

September 23, 1994

Mr. Robert E. Link, Vice President
Nuclear Power Department
Wisconsin Electric Power Company
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SUBJECT: AMENDMENT NOS. 153 AND 157 TO FACILITY OPERATING LICENSE NOS.
DPR-24 AND DPR-27 - POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2
(TACS M90077 and M90078)

Dear Mr. Link:

The Commission has issued the enclosed Amendment Nos. 153 and 157 to Facility Operating License Nos. DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Units 1 and 2. The amendments revise the Technical Specifications in response to your application dated August 9, 1994, as supplemented on August 19, 1994.

The amendments modify Technical Specification (TS) 15.3.4, "Steam and Power Conversion System," and 15.3.7, "Auxiliary Electrical Systems," to increase the allowed outage times for one motor driven auxiliary feedwater pump and for the standby emergency power for the Unit 1 Train B 4160 Volt safeguards bus (A06) from 7 to 12 days. The proposed amendments also modify TS 15.3.3, "Emergency Core Cooling System, Auxiliary Cooling Systems, Air Recirculation Fan Coolers, and Containment Spray," to provide the clarification that the service water pump (P-32E) operating with power supplied by the Alternate Shutdown System is operable from offsite power. The changes are one-time extensions of specific allowed outage times.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
Original signed by Allen G. Hansen
Allen G. Hansen, Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-266
and 50-301

Enclosures:

- 1. Amendment No. 153 to DPR-24
- 2. Amendment No. 157 to DPR-27
- 3. Safety Evaluation

cc w/enclosures: See next page

PDIII-3:LA	PDIII-3: Intern	PDIII-3: PM	<i>Ch #18</i> SPLB	SRXB	PDIII-3: PD	OGC-OWF
<i>MRushbrook</i>	<i>GDentel</i>	<i>AHansen</i>	<i>McCracken</i>	<i>RC Jones</i>	<i>Set for JHannon</i>	<i>157</i>
<i>9/1/94</i>	<i>9/6/94</i>	<i>9/16/94</i>	<i>9/13/94</i>	<i>9/1/94</i>	<i>9/18/94</i>	<i>9/12/94</i>

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Mr. Robert E. Link
Wisconsin Electric Power Company

Point Beach Nuclear Plant
Unit Nos. 1 and 2

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

WISCONSIN ELECTRIC POWER COMPANY

DOCKET NO. 50-266

POINT BEACH NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 153
License No. DPR-24

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Wisconsin Electric Power Company (the licensee) dated August 9, 1994, as supplemented on August 19, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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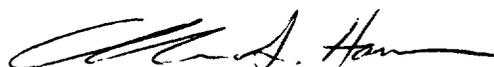
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-24 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 153, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective immediately upon issuance. The Technical Specifications are to be implemented within 45 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Allen G. Hansen, Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of issuance: September 23, 1994



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

WISCONSIN ELECTRIC POWER COMPANY

DOCKET NO. 50-301

POINT BEACH NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.157
License No. DPR-27

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Wisconsin Electric Power Company (the licensee) dated August 9, 1994, as supplemented on August 19, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 157, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective immediately upon issuance. The Technical Specifications are to be implemented within 45 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Allen G. Hansen, Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of issuance: September 23, 1994

ATTACHMENT TO LICENSE AMENDMENT NOS. 153 AND 157
TO FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27
DOCKET NOS. 50-266 AND 50-301

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE

TS 15.3.3-6

TS 15.3.4-2a

TS 15.3.7-3

INSERT

TS 15.3.3-6

TS 15.3.4-2a

TS 15.3.7-3

- a. Four service water pumps are operable.*
 - b. All necessary valves, interlocks and piping required for the functioning of the Service Water System during accident conditions are also operable.
2. During power operation, the requirements of 15.3.3.D-1 may be modified to allow one of the following components to be inoperable at any one time. If the system is not restored to meet the conditions of 15.3.3.D-1 within the time period specified, both reactors will be placed in the hot shutdown condition. If the requirements of 15.3.3.D-1 are not satisfied within an additional 48 hours, both reactors shall be placed in the cold shutdown condition.
- a. One of the four required service water pumps may be out of service provided a pump is restored to operable status within 24 hours.
 - b. One of the two loop headers may be out of service for a period of 24 hours.
 - c. A valve or other passive component may be out of service provided repairs can be completed within 48 hours.

