98- 103	Westinghouse Letter - Containment Pressure and Temperature Increase During Recirculation Due to the Loss of RHR Heat Exchanger Cooling	March 5, 1998
WO 9938421	Perform ICP 13.7B-2 On Emergency Diesel G-04 Instrumentation	July 12, 2002



## Initial Document Request

### I. Information Requested Expeditiously

The following information is requested to be provided as soon as possible, but no later than May 20, 2002.

One copy of the current plant organization charts.

The items requested below apply **only** to the selected systems:

1. One copy of the system descriptions, training manuals, and design basis documents
2. One copy of the normal and abnormal operating procedures
3. Two half-size copies of the piping and instrument drawings (P&IDs)
6. Two half-size copies of the single-line and key electrical diagrams
7. Name and phone numbers of the technical contact, a regulatory contact, and the design and system engineer(s)
8. List of analyses that either support or take credit for operation of the system(s). For each analysis, besides the number and title, include the purpose of the calculation, the date, and a technical contact. Clarify any abbreviations or acronyms and give word titles for any numbers (e.g., "residual heat removal inner containment isolation valve" rather than "RH-2301-45B").

Specifically identify (by number) the following calculations. If a calculation cannot be identified for a particular bullet, provide an explanation of why there are no calculations for that area:

- Breaker and fuse coordination calculations
- Diesel loading calculations
- Room temperature environmental qualification calculations for major equipment
- Relay setting calculations
- Setpoint calculations for all Technical Specification or Emergency Operation Procedure equipment
- Time delay calculations (for any component incorporating time delay features)
- Undervoltage and degraded voltage calculations
- Voltage drop calculations for all major electrical components (motors, MOVs)
- Check valve leakage criteria calculations

- Design basis (flow rates, levels, pressures, temperatures) confirmation calculations (including NSSS calculations)
  - Heat exchanger calculations
  - NPSH and total dynamic head calculations
  - Operability determination support calculations
  - Pressure transient/ water hammer evaluations
  - Pump minimum recirculation flow calculations
  - Tank over-pressurization or relief valve sizing calculations
9. List of all major modifications made to the selected systems since pre-operational testing. Major changes are those that significantly affected the way the system operated, for example, replacement of major components. Please include the number and title, the modification purpose, the date, the status (whether the calculation is active, canceled, superseded or under revision) and a technical contact. Spell out abbreviations, or acronyms and give word titles for any numbers. Note if any of the modifications required prior NRC approval.
10. List of all major setpoint changes made to the systems since pre-operational testing, unless included as part of Item 9. Major changes are those that significantly affected the way the system operated. Please include the number and title, the component affected, the purpose, the date, and a technical contact. Spell out abbreviations, or acronyms and give word titles for any numbers.
11. List of condition reports (corrective action documents) that are in one of the following categories. For each condition report, besides the number and title, clearly designate the status (open/ closed), the importance ranking, the date initiated, the date closed (if applicable), the status of corrective actions, and a technical contact.
- Any open condition report initiated more than 2 years prior to the inspection
  - Any condition report (open or closed) initiated in the last 2 years and requiring an apparent or root cause analysis (include analysis)
  - Any condition report (open or closed) initiated in the last 2 years and requiring an operability determination (include determination)
  - Any condition report (open or closed) initiated in the last 2 years and relating to problems with quality of engineering

## II. Information Requested to be Available on First Day of Inspection

We request that the following information be available to the team once it arrives onsite. Some documents, such as the Updated Final Safety Analysis Report (UFSAR) or the Technical Specification (TS), do not need to be solely available to the team (i.e., they can be located in a reference library) as long as the team has ready access to them.

1. Copies of the calculations indicated by subject area in item I.8, excluding data files. Please review the calculations and also provide copies of referenced material (such as drawings, engineering requests, vendor letters.)
2. Copies of all MAJOR design changes, modifications and setpoint changes as indicated in items I.9 & I.10. For each modification, as a minimum provide the purpose, the 10 CFR 50.59 evaluation or screening, and the completed post-modification test.
3. Copies of any open temporary modifications.
4. Copies of all condition reports (corrective action documents) indicated in item I.11, including any associated root cause analyses or operability determinations.
5. Copies of the surveillances for ALL Technical Specification equipment completed during the last two years.
6. List of all maintenance, surveillance, and annunciator response procedures related to the systems. Include name as well as number. For the surveillance procedures, provide a cross-reference which shows how each technical specification requirement is being met.
7. One copy of each major equipment drawing (valves, pumps, tanks, strainers), including pump head curves (1/2 size)
8. Copies of isometric drawings for major flow paths (1/2 size)
9. Copies of elementary diagrams (1/2 size)
10. Copies of wiring diagrams (1/2 size)
11. Copies of loop drawings (1/2 size)
12. Copies of P&IDs referred to on the system P&ID (1/2 size)
13. Copies of instrumentation and control logic drawings (1/2 size)
14. A copy of any self-assessments and associated corrective action documents *generated in preparation for the inspection*

