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U.S. NUCLEAR REGULATORY COMMISSION  
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Gentlemen:

DOCKETS 50-266 AND 50-301  
ADDENDUM TO TECHNICAL SPECIFICATION CHANGE REQUEST 156  
MODIFICATIONS TO TECHNICAL SPECIFICATIONS  
SECTION 15.3.7, SECTION 15.4.6, AND TABLE 15.4.1-2  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On February 26, 1993, we submitted Technical Specification Change Request 156, "Modifications to Technical Specifications Section 15.3.7, Section 15.4.6, and Table 15.4.1-2." The proposed changes added operating conditions, limiting conditions for operation (LCOs), and surveillance requirements for the 120 VAC vital instrument bus system inverters and the diesel fuel oil system. This change request also proposed a surveillance for the diesel generator room exhaust fans and a revision to eliminate the diesel generator daily testing requirement when one diesel generator is inoperable. We also proposed a change to the basis for Section 15.3.7 to support the above changes and to remove an administrative error.

On August 2, 1993, a telephone conference was held between personnel from the Nuclear Regulatory Commission (NRC) Office of Nuclear Reactor Regulation (NRR) and Wisconsin Electric Power Company (WE). The conference call was conducted to provide information on several NRC questions regarding proposed modifications to our Technical Specifications. This letter transmits our responses to the questions which remained unresolved after our discussion.

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ADD 1

Question 1

In our proposed additions to Specifications 15.3.7.A.1 and 15.3.7.A.2 concerning the power source for the 120 VAC vital instrument buses, you asked what we meant by an "alternate inverter."

Response

Our alternate inverters are redundant to the normal instrument bus inverters and are stand-by units. In the Point Beach Nuclear Plant (PBNP) instrumentation system configuration, each instrument channel has a unit-specific, dedicated inverter. A stand-by inverter is provided for each channel which can replace either of the unit-specific inverters as needed. The stand-by inverters have identical qualification and specifications, undergo the same surveillances as the normal inverters, and under our existing Technical Specifications may replace a normal inverter indefinitely. Additionally, NUREG-1431, "WOG Improved Standard Technical Specifications," (STS) does not discriminate between normal and stand-by inverters. Therefore, we are amending our proposed Specifications 15.3.7.A.1.i and 15.3.7.A.2.j as follows:

"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 either their normal or alternate a safety-related inverters."

Likewise, Specification 15.3.7.B.1.i (previously Specification 15.3.7.B.1.j) is changed as follows:

"If one an operating safety-related inverter is rendered inoperable and the associated loads transfer to a non-inverter non-safety-related power source, the loads shall be transferred back to an operable safety-related inverter within 8 hours or the associated unit shall be in hot shutdown within an additional 6 hours and cold shutdown within an additional 36 hours 44 hours of inverter inoperability."

We have reviewed the safety evaluation and the no significant hazards consideration forwarded to you in our February 26, 1993, submittal. Because the above changes are for clarification and do not change the intent of the original proposal, we believe the conclusions contained therein remain valid.

Question 2

In our proposed LCO concerning vital instrument bus power in Specification 15.3.7.B.1, we proposed that if one inverter is rendered inoperable and the associated loads transfer to a non-inverter power source, the loads shall be transferred back to an

operable inverter within 8 hours or be in hot shutdown within an additional 6 hours and cold shutdown within an additional 36 hours. You stated that the STS allows the associated loads to be powered from an alternate power source for only 2 hours and requested our rationale for the 8-hour period. You also asked if our proposed Specification would place the unit in cold shutdown in a maximum of 44 hours (8 + 36 hours).

#### Response

Prior to the installation of our automatic bus transfer modification, our Technical Specifications permitted the loss of a single inverter (and, thus, one instrument bus on one unit) without entering an LCO. The design of PBNP allows for operation with one instrument bus out of service with adequate redundancy in the loads supplied by the instrument bus to assure the initiation of proper protective actions if a second inverter (and, thus, a second instrument bus) would fail. The best demonstration of this capability is in Technical Specifications Tables 15.3.5-2, 15.3.5-3, 15.3.5-4, and 15.3.5-5. In each of these tables, we will not drop below the required minimum number of operable channels with one inverter (and, thus, one instrument bus) out of service. No automatic protective actions are initiated or LCOs entered until a second instrument channel fails.

