



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO LICENSEE RESPONSE TO GENERIC LETTER 89-19

AND PROPOSED TECHNICAL SPECIFICATION UPGRADES

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 BACKGROUND

By letter dated February 26, 1993, as supplemented on November 30, 1993, and February 8, 1994, Wisconsin Electric Power Company (WEPCo), the licensee for the Point Beach Nuclear Plant (PBNP), submitted Technical Specification (TS) Change Request (CR) 156 entitled "Modifications to Technical Specifications Section 15.3.7, Section 15.4.6, and Table 15.4.1-2." The proposed revisions would incorporate items that were identified during a comparison of the accident analyses in the PBNP Safety Analysis Report (FSAR) and the Limiting Conditions for Operation (LCO) and surveillance sections of the PBNP TS. The proposed changes add systems or equipment required by the accident analyses. Changes to the testing requirements for the diesel generators are also being proposed to eliminate the daily testing requirement when one diesel generator is inoperable.

2.0 EVALUATION

TS 15.3.7, "Auxiliary Electrical Systems for 120-v ac Vital Instrument Bus"  
Addition of TS 15.3.7.A.1.i and 15.3.7.A.2.j

The design of PBNP allows for operation with one vital ac instrument bus out of service, because the remaining ac vital buses are capable of supporting the minimum safety functions, such as shutting down the unit and maintaining it in a safe shutdown condition. Thus, the current TS permits the loss of a single inverter without entering an LCO. After the recent installation of the static transfer switch, which provides an automatic transfer capability to an alternate ac power source on an inverter failure, the licensee proposed to add the following requirements for the 120-v ac vital instrument buses in the TS:

For normal conditions (i.e., to allow either one or both reactors to be critical), TS 15.3.7.A.1.i has been proposed which states:

"120 VAC Vital Instrument Buses Y01, Y02, Y03, Y04, Y101, Y102, Y103, and Y104 for the unit(s) to be taken critical are energized from a safety-related inverter."

For abnormal conditions (i.e., to allow one reactor to be critical), TS 15.3.7.A.2.j has been proposed which states:

"120 VAC Vital Instrument Buses Y01, Y02, Y03, Y04, Y101, Y102, Y103, and Y104 for the unit to be taken critical are energized from a safety-related inverter."

The 120-v ac instrument bus system at PBNP consists of 16 buses divided among four channels. Each channel (red, white, blue, and yellow) consists of four buses. The four buses in each channel are further divided into two bus groups, one of which serves Unit 1 while the other serves Unit 2. Each channel has three inverters (two normal and one standby). Each normal inverter is dedicated to supply power to one unit; the standby inverter, which can be swung to either unit, is used as a backup whenever a normal inverter is inoperable. Of the 16 instrument buses, 8 are 120-v ac vital instrument buses, which supply power to vital plant instrumentation and for vital control functions and are required to be energized from the most reliable power sources.

The staff reviewed the power distribution subsystem listed in Table B.3.8.9-1 of NUREG-1431, "Westinghouse Standard Technical Specifications." The NUREG-1431 specification requires that each 120-v ac vital instrument bus be energized from its associated inverter in a specified manner between redundant buses within the unit. The current PBNP TS, however, do not contain such a configuration requirement or an operability restriction for an inoperable instrument bus during normal and abnormal reactor operating conditions.

With the installation of automatic bus transfer capability to the 120-v ac alternate power supply (non-inverter, non-safety-related source), the licensee proposes TS 15.3.7.A.1.i and 15.3.7.A.2.j. Although the proposed TS do not fully conform with the NUREG-1431 specifications, they provide plant operability restrictions by identifying the required vital instrument buses. The staff finds that the proposed TS 15.3.7.A.1.i and 15.3.7.A.2.j are an improvement to the current TS and represent safety enhancements. The staff, therefore, finds their addition to the current TS acceptable.