15. Reference materials:

- Equipment qualification binders
- General set of plant drawings
- IPE/PRA report
- Pre-operational tests, including documents showing resolution of deficiencies
- Procurement documents for major components in each system (verify retrievable)
- Relevant operating experience information (such as vendor letters or utility experience)
- Standards used in system design (such as IEEE, ASME, TEMA)
- System procedures
- Technical Specifications
- Technical Data Book
- Updated Final Safety Analysis Report
- Vendor manuals

LICENSEE'S LIST OF DOCUMENTS PROVIDED

**DOCUMENT REQUESTS**

**2002 SSDI INSPECTION**

<b>Document No.</b>	<b>Title</b>	<b>Rev.</b>	<b>Rev Date</b>
CALC 052N-006 (Bechtel)	Unit 2 Component Cooling Flow Network	--	Undated
CALC 2000-0044	Containment Accident Sump Level as a Function of RWST Draindown	1	08/02/02
CALC 95-0149	SI-887 Required Relief Capacity		
CALC 96-0103	Cooling of Recirculation flow by the RHR Heat Exchanger Post -LOCA		
CALC 96-0165	Delay time for ESF Equipment Actuation for Fuel Upgrade Accident Analysis		
CALC 96-0191	IST Acceptance Criteria for SI Pump Performance		
CALC 96-0284	Uncertainty Associated with Instrumentation used in IT-12 and IT-13 for CCW Pumps		
CALC 98-0014	98-0014 SI-887 Relief Valve Backpressure		
CALC ATD0296	Evaluation of Closing the Vent on the CCW Surge tank		
CALC E-09334-369-DG.1	Diesel Transient Loading		
CALC ESI 04 LEPDG	Emergency Diesel Generators	0	02/22/02
CALC ESI 04 LPCCW	Component Cooling Water System	0	03/13/02
CALC ESI 04 LPECC	Emergency Core Cooling	0	03/13/02
CALC M-09334-298-ECCS PT 1			
CALC N 94-033	RWST Inventory Evaluation for EOP 1.3 Validation Using the ECCS Flow Model	3	04/04/97
CALC N-86-002			
CALC N-87-005	Appendix R: Cold Shutdown Heat Removal Addendum - Comparison of Old and New CCW Heat Exchangers		
CALC N-87-025	RWST Level Calculation		
CALC N-88-001	CCW Heat Exchanger Performance Data Evaluation		
CALC N-88-039	Estimated Pipe Beak Evaluation in Non-QA CCW Pipe		
CALC N-88-049	CCW Heat Exchanger Overall Heat Transfer with SEACURE Tubing		
CALC N-90-088	SI Pump Protective Relay Settings		
CALC N-91-014	EDG Kilowatt Meter Accuracy		
CALC N-91-016	Diesel Generator Loading Analysis		
CALC N-93-002	Determination of Minimum Sustained Voltage Required on 4160V Safeguard Busses		
CALC N-93-053	CCW Relief Valve Setpoint Check for Operation with Surge Tank Vent Valve Shut		
CALC N-93-069	CC-719 MOV Differential Pressure Calculation		
CALC N-93-070	CC-754A/B (CC from RHR HX MOVs) MOV Differential Pressure Calculation		
CALC N-93-098	Degraded Grid Voltage Relay Settings		
CALC N-93-109	CCW Pump Flow During SI with one CCW Pump and HX, and one RHR HX		
CALC N-94-015	Determination of Fluid Level for Onset of Vortexing in Condensate Storage Tank	0	02/10/94
CALC N-94-061	Minimum Usable Level in the RWST with Vortexing		
CALC N-95-0149	Supplement to Calc	--	08/02/02
CALC P 1990-0017	MOV Undervoltage Stem Thrust and Torque	14	08/29/01