Basis

The normal procedure for starting the reactor is, first, to heat the reactor coolant to near operating temperature, by running the reactor coolant pumps. The reactor is then made critical by withdrawing control rods and/or diluting boron in the coolant.⁽¹⁾ With this mode of start-up, the energy stored in the reactor coolant during the approach to criticality is substantially equal to that during power operation and therefore to be conservative most engineered safety system components and auxiliary cooling systems, shall be fully operable. During low temperature physics tests there is a negligible amount of stored energy in the reactor coolant, therefore an accident comparable in severity to the Design Basis Accident is not possible, and the engineered safety systems are not required.

* During the Unit 2 1994 refueling outage, one train B service water pump operating with power supplied by the Alternate Shutdown System, B08/B09 480 volt buses, may be considered operable from a normal (offsite) power supply, under the provisions of Technical Specification 15.3.0.C.

2. Single Unit Operation - One of the three operable auxiliary feedwater pumps associated with a unit may be out-of-service for the below specified times. The turbine driven auxiliary feedwater pump may be out-of-service for up to 72 hours. If the turbine driven auxiliary feedwater pump cannot be restored to service within that 72 hour time period, the reactor shall be in hot shutdown within the next 12 hours. Either one of the two motor driven auxiliary feedwater pumps may be out-of-service for up to 7 days.* If the motor driven auxiliary feedwater pump cannot be restored to service within that 7 day period the operating unit shall be in hot shutdown within the next 12 hours.

D. The main steam stop valves (MS-2017 and MS-2018) and the non-return check valves (MS-2017A and MS-2018A) shall be operable. If one main steam stop valve or non-return check valve is inoperable but open, power operation may continue provided the inoperable valve is restored to operable status within 4 hours, otherwise the reactor shall be placed in a hot shutdown condition within the following 6 hours. With one or more main steam stop valves or non-return check valves inoperable, subsequent operation in the hot shutdown condition may proceed provided the inoperable valve or valves are maintained closed. An inoperable main steam stop valve or non-return check valve may however, be opened in the hot shutdown condition to cool down the affected unit and to perform testing to confirm operability.

E. The crossover steam dump system shall be operable. If the crossover steam dump system is determined to be inoperable, reduce power to less than 480 MWe (gross) within 3 hours.

F. During power operation, at least one of the turbine overspeed protection systems that trip the turbine stop valves or shut the turbine governor valves shall be operable. If all three systems are determined to be inoperable, isolate the turbine from the steam supply within the next six hours.

* During the Unit 2 1994 refueling outage, P-38B, the Train B motor driven auxiliary feedwater pump, may be out-of-service for up to 12 days.

- associated diesel generator. The applicable Limiting Conditions for Operation of the equipment removed from service shall be entered for the operating unit.
- 2) A single train of spent fuel cooling is adequate to cool the spent fuel pool.
 - 3) The required redundant shared engineered safety features for the other unit are operable.
- f. The normal power supply or standby emergency power supply to Unit 1 A05/B03 or Unit 2 A06/B04 may be out-of-service for a period not exceeding 7 days provided the required redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO and every 72 hours thereafter. If the normal power supply is out-of-service, an operable emergency diesel generator is supplying the affected 4160/480 Volt buses. After 7 days, both units will be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours.
- g. The normal power supply or standby emergency power supply to Unit 1 A06/B04 or Unit 2 A05/B03 or both may be out-of-service for a period not exceeding 7 days provided the required redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO and every 72 hours thereafter. If the normal power supply is out-of-service, an operable emergency diesel generator is supplying the affected 4160/480 Volt buses. After 7 days, the affected unit or units will be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours.
- h. The normal power supply or standby emergency power supply to Unit 1 A05/B03 and Unit 2 A05/B03, or Unit 1 A06/B04 and Unit 2 A06/B04 may be out-of-service for a period not exceeding 7* days provided the required redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO and every 72 hours thereafter. If the normal power supply is out-of-service, an operable emergency diesel
- * During the Unit 2 1994 refueling outage, standby emergency power to Unit 1 A06/B04 and Unit 2 A06/B04 may be out-of-service for up to 12 days.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 153 AND 157 TO

FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27

WISCONSIN ELECTRIC POWER COMPANY

POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

By letter dated August 9, 1994, as supplemented August 19, 1994, Wisconsin Electric Power Company (WEPCo), the licensee, proposed to modify the Point Beach Nuclear Plant (PBNP), Units 1 and 2, Technical Specifications (TS) by increasing the allowed outage times for one motor driven auxiliary feedwater pump and for the standby emergency power for the Unit 1 Train B 4160 Volt safeguards bus (A06) from 7 to 12 days. The proposed amendments modify TS 15.3.4, "Steam and Power Conversion System," and TS 15.3.7, "Auxiliary Electrical Systems," to provide the one-time extensions of the specific allowed outage times. The proposed amendments also modify TS 15.3.3, "Emergency Core Cooling System, Auxiliary Cooling Systems, Air Recirculation Fan Coolers, and Containment Spray," to provide the clarification that the service water pump (P-32E) operating with power supplied by the Alternate Shutdown System is operable from offsite power.

2.0 BACKGROUND

WEPCo is adding two EDGs to Point Beach Nuclear Plant, Units 1 and 2, and reconfiguring portions of the 4160-Volt emergency electrical power system. The first connection of the output of one of the additional emergency diesel generators into the existing electrical system is expected to take place during the fall, 1994 Unit 2 refueling outage, which is presently scheduled to start on September 24, 1994.

During the connection process, Unit 2 will be defueled; however, some shared equipment that supports the operation of Unit 1 could be out-of-service for longer than the present Technical Specification allowed outage time (AOT). This license amendment request is necessary to allow the safe continued operation of Unit 1 while the connection of the first additional EDG (G-04) is taking place.

The major steps of the connection process are:

1. Changing the power source of the Unit 2 Train B 480 Volt safeguards bus (2B04) from the existing Unit 2 Train B 4160 Volt safeguards bus (2A06) to the new 2A06.
2. Installation of a new supply breaker from the Unit 2 Train B 4160 Volt supply bus (2A04) to the new 2A06.
3. Connection of 2A04 to the new 2A06.
4. The final step will be to establish operability of the new EDG G-04 as a standby emergency power supply for the new 2A06.

With respect to Unit 1, operability of the safeguards buses is based on maintaining at least one on-site AC power source and associated distribution system operable during accident conditions coincident with an assumed loss of off-site power and a single failure in the other on-site AC source.

To cope with the loss of all AC power (station blackout), Point Beach Gas Turbine G-05 is used as an alternate AC power source to comply with the blackout rule. Core cooling and appropriate containment integrity can be maintained by using the Gas Turbine G-05 as the alternate AC power source if a station blackout occurs during the connection process. Verification of G-05 operability prior to beginning the connection process is one of the compensatory measures.

3.0 EVALUATION

3.1 TS 15.3.4.C.2 and TS 15.3.7.B.1.h

Current TS 15.3.4, "Steam and Power Conversion System," specifies the limiting conditions for operation for the auxiliary feedwater system and service water system. TS 15.3.4.C.2 states that either of the two motor driven auxiliary feedwater pumps may be out-of-service for up to 7 days.

The proposed amendment adds a footnote to the TS 15.3.4.C.2. It revises the AOT for the motor driven auxiliary feedwater pump from 7 to 12 days, and states:

"* During the Unit 2 1994 refueling outage, P-38B, the Train B motor driven auxiliary feedwater pump, may be out-of-service for up to 12 days."

The motor driven auxiliary feedwater pump (powered from Unit 2 B04), P-38B, will be removed from service to prevent potential overload of the associated (Train A, EDG G-01) emergency diesel generator during the connection process and thus will enter into the LCO in TS 15.3.4.C.2. The loss of the one auxiliary feedwater pump (Train B, P-38B) does not compromise the safety of plant due to the sufficient capabilities of the remaining motor driven auxiliary feedwater pump and the turbine driven auxiliary feedwater pump.