#### Addition of TS 15.3.7.B.1.i

For the case of an ac vital instrument bus that is not energized from its associated inverter during power operation of one or both reactors, the licensee proposes the addition of TS 15.3.7.B.1.i, which states:

"If an operating safety-related inverter is rendered inoperable and the associated loads transfer to a non-safety-related power source, the loads shall be transferred back to an operable safety-related inverter within 8 hours or be in hot shutdown within an additional 6 hours and cold shutdown within 44 hours of inverter inoperability."

The licensee believes that the 8-hour LCO is reasonable because it may take 8 hours to troubleshoot, repair, and shift all loads back to an inverter in an orderly and uninterrupted manner.

Although the alternate power supply is a non-inverter and non-safety-related power source, the licensee believes that it is extremely reliable because it is not subjected to safeguards stripping and can also be powered from the combustion turbine. Therefore, with the installation of automatic transfer capability, the licensee believes that there is a very high probability that the associated instrument bus would remain energized and provide uninterrupted power to its associated loads after an inverter fails.

The staff reviewed a similar provision in NUREG-1431 which requires that the 120-v ac vital instrument bus be restored to an operable status within 2 hours, and its associated inverter restored to an operable status within 24 hours, or be in at least hot standby within the next 6 hours, and in cold shutdown within the following 36 hours. The licensee proposes that the loads be restored to an operable status immediately by transferring to a backup power source and returned to the original safety-related inverter within 2 hours, rather than the 24 hours. The staff finds that proposed TS 15.3.7.B.1.i is more restrictive, and more conservative than the similar provision in NUREG-1431 and is, therefore, acceptable.

#### Modification of TS 15.3.7.B.1.g

In case of one inoperable EDG during power operation of one or both reactors, the current TS states:

"One diesel generator may be inoperable for a period not exceeding 7 days provided the other diesel generator is tested daily to ensure operability and the engineered safety features associated with this diesel generator shall be operable."

By referencing the guidance in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," the licensee proposed that the number of EDG tests be reduced because the NUREG states that testing too frequently is counterproductive to safety in terms of equipment availability and degradation (i.e., increased wear on the EDG during the test). Considering the above guidance, and the demonstrated high reliability of the PBNP EDGs, the licensee initially proposed the following TS revision:

"One diesel generator may be inoperable for a period not exceeding 7 days provided the other diesel generator is load tested to each unit within 24 hours to ensure operability. The engineered safety features associated with this diesel generator shall be operable and have been tested within the required surveillance test intervals."

During a teleconference with the licensee on January 12, 1994, the staff explained that the proposed TS provision was only applicable to a nuclear unit with two EDGs and with a three-day LCO when one EDG is inoperable. Since PBNP has two units with two EDGs and a 7-day LCO for one inoperable EDG, the staff could not concur in the licensee's proposal.

As a result of discussion during the January 12, 1994, teleconference, the licensee revised their TS proposal in a letter dated February 8, 1994. The revised TS proposal states:

"One diesel generator may be inoperable for a period not exceeding 7 days provided the engineered safety features associated with the operable diesel are operable and were tested within their required surveillance test intervals. The other diesel generator shall be started to ensure operability within 24 hours, before or after entry into this LCO and every 72 hours thereafter."

Although NUREG-1431 does not address plants with a 7-day LCO, the staff finds that the proposed TS is consistent with its branch position developed for older plants with a 7-day LCO with one EDG inoperable that states that "the operable EDG should be demonstrated to be operable within 24 hours and every three days thereafter (i.e., not testing everyday)." On this basis, the staff concludes that proposed TS 15.3.7.B.1.g is acceptable.

#### Modifications of Basis Section of TS 15.3.7

To support the amendment to TS 15.3.7, the licensee proposes to change the text of the associated basis as follows:

- 1) Delete the design descriptions of the EDGs and gas turbine generator because this information is better suited for, and has been more thoroughly explained in the PBNP FSAR or other parts of the basis section.
- 2) Add a paragraph that defines the EDG support systems necessary to ensure the operability of the EDGs. The EDG support systems consist of the starting air system, fuel oil system, ventilation system, and dc control system.
- 3) Add four paragraphs that describe each of the EDG support systems and the conditions necessary for them to be considered operable.