LICENSEE'S LIST OF DOCUMENTS PROVIDED

CALC PBNP 1C02	RWST Level Instrument Uncertainty/Setpoint Calculation		
CALC PBNP 1C27	Safety Injection Accumulator Level Instrument Uncertainty/Setpoint Calculation		
CALC PBNP 1C28	Safety Injection Accumulator Level Scaling Calculation		
CALC PBNP 1C34	RWST Level Scaling Calculation		
CALC RFS -W-107	ACS Design Parameters (Pre-construction; normal cool down sizing)		
CALC RFS-W-284	ACS Revised Cooldown (Pre-construction; normal cool down sizing)		
CALC RFS-W-864	Component Cooling Surge Tank Level Setpoints		
CALC RFS-W-867	RWST Setpoint design information (for SIS DBD)		
CALC SE/FSE-C-WEP-0024	Point Beach Appendix R and Normal Cooldown for Uprating		
CAP 001559	Susceptible to HELB event in the auxiliary building: the cited Operability Determination		
/CR98-0164	credits Actuation of fire suppression sprays to limit temperature rise and maintain CC, SI		
	and charging pumps Operable. S & L Calculation M-09344-357-HE.1 evaluated		
	modifications to alleviate conditions.		
CAP 001928 (OPR 8)	EDG G-04 Fails During TS-84 Monthly Testing	--	
CAP 002262	Concerns About Gas Binding on SI Pumps and System Leakage	--	
CAP 002423	Safety Injection Maintenance Rule Status Change (provided to 2 different inspectors)	--	
CAP 002509	G-01 Pole Field Winding Partial Shorting	--	
CAP 002694	Operability Evaluation of G-01/G-02 Relays That Lack Full Seismic Qualifications	--	
CAP 002914	PBNP Continued to Life CC and CCW System Relief Valves During Routine Evolutions	--	
CAP 002925	U2 RWST Sample Difficult to Obtain and Sample Valve Not Functioning Properly	--	
CAP 002946	Purchase Order to Procure Rebuilt Generator for G-02 Lacks Technical Requirements	--	
CAP 003141	Foreign Material in Safety Injection Piping ([provided to 2 different inspectors)	--	
CAP 003168	Unidentified Wires in C01	--	
CAP 003187	Calc 97-0118 Uses NPL 97-0278 Decay Heat Inputs	--	
CAP 003258	Valve Location Causes Safety Violation During Performance of OI-100	--	
CAP 003283	TS 3.4.14.1 RCS PIV Test line Limitations (provided to 2 different inspectors)	--	
CAP 013257	SI-00869B Replacement Concern	--	C
CAP 014033	Component Cooling System Maintenance Rule Unavailability Time Calculation Errors	--	
CAP 028360	G-02 Failure During Performance of TS-82 Extended Run	--	
CAP 028468	Failure to Supersede All Appropriate Calculations Upon Issue of a Revision	--	06/13/02
CAP 028804	Line Class on P&ID 110E017 Sheet Appears to be Incorrect	--	07/22/02
CAP 028820	DBD #11 Does Not Provide a Basis Regarding Max Leakage for LHSI Operability	--	07/24/02
CAP 028827	SI Pump Seal Leak-Off	--	07/24/02
CAP 028836	Typographical Error Regarding Letdown Valve for Accumulator Piping in DBD #11	--	07/24/02
CAP 028837	Train "B" SI Flow Element Sensing Lines Improperly Sloped	--	07/24/02
CAP 028838	CC HX Mounting Bolts May Not Permit Thermal Growth	--	07/24/02
CAP 028849	Calculation N-92-045, RWST Elevation vs. Level May Provide Incorrect Results	--	07/25/02
CAP 028854	Calculation Error Regarding RWST vs. Containment Sump Level	--	07/25/02
CAP 028855	Lack of Clear, Coherent and Validated QA Basis for CC System Capability	--	07/25/02