The most limiting single-failure for the auxiliary feedwater system with the one motor driven auxiliary feedwater pump out-of-service would be the loss of the Unit 1 turbine driven auxiliary feedwater pump. In this case, only the one Train A electric motor driven auxiliary feedwater pump would be available. The Train A motor driven auxiliary feedwater pump can provide sufficient flow to mitigate accidents that require auxiliary feedwater, except it normally provides feedwater to the Loop A Steam Generator. Accidents that require isolation of the Loop A Steam Generator could be mitigated by realignment of electrical systems to power the other motor driven auxiliary feedwater pump (P-38) or by manual cross-connection of the Train A and Train B auxiliary feedwater flow lines, if the turbine driven auxiliary feedwater pump has failed. The possible cross-connection or switching the power supply provides an additional benefit along with the compensatory measures (listed below in the safety evaluation section 3.3) not recognized in the original AOT.

Present TS 15.3.7, "Auxiliary Electrical Systems," specifies the limiting conditions for operation for the standby emergency power supplies for the engineered safeguards buses. TS 15.3.7.B.1.h states that the standby emergency power supply to Unit 1 A06/B04 and Unit 2 A06/B04 may be out of service for a period not exceeding 7 days provided the redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO and every 72 hours thereafter.

The proposed amendment adds a footnote to the TS 15.3.7.B.1.h. It revises the AOT for the Train B standby emergency power supply from 7 to 12 days, and states:

"* During the Unit 2 1994 refueling outage, standby emergency power to Unit 1 A06/B04 and Unit 2 A06/B04 may be out-of-service for up to 12 days."

The basis for the request to extend the AOT from 7 to 12 days is that the connection of one of the new emergency diesel generators during the Unit 2 refueling outage will require that the Train B safeguards buses in Unit 2 be significantly reconfigured. During the reconfiguration, power will be supplied to the Unit 2 Train B 480 Volt safeguards bus (B04) by a tie-breaker from the Unit 2 Train A 480 Volt safeguards bus (B03). The use of the tie-breaker for the installation of the new emergency diesel generators is limited by TS 15.3.7.B.1.e, which states:

With a unit defueled, one pair of buses for the defueled unit, A05 and A06 or B03 and B04, may be tied together through their common tie-breaker in excess of 8 hours provided:

1. An evaluation is performed to show that the loads that remain or can be energized by the buses will not cause a potential overload of the associated EDG. The applicable Limiting Conditions for Operation of

the equipment removed from service shall be entered for the operating unit.

2. A single train of spent fuel cooling is adequate to cool the spent fuel pool.
3. The required redundant shared engineered safety features for the other unit are operable.

Unit 2 will be defueled during the connection process. The standby emergency power LCO will be entered for Unit 1 A06 and Unit 2 A06 (TS 15.3.7.B.1.h.) because Train B emergency diesel generator G-02 will not be able to provide power to at least two service water pumps.

The estimated time for completion of the activities to restore the standby emergency power, auxiliary feedwater, and service water system to normal is 12 days. The AOTs for the applicable LCOs in the Point Beach Technical Specifications are 7 days.

The justification for these changes include the compensatory measures, the contingency actions, and the probabilistic safety assessment that follows.

3.2 TS 15.3.3.D.1.a

Current TS 15.3.3.D.1.a specifies that four service water pumps must be operable for the reactor to be made or maintained critical. The proposed amendment adds a footnote to the TS 15.3.3.D.1.a:

"* During the Unit 2 1994 refueling outage, one train B service water pump operating with power supplied by the Alternate Shutdown System, B08/B09 480 volt buses, may be considered operable from a normal (offsite) power supply, under the provisions of Technical Specification 15.3.0.C.

