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VPNPD-93-084

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April 9, 1993

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Gentlemen:

DOCKET 50-301
REQUEST FOR ENFORCEMENT DISCRETION
MONTHLY TESTING REQUIREMENTS FOR REACTOR PROTECTION
AND SAFEGUARDS AND NUCLEAR INSTRUMENTATION SYSTEMS
POINT BEACH NUCLEAR PLANT, UNIT 2

The purpose of this letter is to document the basis for the request from Wisconsin Electric Power Company, licensee for Point Beach Nuclear Plant, for enforcement discretion for a 30-day period from certain line item requirements in Point Beach Nuclear Plant Technical Specification Table 15.4.1-1, "Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels," and Table 15.4.1-2, "Minimum Frequencies for Equipment and Sampling Tests." This request for enforcement discretion is made pursuant to the guidelines of Section VII of the enforcement policy (10 CFR Part 2, Appendix C), as recently modified in the March 17, 1993, Federal Register Notice (58 FR 14308).

Exemption from these requirements will require completion of the affected line items on or before May 16, 1993.

REQUIREMENT FOR WHICH ENFORCEMENT DISCRETION IS REQUESTED

Section 15.4, "Surveillance Requirements," of the Point Beach Nuclear Plant (PBNP) Technical Specifications (TS) outlines the requirements for testing, calibrating, or inspecting those systems or components which are required to assure that operation of the plant will be as prescribed in the preceding sections (15.1, 15.2 and 15.3). Specifically, TS Table 15.4.1-1, "Minimum Frequencies for Checks, Calibrations, and Tests of Instrument Channels," specifies the minimum frequencies for instrument channel checks, calibrations, and tests. Additionally, TS 15.4 states that

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specified surveillance intervals may be adjusted up to 25% to accommodate normal test schedules and major events such as refueling.

The table specifies monthly test requirements for reactor protection and engineered safeguards system instrumentation. At one time, 30-day extension to the present test interval is being requested for the following line items from TS Table 15.4.1-1:

No. Channel Description

- 1 Nuclear Power Range
 - 4(1) Reactor Coolant Temperature, Overtemperature Delta T
 - 4(2) Reactor Coolant Temperature, Overpower Delta T
 - 5 Reactor Coolant Flow
 - 6 Pressurizer Water Level
 - 7 Pressurizer Pressure
 - 8 4 KV Voltage
 - 11 Steam Generator Level
 - 12 Steam Generator Flow Mismatch
 - 18 Reactor Containment Pressure
 - 24 Containment Pressure
 - 25 Steam Generator Pressure
 - 26 Turbine First Stage Pressure
 - 33 PORV Operability
- and TS Table 15.4.1-2:

No. Channel Description

- 26(a) Reactor Trip Breakers

CIRCUMSTANCES SURROUNDING THE SITUATION

PBNP Units 1 and 2 are the only baseload units serving the Wisconsin Electric (WE) electrical distribution system in northeast Wisconsin. Kewaunee Nuclear Power Plant (KNPP), located approximately five miles north of PBNP, is the baseload plant serving the Wisconsin Public Service electrical distribution system in northeast Wisconsin. Depending on system loading, loss of all three units could result in a degraded voltage condition sufficient to divorce safeguards buses at both sites from off-site power. Additionally, loss of another large unit serving the distribution system could result in blackout conditions in some areas.

On March 28, 1993, at 0145 hours, Point Beach Unit 2 tripped due to problems associated with periodic turbine surveillance testing. This event will be documented in LER 93-002 (Unit 2) to be submitted by April 27, 1993. At the time of the trip, PBNP Unit 1 and KNPP were shutdown for their annual maintenance and refueling outages. A degraded voltage condition was created due to the absence of any

large generating capacity on this portion of the distribution system. Voltage degradation as seen on the PBNP 4160 volt vital buses indicated a voltage level of 4100 volts. PBNP Unit 2 was returned to service later on March 28, 1993, and was able to generate 100 MW by 0700 hours on Monday, March 29, 1993, when system loading increased significantly.