LICENSEE'S LIST OF DOCUMENTS PROVIDED

CAP 028859	Observed Accumulation of Fuel Oil in Drip Tray on G-01 Skid	--	07/26/02
CAP 028882	Generator Vibration Measured Above 0.5 ips Steady-State During TS-82	--	07/30/02
CAP 028893	Two Cases Used in EOPs Omitted When Revising ECCS NPSH Calculation	--	07/30/02
CAP 028894	Observations on EOP-1.3	--	07/30/02
CAP 028910	SI Alignments in EOP-1.3 Could Result in Excessive Flow Rates	--	07/31/02
CAP 028911	Potential for Draining the RWST to Containment During a DBA Local	--	07/31/02
CAP 028945	FSAR 9.1 May Need Additional Changes to Reflect CCW Closed Loop Inside Containment	--	08/05/02
CAP 028946	SSDI Question #43, EOP-1.3 Manual CC Valves	--	08/05/02
CAP 028951	DBD-11 SI & Spray System Discrepancy	--	08/05/02
CAP 028980	Calc 95-0149 Contains Administrative Errors		08/06/02
CAP 028985	EOP Setpoint L.15 Does Not Reference Calculation 2002-007	--	08/07/02
CAP 028992	EOP 1.4 Step 19d, Inadequate Basis for the 130 psig Setpoint	--	08/08/02
CAP 028993	Conflicting Calculation Results	--	08/08/02
CAP 028994	Calc of Containment Spray Duration Does Not Consider NO Auto Initiation of CS	--	08/08/02
CAP 028998	EOP Issues Identified During 2002 SSDI	--	08/08/02
CAP OPR 5	2P15 B Safety Injection Pump Failed Inservice Testing	--	
CAP OPR 24	OD for CAP 028911; Potential for Draining RWST to Containment During DBA LOCA	0	08/02/02
DWG BECH E-5 Sh 2A&B, 9	480 V MCC 1B32, 1B42, 1B40 & 2B40 One Line Diagrams	--	--
DWG BECH E-2005 Sh 2A&B	480 V MCC 2B32 & 2B42 One Line Diagrams	--	---
DWG Graver L-24015	1T13 RWST Assembly and Details	5	
DWG Graver L-24016-2	1&2T13 Details of Fittings, RWST	2	
DWG Graver L-24102	2T13 RWST Assembly and Details	4	
DWG WEST 110E017 Sh 1-3	Unit 1 Safety Injection System P&IDs	--	--
DWG WEST 110E018 Sh 1-4	Unit 1 Auxiliary Coolant System P&IDs	--	--
DWG WEST 110E029 Sh 1-3	Unit 2 Auxiliary Coolant System P&IDs	--	--
DWG WEST 110E035 Sh 1-3	Unit 2 Safety Injection System P&IDs	--	--
DWG WEST 499B366 Sh 734A	1P10A RHR Pump Suction from Containment Sump "B" Motor 1SI-851A-M		
DWG WEST 499B466 Sh 734C	2P10A RHR Pump Suction from Containment Sump B Motor 2SI-851A-M		
DWG WEST 499B466 Sh 734D	2P10B RHR Pump Suction from Containment Sump "B" Motor 2SI-851B-M		
DWG WEST 499B466 Sh 770A	SI Test Line Return 1SI-897A		
DWG WEST 499B466 Sh 770C	SI Test Line Return 2SI-897A		
DWG WEST 499B466 Sh 770D	SI Test Line Return Second Off Isolation 2SI-897B		
DWG WEST 499B466 Sh 834	Sheets 734A-D, Interlocks for Containment Sump Supply to RHR Pump Suctions	--	--
DWG WEST 499B466 Sh. 734B	1P10B RHR Pump Suction from Containment Sump "B" 1SI-851B		
DWG WEST 499B466 Sh. 770B	SI Test Line Return Second-Off Isolation 1SI-897B		
DWG WEST 541F152 Sh 1-5	4160 B One Line Diagrams	--	--
DWG WEST 541F153 Sh 1-2	480 V One Line Diagrams	--	--
DWG WEST 685J114	CCW Surge Tank	0	--