We recently installed automatic bus transfer capability which automatically shifts the loads from a de-energized instrument bus inverter to the 120 VAC back-up power supply (non-inverter, non-safety-related source) without interruption of power to the bus. The 120 VAC back-up power supply is powered from 480 VAC buses B08/B09 which are supplied from the 13.8 KV system. Although not considered safety related, the B08/B09 switchgear was procured as Class 1E and is seismically qualified. The 13.8 KV system is extremely reliable because it is not subject to safeguards stripping and has the combustion turbine available as a back-up power supply. Thus, after an inverter fails, there is a very high probability that the associated instrument bus will remain energized and provide uninterrupted power to its associated loads. In the unlikely event that the 120 VAC back-up power supply would fail, we would still satisfy the minimum required number of operable channels to operate the plant. A bus supplied from a non-inverter (non-safety related) source does not introduce a failure mode that would prohibit the performance of a safety function. In addition, up to 8 hours may be required to troubleshoot, repair, and shift all loads back to an inverter in an orderly and uninterrupted manner depending on the scope of the problem and personnel availability. Therefore, we still believe that operating up to 8 hours on the non-inverter power source is prudent and technically justified. In addition, this proposed specification will place the unit in cold shutdown in a maximum of 44 hours (8 + 36 hours).

Question 3

In our proposed change to Specification 15.3.7.B.1.g concerning diesel generator testing with one diesel generator inoperable, we proposed that 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. You stated that the STS requires the operable diesel generator to be tested once in a 72-hour LCO period and would therefore consider one diesel generator test every 72 hours acceptable. You also stated that since we presently load test the operable diesel generator to each unit during the operability test and STS only requires starting the diesel generator, you would allow the diesel generator start without a load test if we tested the operable diesel generator every 72 hours.

Response

We acknowledge that the PBNP Technical Specifications require a diesel generator load test while the STS require only a diesel generator start test to ensure operability of the remaining diesel generator when one diesel generator is inoperable. We have historically load tested the operable diesel generator to each unit in order to ensure the ability of the operable diesel generator to start and load. In addition, we believed it was imprudent to operate the diesel engine unloaded because light load operation with low combustion pressures and temperatures promotes accelerated engine degradation. However, after further consideration, we now believe that the duration of the diesel generator operability test is short enough to not cause substantial engine wear if conducted with the diesel generator unloaded. Therefore, we agree with your recommendation to perform a start test without loading the diesel generator in accordance with STS. Hence, we are amending our original proposal to delete the requirement for loading the operable diesel generator to each unit in order to ensure operability.

As stated in our original submittal, guidance contained in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," suggests that the number of diesel generator tests be greatly curtailed because studies show that testing too frequently is counterproductive to safety in terms of equipment availability and degradation. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," recommended that with a diesel generator inoperable, the operability of the other diesel generator should be verified within 24 hours and the inoperable diesel generator restored to operable status within a time period established by the licensee based on the manufacturer's recommendations and previous maintenance and repair experience. In Generic Letter 84-15, the Staff concluded that this allowable out-of-service period for a diesel generator should be in excess of the then-current 72-hour

Technical Specification limit. Generic Letter 84-15 also proposed a 31-day surveillance for diesel generators that are at least 95% reliable and increased surveillance for 90% to 95% reliable diesels.

In our response to Generic Letter 84-15 dated September 28, 1984, we reported that diesel generator G01 was 98% reliable for the previous 100 starts and 100% reliable for the previous 20 starts. Diesel generator G02 was 100% reliable for the previous 100 starts (and, therefore, 100% reliable for the previous 20 starts). As of October 7, 1993, diesel generator G01 was 99% reliable for the last 100 starts, 98% reliable for the last 50 starts, and 95% reliable for the last 20 starts (due to one diesel start malfunction on April 16, 1993). Diesel generator G02 was 97% reliable for the last 100 starts, 96% reliable for the last 50 starts, and 100% reliable for the last 20 starts. As evidenced by the above data, our diesel generators remain highly reliable and remain within the 31-day Generic Letter 84-15 surveillance recommendation.

Subsequent to our conference call, we identified several nuclear plants with Specifications similar to our proposed Specification:

1. Prairie Island (Amendment No. 103 dated 12/17/92)

- 3.7.B.1. One diesel generator may be inoperable for 7 days provided (a) the OPERABILITY of the other diesel generator is demonstrated\* . . . within 24 hours . . .

\* The OPERABILITY of the other diesel generator need not be demonstrated if the diesel generator inoperability was due to preplanned preventive maintenance or testing.