Three Train A service water pumps powered by the 1B03 and 2B03 buses will remain unaffected by the reconfiguration and bus-tie work. The one service water pump powered from 1B04 bus will be unaffected except that the standby emergency power source will be considered inoperable. One of the two service water pumps powered from 2B04 will be removed from service to prevent potential overload and the other will be powered by the Alternate Shutdown System buses. The footnote added to TS 15.3.3.D.1.a is only for clarification to the existing TS, since the service water pump supplied by the Alternate Shutdown System would be considered operable under existing TS 15.3.0.C. TS 15.3.0.C states the component is "considered operable for the purpose of satisfying the requirements of the applicable Limiting Conditions of Operation, provided...the alternate power source (normal or emergency) is operable."

3.3 Compensatory Measures

The following compensatory measures will be invoked to establish appropriate assurance that the required equipment will remain operable during the connection process:

1. The gas turbine generator (G05), which is the alternate AC power source for Point Beach, will be verified operable by a start and load-run test within 48 hours prior to entry into the standby emergency power LCO. The gas turbine generator will continue to be verified operable by completion of an operational readiness check every 24 hours after the initial test, until the standby emergency power LCO is exited.
2. Other maintenance and test activities that could cause inoperability of required equipment, a loss of off-site power, or shutdown of the operating unit will not be scheduled during the period of these LCOs. The outage planning committee and safety evaluation group will implement this compensatory measure by evaluating specific work activities in a thorough refueling outage safety review process and by maintaining an appropriate outage schedule.
3. At least three of the four off-site power 345 kV transmission lines will be in-service during the connection process.
4. The Train A EDG (G01) will be tested within 24 hours of entry into the standby emergency power LCO and every 72 hours thereafter, until the LCO is exited.
5. Train B EDG (G02) will be maintained in the maximum possible state of operational readiness during the connection process.
6. A twice per shift (approximately every 4 hours) firewatch in the auxiliary feedwater pump room will be instituted as a compensatory measure for the inoperability of the Train B auxiliary feedwater pump (P-38B) as required by the Point Beach Appendix R fire protection program.
7. All Senior Reactor Operators and Reactor Operators will be trained on the Technical Specifications for the allowed outage time extension and the procedures that will be used for the connection process. The connection process procedures, called installation work plans (IWPs), contain the appropriate compensatory measures and contingency actions.
8. Continuous technical support for the operating crews will be provided by an on-call Senior Reactor Operator with detailed knowledge of the connection process. In addition, there will be an IWP coordinator on site at all times during the connection process. The IWP coordinators will be technically qualified personnel with detailed knowledge of the

connection process. The IWP coordinators will be responsible for the following:

- a. Monitoring the status of the connection process and completion of the procedural steps that are being performed.
- b. Periodically updating the operating crew regarding the status of the connection process.
- c. Providing updates to the refueling outage planning committee to coordinate the connection process with refueling outage activities.

3.4 Contingency Actions

The emergency response organization (ERO), the emergency operating procedures (EOPs), and the shutdown emergency procedures (SEPs) for Point Beach are established and are sufficient to protect the health and safety of the public during anticipated emergencies. No changes to the ERO, EOPs, or SEPs are necessary for emergency response during the connection process.

The following contingency actions will be invoked as necessary to recover from possible failures or malfunctions during the connection process:

1. Alternative methods of restoring power to the safeguards buses will be identified in the procedures used to perform the connection process.
2. The PBNP System Control Center will have guidance in place that will provide the actions that are necessary to ensure grid stability and off-site power to Point Beach. This includes the loss of any single transmission element for all combinations of off-site power lines that can be expected during the connection process.
3. The work will be performed in such a manner during the connection process to allow restoration of the electrical system to the state it was in prior to the connection process, if completion of the connection process becomes unworkable.
4. Guidance for contingency actions to maintain service water system operability will be provided in the procedures used to perform the connection process.

3.5 Probabilistic Safety Assessment

The installation of the third emergency diesel generator will require that diesel generator G02 be unavailable for one day, and that certain equipment that would normally be powered from the Unit 1 train B 4160 volt safeguards bus A06 be placed in "pull-to-lock" position or provided with alternative, non-redundant or non-safety grade power supplies for the next 11 days. The current technical specifications allow a 7-day outage time for one auxiliary

feedwater pump and one standby emergency power source, and prohibit operation of either unit unless there are 4 operable service water pumps.