LICENSEE'S LIST OF DOCUMENTS PROVIDED

FORM PBF 2014	Generator Start and Load Reliability Information Sheet (blank)	3	06/12/00
FORM PBF 2033	Daily Logsheet (blank)	49	
FORM PBF 2067a	G-01 Emergency Diesel Generator Logsheet (blank)	17	11/08/01
FORM PBF-2032	Daily Logsheet (blank)	60	
FORM PBF-2067b	G02 Emergency Diesel Generator Logsheet (blank)	19	02/14/02
FORM PBF-2067c	G-03 Emergency Diesel Generator Logsheet (blank)	12	01/08/02
FORM PBF-6076d	G-04 Emergency Diesel Generator Logsheet (blank)	11	01/08/02
FORM PBF-9114	Scaffold Final Inspection Form		
FSAR	Diesel Generator (DG) System		06/01
FSAR	Component Cooling Water (cc)		06/02
FSAR 6.2	Safety Injection System		06/01
FSAR Change Request 02-015	Removal of outdated information on SI Pump Time Delays		07/23/02
LETTER EE 2001-0036	Engineering Evaluation		
LETTER PBWC-WMP-1182	Component Cooling Water Systems	--	12/21/71
LETTER WEP 97-522	Westinghouse Letter and SER, Containment Analysis Assuming Reduced Fan Cooler Performance	--	05/29/97
LETTER WEP 98-017	Containment Pressure & Temperature Increase During Recirculation Due to Loss of RHR Heat Exchanger Cooling	--	03/0598
MR 01-075	Install Oil Sightglass on Component Cooling Pump P-11A, Unit 1	--	--
MR 02-002	Refurbishment of G-02 Emergency Diesel Generator	--	--
MR 82-028	Recirc Valve 897A&B Manual Gag	--	--
MR 83-119	Recirc Valve 897A&B Manual Gag	--	--
MR 84-019	Alternate dc Control Power to EDGs (Appendix R)	--	--
MR 84-157/158/159-01	Component Cooling Water HX Replacements	--	--
MR 85-080	Change CCW Surge Tank Relief Valve Setpoint to 65 psi	--	--
MR 86-135	Replace SI Accumulator Level Transmitters	--	--
MR 87-233	HHSI Pump Throttle Valves	--	--
MR 91-011/012	TCV-130 Modification	--	--
MR 92-144	Replace Valves LE-63 & 64, Provide Trip Signals	--	--
MR 94-066*A	Soft Face Check Valve Disk & Relief Valve Installation	--	--
MR 95-029	Replace SI Accumulator Level Transmitters U2	--	--
MR 96-059	Protection of MCB Conductors in G-01/G-02 EDG Control Circuits	--	--
MR 96-071*B	Replace G-02 Governor	--	--
MR 97-073*A*C	SI Valve Upgrade (1SI-857A&B and 1SI-897A&B)	--	--
MR 97-085*A*B	SI Valve Upgrade (2SI-857A&B and 2SI-897A&B)	--	--
MR 97-098	Defect "A" Train 480 V Undervoltage Stripping when Powered From EDG	--	--
MR E-147	SI Signal Sequence after Reset	--	--
MR M-171	Safety Injection System Upgrade, SI-887	--	--
PROC 0-SOP-G01-001-	Maintenance Operation for EDG G-01	0	10/22/01



LICENSEE'S LIST OF DOCUMENTS PROVIDED

PROC 0-SOP-G02-001	Maintenance Operation for EDG G-02	1	08/27/01
PROC 0-SOP-G03-001	Maintenance Operation for EDG G-03	2	11/12/01
PROC 0-SOP-G04-001	Maintenance Operation for EDG G-04	3	11/15/01
PROC 1-CL-CC-001	Component Cooling Unit 1	8	04/04/02
PROC 1-SOP-CC-001	Component Cooling System	7	07/23/01
PROC 1-SOP-CC-002	Component Cooling System Drain and Refill	2	04/19/01
PROC AOP 0.0	Vital DC System Malfunction	20	06/03/02
PROC AOP 0.1	Declining Frequency on 345 KV Distribution System	6	06/03/02
PROC AOP 10A	Alternate Safe Shutdown to Hot Standby	33	05/16/02
PROC AOP 10B	Alternate Safe Shutdown to Cold Shutdown	3	05/03/01
PROC AOP 18A Unit 1	Train "A" Equipment Operation	6	08/30/01
PROC AOP 18A Unit 2	Train "A" Equipment Operations	6	08/30/01
PROC AOP 18B unit 1	Train "B" Equipment Operations	5	10/15/01
PROC AOP 18B Unit 2	Train "B" Equipment Operations	4	08/30/01
PROC AOP 19A Unit 1	Train "A" Safeguards Bus Restoration	5	08/20/01
PROC AOP 19A Unit 2	Train "A" Safeguards Bus Restoration	6	08/20/01
PROC AOP 19B Unit 1	Train "B" Safeguards Bus Restoration	4	08/20/01
PROC AOP 19B Unit 2	Train "B" Safeguards Bus Restoration	4	08/20/01
PROC AOP 22 Unit 1	EDG Load Management	1	11/29/99
PROC AOP 22 Unit 2	EDG Load Management	2	05/08/00
PROC AOP 9B Unit 1	Component Cooling System Malfunction	16	05/10/01
PROC ARB 1C03 1D 3-7	Motor Breaker Trip	8	08/10/00
PROC ARP 1C03 1D 1-4	1P-1A RCP Cooling Water Flow Low Unit1	1	08/10/00
PROC ARP 1C03 1D 1-5	1P-1B RCP Cooling Water Flow Low Unit 1	1	08/10/00
PROC ARP 1C03 1D 1-6	Component Cooling HX Outlet Temp High Unit 1	1	08/10/00
PROC ARP 1C03 1D 2-5	1P-15A or B SI Pumps Cooling Water Flow Low Unit 1	1	08/14/00
PROC ARP 1C03 1D 2-6	Component Cooling Pump Discharge Pressure Low Unit 1	1	08/10/00
PROC ARP 1C03 1D 3-5	1P-14A or B cont Spray Pumps CC Water Flow Low Unit 1	1	08/10/00
PROC ARP 1C03 1D 3-6	1T-12CC Surge Tank Level High or Low Unit 1	2	04/23/01
PROC ARP 1C03-1D 3-4	1P-10A or B RHR Pumps Component Cooling Water Flow Low Unit 1	1	08/10/00
PROC CL 6C	Radwaste Component Cooling Water	8	11/21/97
PROC CL 7B	Safety Injection System Checklist Unit 1	17	04/04/02
PROC CL 10B	Service Water Safeguards Lineup	52	02/04/02
PROC CL 10D	Fuel Oil System	17	08/09/99
PROC CL 11A G-01	G-01 Diesel Generator Checklist	20	11/08/01
PROC CL 11A G-02	G-02 Diesel Generator Checklist	24	10/11/01
PROC CL 11A G-03	G-03 Diesel Generator Checklist	4	09/22/98
PROC CL 11A G-04	G-04 Diesel Generator Checklist	5	08/07/97
PROC DBD-02	Component Cooling Water System	1	07/03/02