The staff has reviewed the above deletion and additions proposed for the basis section and find that they are consistent with the licensee's proposed TS amendment request, are an improvement over the current TS, and provide more details. The staff, therefore, finds these proposed changes to the basis section acceptable.

#### TS 15.4.6, "Emergency Power Systems Periodic Tests for EDG Fuel Oil System" Modification of TS 15.4.6.A.5

As part of the periodic surveillance requirement (SR) to ensure all EDGs will respond promptly and properly when required, TS 15.4.6.A.5 currently states that "Each fuel oil transfer pump shall be run monthly." The licensee's rationale for considering fuel oil transfer capability in the periodic SR is based on the ability to pump fuel oil from the emergency fuel oil tank through the EDG day tank to the engine-mounted fuel tank.

The newly proposed basis section of TS 15.3.7, however, indicates that the scope of EDG support systems that ensure the operability of an EDG has been redefined to include the starting air system, fuel oil system, ventilation

system, and dc control system. The licensee, therefore, proposes redefining the SR for the EDG fuel oil system to include the inventory of fuel oil in the emergency fuel tank, and the operability of fuel oil transfer pumps, as well as their associated piping and valves. On this basis, the licensee proposes to change TS 15.4.6.A.5 to state that "Operability of the diesel fuel oil system shall be verified monthly."

The staff reviewed a similar SR (i.e., SR 3.8.3.1) in NUREG-1431, which requires that a verification of an adequate inventory of fuel oil in the storage tanks to support a design-basis accident be performed every 31 days. Under the licensee's proposal the fuel oil inventory will be verified monthly as a part of the SR for the EDG fuel oil system. Based on the above, the staff finds proposed TS 15.4.6.A.5 acceptable.

#### Addition of TS 15.4.6.A.6

As a means of determining whether new fuel oil and stored fuel oil are of the appropriate grade and have not been contaminated with substances that would have an immediate, detrimental impact on EDG combustion, the licensee proposes the addition of TS 15.4.6.A.6, which states:

"A diesel fuel oil testing program shall be maintained to test both new fuel oil upon receipt and stored fuel oil in the emergency fuel oil tank on a quarterly frequency in accordance with applicable ASTM Standards."

The staff reviewed an applicable SR in NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors," Revision 4. Although the licensee has not cited all of the applicable ASTM standards, the staff finds that the addition of this SR is an improvement over the current TS and the testing interval is consistent with the frequency proposed in NUREG-0452, Revision 4. The staff, therefore, finds proposed TS 15.4.6.A.6 acceptable.

#### Addition to Table 15.4.1-2, "Minimum Frequency for Equipment and Sampling Tests"

The licensee proposes to add the following new SR, as Item No. 28, in Table 15.4.1-2 "Minimum Frequency for Equipment and Sampling Tests" to verify that the 120-v ac vital instrument buses are available:

<u>Item No.</u>	<u>Test</u>	<u>Frequency</u>
28.	120 VAC Vital Instr. Bus Power Verify Energized*	Shiftly

\*The specified buses shall be determined energized in the required manner at least once per shift by verifying correct static transfer switch alignment and indicated voltage on the buses.

The staff reviewed Item No. 28 and determined that the licensee's proposed method of verifying static transfer switch alignment and voltage on the buses is acceptable. The licensee also proposed that this SR be performed in conjunction with the normal shift record keeping in the control room.

The staff compared the proposed test frequency with that of NUREG-1431 and found that the proposed test frequency of once per shift is more conservative than the weekly requirement in NUREG-1431. The staff, therefore, finds that the proposed testing method and frequency of verifying the availability of the 120-v ac vital instrument buses in Table 15.4.1-2 are acceptable.

### 3.0 STATE CONSULTATION

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

### 4.0 ENVIRONMENTAL CONSIDERATION

These amendments change 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 change a surveillance requirement. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding (58 FR 43939). Accordingly, these amendments meet 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 these amendments.

### 5.0 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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