During the last 11 days of the connection process, EDG B will be considered inoperable, but will be functionally available and will autostart on demand. Buses 1A06 and 2A06 will be tagged out of service, which will isolate bus 2B04 from EDG B. Therefore, bus 2B04 will be cross-tied to bus 2B03 to provide emergency power from EDG A. However, to avoid overloading EDG A, the two service water pumps normally on bus 2B04 will be eliminated from these loads by placing P-32E on the Alternate Shutdown System buses and taking P-32D out of automatic start mode. The six service water pumps will temporarily be powered as follows:

<u>Power Source</u>	<u>Bus</u>	<u>SWS Pump</u>
EDG A (G-01)	1B03	P-32A
		P-32B
	2B03	P-32F
	2B04 X-tied	P-32D (not in auto)
EDG B (G-02)	1B04	P-32C
Alt Shutdown Sys	B08/B09	P-32E

This creates a vulnerability to loss of offsite power with failure of EDG A, which would leave only the single SWS pump powered by EDG B to supply all service water system loads. The licensee's request states that the single SWS pump would be sufficient for the loads of a LOSP, provided that the spent fuel pool cooling load is isolated from the SWS within a half-hour. However, this configuration would not provide adequate service water under the design basis condition of a LOCA with LOSP. (The risk implications of the LOCA with LOSP were evaluated by the staff and the results are presented later.)

The licensee used the Point Beach Nuclear Plant (PBNP) Individual Plant Examination (IPE) model to calculate the risk increment associated with the equipment unavailability created by the 12-day connection process. They modified the IPE to represent the following conditions:

- Train B EDG (G-02) completely out-of-service for the first day, then available with operator action for the remaining 11 days.
- The train B auxiliary feedwater pump (P-38B) not available for 12 days.
- The Unit 2 train B 4160 volt safeguards bus and supply bus both being out-of-service for 12 days.
- The Unit 2 train B 480 volt bus (2B04) powered from the train A 480 volt safeguards bus (2B03).
- One train B service water pump (P-32D) not in automatic, and one train B service water pump (P-32E) powered from the alternate shutdown system.

Their results indicated that the increase in core damage probability during the first day is 8.4×10^{-7} and the increase over each of the next 11 days is 4.14×10^{-8} /day, for a total increment of 1.30×10^{-6} over the 12-day connection process. The steam generator tube rupture sequences were the dominant contributors to their total, and the station blackout sequences were the dominant difference between the first day and the other days of the outage.¹ As a check on the licensee's conclusions, the NRC staff used a simplified Point Beach model, previously developed for the Accident Sequence Precursor (ASP) Program, to estimate the incremental core damage probability associated with the 12-day connection process. Input assumptions included:

- EDG 2 inoperable for 1 day
- AFW pump B inoperable for 12 days
- Gas Turbine available to power emergency buses with failure probability of 0.10/demand (assumes no maintenance during connection period)
- Steam generator tube rupture frequency in generator normally fed by the remaining operable AFW pump = 1×10^{-2} /year.
- AFW to ruptured steam generator available as an operator recovery action, only.

The resulting incremental core damage probability for the 12-day connection process was estimated at 4.7×10^{-7} , with LOOP sequences dominating. These results are presented in Table 3.5. The results of the licensee's and staff's analyses are comparable, considering the level of accuracy associated with the probabilistic models.

In addition, the staff evaluated the issue (discussed above) concerning the adequacy of the service water supply to EDG B when LOCA loads are added under conditions of LOSP and failure of EDG A. The frequency of the joint occurrence of LOSP and LOCA is too small to contribute significantly to the probability of core damage. However, analysis of Licensee Event Report (LER) data indicates that about 16% of LOSP events involve spurious emergency core cooling system (SI) actuations². This would increase the demand on the SWS until the reactor operators could follow their procedures to the point of terminating the SI function. If the LOSP event is accompanied by failure of EDG A, then EDG B would not have sufficient cooling from the one remaining SWS

¹Information about relative contributions of accident sequences was provided during a telephone conversation on August 12, 1994, between Tom Malinowski and Scott Hoggatt at Wisconsin Electric Power Company and Steve Long and Allen Hansen at NRC.