LICENSEE'S LIST OF DOCUMENTS PROVIDED

PROC DBD-11	Safety Injection and Containment Spray System Design Basis Document	0	11/30/00
PROC DBD-16	Emergency Diesel Generator System	1	07/03/02
PROC DG-M17	Guideline for Preparation of Motor-Operated Valve (MOV) Differential Pressure Calcs	0	01/11/94
PROC EOP-1 U1	Temp Change 2002-0476	31	08/01/02
PROC EOP-1 U2	Temp Change 2002-0477	31	08/01/02
PROC EOP-1.3 U1	Temp Change 2002-0474	27	08/01/02
PROC EOP-1.3 U2	Temp Change 2002-0475	27	08/01/02
PROC ICP 06.051A-1	G-01 EDG Room Exhaust Fans W-12A and W-12B Temperature Switch 24 month Calibrations	3	10/30/01
PROC ICP 06.051A-2	G-02 EDG Room Exhaust Fans W-12C and W-12D Temperature Switch 24 month Calibrations	3	10/30/01
PROC ICP 06.069	Emergency Diesel Generators G-01/02 and G-03 Non-Outage Calibration Procedure	1	12/02/97
PROC ICP 06.070	Emergency Diesel Generators G-04 Non-Outage Calibration Procedure	1	10/30/97
PROC ICP 13.007A-1	G-01 Emergency Diesel Generator 24 month Instrument Calibration	4	11/20/01
PROC ICP 13.007A-2	G-02 Emergency Diesel Generator 24 month Instrument Calibration	5	04/02/02
PROC ICP 13.007B-1	Emergency Diesel Generator G-03 Calibration Procedure	3	01/03/01
PROC ICP 13.007B-2	Emergency Diesel Generator G-04 Calibration Procedure	3	06/27/00
PROC ICP 6.13	Fuel Oil System (Non-outage)	17	04/23/02
PROC IT 01	High Head Safety Injection Pumps and Valves (Quarterly) Unit 1	48	05/17/01
PROC IT 03	Low Head Safety Injection Pumps and Valves (Quarterly) Unit 1	43	05/17/01
PROC IT 05	Containment Spray Pumps and Valves (Quarterly) Unit 1	44	11/05/01
PROC IT 100	Seat Leakage Test of Diesel Air Compressor Discharge Check Valves (Quarterly)	10	08/30/01
PROC IT 12	Component Cooling Water Pumps and Valves (Quarterly) Unit 1	26	04/18/01
PROC IT 12A	CC Pumps and Valves while Aligned for RHR Operation (Cold Shutdown) Unit 1	8	11/20/01
PROC IT 14	Quarterly Inservice Test of Fuel Oil Transfer System Pumps and Valves	19	05/02/02
PROC IT 14A	Setpoint Test of EDG G-01 FOTP Unloader Valves	0	03/22/01
PROC IT 14B	Setpoint Test of EDG G-02 FOTP Unloader Valves	0	03/22/01
PROC IT 330	Containment Isolation Valves (Cold Shutdown) Unit 1	13	08/02/01
PROC IT 60	Containment Isolation Valves (quarterly) Unit 1	27	05/17/01
PROC IT 605	Radwaste Component Cooling Water Supply and Return Valves (Refueling) Unit 2	6	04/12/01
PROC MI 32.9	Scaffolding Program	11	04/24/02
PROC NP 7.2.4	Calculations	7	03/14/01
PROC OI 100	Performed 07/12/02	19	06/06/02
PROC OI 100A	Depressurization of SI Accumulators to Containment Purge Exhaust System	6	05/02/02
PROC OI 100B	Pressurize SI Accumulators From the Nitrogen Truck	4	10/10/00
PROC OI 128	SI System Fill and Vent Unit 1	6	08/16/01
PROC OI 135A	Fill and Vent Train A RHR System Unit 1	4	06/04/01
PROC OI 135B	Fill and Vent Train B RHR System Unit 1	4	06/04/01
PROC OI 145A	Equalizing Emergency Diesel Generator Starting Air Banks	1	11/20/01