2. Fort Calhoun (Amendment No. 150 dated 3/12/93)

- 2.7.j. Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven days (total for both) during any month, provided there are no inoperable engineered safeguards components associated with the operable diesel generator. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:

- (1) Start the other diesel generator to verify operability, OR
- (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.



3. Monticello (Amendment No. 127 dated 2/15/91)

- 3.3.a From and after the date that one of the diesel generators is made or found to be inoperable, reactor operation is permissible only during the succeeding 7 days provided that the operable diesel generator is demonstrated to be operable within 24 hours.

This test is required to be completed regardless of when the inoperable diesel generator is restored to operability.

The operability of the other diesel generator need not be demonstrated if the diesel generator inoperability was due to preplanned preventive maintenance or testing.

4. Palisades (Original Specification)

- 3.7.i One of the diesel generators may be inoperable for up to 7 days (total for both) during any month, provided the other diesel is started to verify operability, shutdown, and the controls are left in the automatic mode, and there are no inoperable engineered safety feature components associated with the operable diesel generator.

Given the sustained high reliability of our diesel generators and previous NRC guidance and License amendments described above, we believe testing the operable diesel generator once per 72 hours is not warranted. Therefore, we are retaining our original proposed Specification to test the operable diesel once within 24 hours of the start of the 7-day diesel generator LCO when required.

In our original submittal, we proposed that the operable diesel generator must be load tested to each unit within 24 hours of the other diesel generator becoming inoperable, regardless of the cause for the diesel generator becoming inoperable, including preplanned preventive maintenance and testing. After further consideration, we believe that this too could cause unnecessary diesel generator tests to be conducted when a common cause failure mode is proven not to exist. Therefore, we are now proposing the following revised Specification:

- 15.3.7.B.1.g "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 the operable diesel generator ~~shall be~~ are operable and ~~have been were~~ tested within the their required surveillance test

intervals. If one diesel generator is inoperable for reasons other than preplanned preventive maintenance or testing, within 24 hours EITHER:

- 1) Start the other diesel generator to ensure operability, OR
- 2) Ensure the cause for failure of the inoperable diesel generator is not common to the other diesel generator.

The operability of the other diesel generator need not be demonstrated if the diesel generator inoperability was due to preplanned preventive maintenance or testing.

This LCO shall not be allowed in conjunction with e. or f. above."

This Specification is consistent with the guidance in NUREG-1366 and further endorsed by the NRC in Generic Letter 93-05, "Line-Item Technical Specifications Improvements To Reduce Surveillance Requirements For Testing During Power Operation," dated September 27, 1993. Although NUREG-1366 recommends that the operable diesel generator be tested within eight hours, we believe that the 24-hour requirement is conservative and consistent with the 24-hour testing requirement contained within NUREG-1431.

The above changes would, (1) allow, in the event a diesel generator is found inoperable, a 24-hour period before performing the required testing of the other diesel generator and, (2) delete the requirement for additional (and unnecessary) testing of a diesel generator if absence of a common mode failure can be demonstrated, including the deliberate removal from service for preventive maintenance or testing.

We believe that operation in accordance with this proposed change will save in excess of \$100,000 through the end of our current operating license. Therefore, we believe this change should be considered a cost beneficial licensing action marginal to safety.

We have reviewed the safety evaluation and the no significant hazards consideration forwarded to you in our February 26, 1993, submittal. These revisions to our original proposal will bring our Technical Specifications into closer congruence with STS. Although our original submittal proposed a Specification to perform a diesel generator start and load

test and the operability test must be performed on the operable diesel generator prior to taking a diesel generator out of service for maintenance or testing, we believe the conclusions in our original submittal remain valid.

#### Question 4

In our original submittal, we proposed an addition to Specification 15.3.7.B.1 which allows one fuel oil transfer pump to be inoperable for up to 4 hours. If after 4 hours the fuel oil transfer pump is not returned to service, the associated diesel generator shall be declared inoperable and the 7-day LCO shall be entered. You asked if this proposed Specification would allow an extra 4 hours prior to declaring a diesel generator inoperable.

#### Response

The intention of this proposed Specification was to allow an extra 4 hours prior to declaring a diesel generator inoperable. However, after further review, we have concluded that the fuel oil transfer pumps should be considered part of a diesel generator "support system" which must be operable in order for the diesel generators to be operable. Therefore, we will remove this Specification from our original proposal and replace our proposed addition to the bases for Section 15.3.7 with the following definition of diesel generator operability:

"The support systems necessary to be operable to ensure the operability of the emergency diesel generators (EDGs) are the EDG starting air system, EDG fuel oil system, EDG ventilation system, and EDG DC control power.