²"Loss of Offsite Power Search (SMTP Id#: 6221)," Internet message from Andrea Cross, ORNL to Thomas Koshy, NRC, March 25, 1994, 4:27 p.m.

pump until SI is terminated. The probability of EDG B damage prior to SI termination and isolation of SI associated SWS loads has not been evaluated. To investigate the sensitivity of the core damage probability estimate to this issue, the incremental probability of core damage was estimated for the 12-day connection process, assuming that LOSP with failure of EDG A would always cause failure of EDG B. Again, the gas turbine was credited with a failure probability of 0.1/demand. The resulting additional core damage probability was estimated as 5.8×10^{-7} . This value would be reduced by any probability of recovering sufficient service water flow to EDG B before the diesel was destroyed, but this reduction was not quantified. Thus, the total risk increment estimated by the staff is $\leq 1.0 \times 10^{-6}$, and the inclusion of this issue does not significantly alter the conclusions.

On the basis of these evaluations, it is concluded that the probability of core damage associated with the 12-day connection process is on the order of 10^{-6} . The increase in probability of creating a bypass release due to core damage following steam generator tube rupture is estimated to be in the mid- 10^{-7} range. These values are low compared to annual core damage and bypass release frequency values previously found to be acceptable by NRC in its own PRAs and the IPEs. Therefore, the risk associated with the technical specification modifications requested to facilitate connection of the third emergency diesel generator is found to be acceptably low.

No evaluations were conducted to estimate the risk associated with alternatives, such as requiring the operating unit to shut down during the connection process. Because there is an increase in the level of risk associated with the early phases of shutdown, it is not clear that there would be an alternative with less associated risk. However, it is clear that the potential risk savings are too small to make such analysis worthwhile, due to the low value associated with the proposed actions.

Table 3.5 Staff Estimate of Core Damage Probability Increase

<u>Period</u>	<u>Condition</u>	<u>Probability</u>
1st day	EDG B and MDAFW train B inoperable	2.4×10^{-7}
2nd - 12th day	MDAFW train B inoperable (LOCA, LOSP and Transient initiators)	7.0×10^{-9}
All 12 days	Tube rupture in SG A with MDAFW train B inoperable	2.2×10^{-7}
		<hr/>
		4.7×10^{-7}
2nd - 12th days	Sensitivity to spurious SI	$\leq 5.8 \times 10^{-7}$
	Core Damage Probability Increase	$\leq 1.0 \times 10^{-6}$

Event Identifier: Point Beach 12-day ESF bus outage for adding 3rd EDG
Event Description: Sensitivity to potential dependent failure of EDG B
given LOSP and failure of EDG A

Station Blackout Probability:

LOSP frequency = 1.4×10^{-4} /day (from 1-day ASP run)
duration = 11 days
EDG A failure probability = 5×10^{-2}
Probability of SI signal, given LOSP = 1.6×10^{-1}
Probability of EDG B failure,
given EDG A failure and SI signal = 1.0 (assumed)
Probability of gas turbine failure = 1×10^{-1}
product: 1.23×10^{-6}

Conditional Probability of Core Damage, given Station Blackout:

nonrecovery probability for offsite power = 4.5×10^{-1}
probability of TDAFW failure = 1.7×10^{-2}
sum: 4.7×10^{-1}

Probability of core damage:

station blackout probability = 1.23×10^{-6}
conditional core damage probability = 4.7×10^{-1}
product: 5.8×10^{-7}

3.6 Summary

Based on our review of compensatory measures, the contingency actions, and probabilistic safety analysis, the staff concludes that a one-time extension of the 7-day AOT to 12-day AOT period for the motor driven feedwater pump and the standby emergency power would not have an unacceptable effect on the overall safety of Point Beach Nuclear Plant. On this basis, we find that a one-time extension of an additional 5 days during the upcoming refueling outage is acceptable. Also, the added footnote for the service water pumps is for clarification only. Therefore, the staff finds the addition acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Wisconsin State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding (59 FR 42870). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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