LICENSEE'S LIST OF DOCUMENTS PROVIDED

PROC OI 163	SI, RHR, and CS Pumps runs and Venting SI Pump Casings	2	04/04/02
PROC OI 168	Emergency Diesel Generator Operability	0	11/20/01
PROC OI 171	T-34A/B Safety Injection Accumulator Leakage Troubleshooting	1	06/21/02
PROC OI 35A	Standby Emergency Power Alignment	8	11/20/01
PROC OI 70 Temp	Service Water System Operation	39	05/09/02
PROC OI 92A	Fuel Oil Ordering, Receipt, Sampling and T-173 Fill Tank Draining	6	02/04/02
PROC OI 92C	Filtration of T-175A/B Using Temporary Filter Unit	0	11/19/01
PROC OI-92B	Lube Oil/EH Fluid Sampling and Lube Oil Viscosity Testing	0	06/05/96
PROC OP 11A G-01	Emergency Diesel Generator G-01	3	12/21/00
PROC OP 11A G-02	Emergency Diesel Generator G-02	4	05/03/01
PROC OP 11B	Emergency Diesel Generator G-03 (G-04)	7	11/20/01
PROC OP-7A	Placing Residual Heat Removal System in Operation	41	11/20/01
PROC ORT 27	Reactor Coolant Pump Seal Return Unit 1	17	02/08/01
PROC ORT 3A	Safety Injection Actuation with loss of Engineered Safeguards AC (Train A) Unit 1	35	04/2/01
PROC ORT 3A	Safety Injection Actuation with loss of Engineered Safeguards AC (Train A) Unit 2	34	04/08/1
PROC ORT 3B	Safety Injection Actuation with Loss of Engineered Safeguards AC (Train B) Unit 1	32	04/02/01
PROC ORT 3B	Safety Injection Actuation with Loss of Engineered Safeguards AC (Train B) Unit 2	33	04/08/02
PROC ORT 67	Component Cooling Water to and from the Excess Letdown Heat Exchanger Refueling Shutdown Unit 1	20	04/25/02
PROC ORT 68	Component Cooling Water to and from 1P-1A Refueling Shutdown Unit 1	23	05/23/02
PROC ORT 69	Component Cooling Water to and from 1P-1B Refueling Shutdown Unit 1	21	03/26/01
PROC PBPT-110	EDG G02 Test	0	02/14/02
PROC PC 12 Part 1	Diesel Generator Vibration (Quarterly) G-01	4	11/20/00
PROC PC 12 Part 2	Diesel Generator Vibration (Quarterly) G-02	4	11/20/00
PROC PC 12 Part 6	Diesel Generator Vibration (Quarterly) G-03	3	04/19/01
PROC PC 12 Part 7	Diesel Generator Vibration (Quarterly) G-04	3	04/23/01
PROC PC 9 Part 4	List of Selected Corrective Actions	10	11/20/00
PROC PROC OI 100	Adjusting SI Accumulator Level and Pressure	19	06/06/02
PROC RMP 9043-11	Emergency Diesel Generator G-01 Electrical Inspection	8	06/05/02
PROC RMP 9043-12	Emergency Diesel Generator G-01 Safety Related Protective Relay Calibration	4	11/28/01
PROC RMP 9043-13	Emergency Diesel Generator G-01 Mechanical Inspection	6	05/15/02
PROC RMP 9043-16	Emergency Diesel Mini-Power Pack Inspection	7	12/01/00
PROC RMP 9043-17	Emergency Diesel Generator G-01 Maintenance Run and Post-Maintenance Testing	3	10/24/01
PROC RMP 9043-18	Emergency Diesel Generator G-01 2 Year Relay Maintenance	2	11/09/01
PROC RMP 9043-19	Emergency Diesel Generator G-01 Remote Meter Calibration	4	11/28/01
PROC RMP 9043-21	Emergency Diesel Generator G-02 Electrical Inspection	4	05/08/02
PROC RMP 9043-22	Emergency Diesel Generator G-02 Safety Related Protective Relay Calibration	4	05/08/02
PROC RMP 9043-23	Emergency Diesel Generator G-02 Mechanical Inspection	4	05/01/02
PROC RMP 9043-27	Emergency Diesel Generator G-02 Maintenance Run and Post-Maintenance Testing	4	10/17/01