The EDG starting air system is considered operable when: 1) all three starting air bottles in each bank are operable, 2) the starting air banks can be maintained at a minimum pressure of 165 psig, 3) the air bank crossconnect valve is shut unless bank pressures are being equalized and an operator is stationed at the valve during pressure equalization, and 4) all four starting air motors and their associated valves and relays are operable.

The EDG fuel oil system is considered operable when 1) 11,000 gallons of fuel oil is initially available in the emergency fuel tank to the diesel generators [Because the EDGs consume approximately 205 gallons of fuel per hour when fully loaded, the 11,000 gallon fuel supply in the emergency fuel tank provides sufficient fuel to operate one EDG at design load for more than 48 hours.], 2) the EDG day tank and associated motor-operated fill valve are operable, 3) at least one of the two base-mounted sump



tank fuel oil transfer pumps is operable, and 4) the fuel oil transfer pump associated with the EDG is operable. However, both fuel oil transfer pumps and their associated piping and valves are allowed to be out of service for four hours due to a combined four-hour supply of fuel oil in the diesel base and day tanks which do not require a fuel oil transfer pump for flow to the associated EDG. The pumps may be out of service longer than four hours if an appropriate alternate source of fuel is made available to the diesel generators.

The EDG ventilation system is considered operable when diesel room temperature can be maintained  $\leq 120^{\circ}\text{F}$  with the diesel engine operating at full load. Temperature will be maintained  $\leq 120^{\circ}\text{F}$  if 1) all gravity-operated louvers are operable, and 2) both diesel room exhaust fans are operable OR one diesel room exhaust fan is operable and outside air temperature is  $\leq 80^{\circ}\text{F}$ .

Normal DC control power must energize all DC circuits for the associated EDG to be operable. The following DC circuits are required to be powered for the associated EDG to be considered operable:

<u>G-01</u>	<u>Circuit</u>	<u>G-02</u>
D18-20	Start 2	D16-20
D12-01	Control	D14-01
D12-11	Start 1	D14-11
D12-13	Annunciator	D14-13
D11-28	Field Flash	D13-28"

Because of this addition to the bases, we are rescinding our proposed change to Specifications 15.3.7.A.1.f and 15.3.7.A.2.g which required the diesel fuel oil supply system associated with each diesel generator to be operable to make the reactors critical. We have deleted that item from both Specifications as follows:

"A fuel supply of 11,000 gallons is available; and both diesel generators are operable. ~~Both diesel generators are operable, and:~~

- ~~1) The fuel oil supply system associated with each diesel generator is operable;~~
- ~~2) A fuel supply of 11,000 gallons is available."~~

Therefore, this Technical Specification Change Request will not change Specifications 15.3.7.A.1.f and 15.3.7.A.2.g.

We have reviewed the safety evaluation and the no significant hazards consideration forwarded to you in our February 26, 1993,

submittal. Because the above changes are administrative and do not change the intent of the original proposal, we believe the conclusions contained therein remain valid.

Question 5

We proposed an additional Specification 15.4.6.A.5 to verify the operability of the diesel generator room exhaust fans on a monthly frequency. You indicated that the STS considers the diesel generator room exhaust fans as part of a "support system" and asked why we specifically identified this equipment in the Specification.

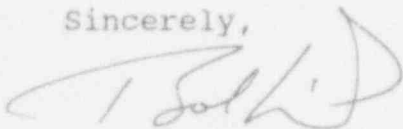
Response

We specified the operability of the diesel generator room exhaust fans for clarification purposes only. After further review, we agree that the diesel generator room exhaust fans should be considered part of a "support system." Therefore, we removed this specification from our original proposal and added reference to the diesel generator room ventilation system in the bases for Section 15.3.7. We have reviewed the safety evaluation and the no significant hazards consideration forwarded to you in our February 26, 1993, submittal. Because these revisions are administrative and do not change the intent of the original proposal, we believe the conclusions contained therein remain valid.

Marked-up Technical Specifications pages are enclosed.

Please contact us if you have any questions.

Sincerely,



Bob Link  
Vice President  
Nuclear Power

DAW/jg

Enclosures

cc: NRC Regional Administrator  
NRC Resident Inspector  
Public Service Commission of Wisconsin

Subscribed and sworn before me on  
this 30<sup>th</sup> day of November 1993.



Notary Public, State of Wisconsin

My commission expires 10-27-93.