LICENSEE'S LIST OF DOCUMENTS PROVIDED

PROC RMP 9043-28	Emergency Diesel Generator G-02 2 Year Relay Maintenance	3	11/09/01
PROC RMP 9043-29	Emergency Diesel Generator G-02 Remote Meter Calibration	2	11/09/01
PROC RMP 9043-31	Emergency Diesel Generator G-03 2 Year Electrical Inspection	3	04/18/01
PROC RMP 9043-32	Emergency Diesel Generator G-03 Safety Related Protective Relay Calibration	3	04/18/01
PROC RMP 9043-33	Emergency Diesel Generator G-03 Mechanical Inspection	3	04/18/01
PROC RMP 9043-37	Emergency Diesel Generator G-03 Maintenance Run and Post-Maintenance Testing	2	01/05/01
PROC RMP 9043-39	Emergency Diesel Generator G-03 Local and Remote Meter Calibration	2	02/14/01
PROC RMP 9043-41	Emergency Diesel Generator G-04 2 Year Electrical Inspection	5	05/29/02
PROC RMP 9043-42	Emergency Diesel Generator G-04 Safety Related Protective Relay Calibration	3	10/11/00
PROC RMP 9043-43	Emergency Diesel Generator G-04 Mechanical Inspection	4	05/22/02
PROC RMP 9043-47	Emergency Diesel Generator G-04 Maintenance Run and Post Maintenance Testing	3	05/22/02
PROC RMP 9043-49	Emergency Diesel Generator G-04 Local and Remote Meter Calibration	1	06/30/00
PROC RMP 9043-50	Electro-Motive Division Ball valve Rebuild	2	10/31/01
PROC RMP 9043-51	Emergency Diesel Generator G-01 Protective Relay Functional Test	1	11/09/01
PROC RMP 9043-52	Emergency Diesel Generator G-02 Protective Relay functional Test	3	11/09/01
PROC RMP 9043-53	Emergency Diesel Generator G-03 Protective Relay Functional Tests	1	05/29/02
PROC SMP #895	RHR Pump Cubicle Ambient Air Temperature Measurement During Simulated Loss of HVAC and Recirculation Phase After LOCA (performed 06/09/88)	0	05/12/88
PROC STPT 21	Breaker Trip Setpoint		
PROC TLB 10	Refueling Water Storage Tank Level	3	10/02/97
PROC TS 80	Sampling of Emergency Fuel Oil Tanks (Quarterly)	15	06/03/02
PROC TS 81	Emergency Diesel Generator G-01 Monthly	62	12/13/01
PROC TS 82	Emergency Diesel Generator G-02 Monthly	62	12/13/01
PROC TS 83	Emergency Diesel Generator G-03 Monthly	10	12/10/01
PROC TS 86	Emergency Diesel Generator Manual Start	0	11/20/01
PROCCL 7A	Safety Injection System Checklist Unit1	16	04/04/02
SCR 2002-0295	50.59 Screening for Changes to EOP-1 and EOP-1.3 Units 1 & 2	--	08/01/02
SER 93-071	LER 266/92-009-00,. Change to CCW System Configuration for Normal Operation	--	08/31/93
SPEC WEST ACS Sh 4-8	Spec Sheet for Auxiliary Relief Valves	--	Various
SPEED 87-017	CCW Heat Exchanger Tubing	--	11/03/87
SPEED 93-087	Replacement of CC-768	--	10/11/93
TS B 3.5.4	TS Basis for Refueling Water Storage Tank	--	--
WO 99306041	SI Pump Motor Call-Up and Work Plan	--	--