The trip of Unit 2 on March 28 demonstrated the sensitivity of the 345 Kv distribution system to the availability of the PBNP and KNPP units. On March 29, 1993, the Manager-PBNP directed that any testing which places Unit 2 in a condition where a single failure or spurious signal would trip Unit 2, be reviewed, and delayed if possible, until after KNPP or PBNP Unit 1 returns to service. KNPP is scheduled to return to service on April 16, 1993. PBNP Unit 1 is scheduled to return to service on May 8, 1993.

On March 31, 1993, in accordance with the Manager-PBNP directive, the PBNP Instrumentation and Control (I&C) group identified that the monthly reactor protection analog and logic channel surveillance tests, required to be completed during this period, fall into this "sensitive" category. In order to perform these tests, Unit 2 must be placed in a condition where one spurious signal or instrument failure would result in a reactor trip. These tests and their due dates are:

ICP 2.1, "Reactor Protection and Safeguards Analog Channels I Through IV"	April 10, 1993
ICP 2.3, "Reactor Protection System Logic Monthly Surveillance Test"	April 9, 1993
ICP 2.7, "Nuclear Instrumentation Power Range Channels Monthly Surveillance Test"	April 9, 1993

These tests affect the following line items from TS Table 15.4.1-1: 1, 4, 5, 6, 7, 8, 11, 12, 18, 24, 25, 26, and 33 and from TS Table 15.4.1-2: 26(A). The 25% time extension provision of TS 15.4 allows an approximately one week delay of these due dates. Hence, performance of ICP 2.3 and 2.7 could be delayed until April 16, 1993, and performance of ICP 2.1 could be delayed until April 17, 1993. Although KNPP is scheduled to return to service on April 16, 1993, the 25% time extension does not provide sufficient margin because of the time required to complete the tests and the possibility of delays in KNPP's return to service.

The I&C Group, as well as the Site Engineering and the Regulatory Services Group, discussed various options regarding performance of this testing. The options considered were:

1. Conduct the tests as scheduled using additional precautions and controls as necessary to enhance human performance in the conduct of surveillance testing.
2. Conduct the testing at a time (non-peak load) when the loss of Unit 2 would minimize the affect on the 345 Kv distribution system.
3. Request relief from the NRC for conduct of monthly tests in the form of either an exigent Technical Specification Change Request, or a request for Enforcement Discretion.

The Wisconsin Electric System Control Center Manager was contacted to discuss the consequences of a loss of Unit 2 on the 345 Kv system. The consequences of a loss of Unit 2 during a time period other than when the actual trip took place (early hours of Sunday, March 28, 1993) could be significant. The availability of Unit 2 when both Unit 1 and KNPP are off-line is significant in regard to voltage support for this portion of the WE distribution system, as well as the distribution system of our neighboring utility, Wisconsin Public Service (WPS). This availability is especially significant when system load is high (i.e., on weekdays and, to a lesser extent, Saturday). Keeping Unit 2 on-line under these conditions is extremely desirable from two viewpoints, voltage support, and availability of replacement energy.

In terms of voltage support, the loss of Unit 2 on a weekend would result in a depressed voltage condition in the WE system and WPS systems to the extent seen on the March 28, 1993 trip, and on weekdays to a much greater extent, depending on the configuration of the system with respect to loading and available generation. The WE System Control Center indicated that a loss of Unit 2 during normal weekday loadings will likely result in a degraded voltage situation to the extent where PBNP and KNPP safeguards electrical buses would divorce from off-site power. The depressed voltage condition probably would not result in blackout to any portion of the system, but would put the system in a configuration such that any other problem could have that effect.

Even with significant precautions and additional controls applied during the surveillance testing, a reactor trip due to a spurious signal or equipment failure could not be anticipated or prevented. Because of the consequences of a Unit 2 trip, Option 1 was not pursued.

The least risk time of the week to have a trip of Unit 2, from a voltage support perspective, is between midnight on Saturday and noon on Sunday when loading is minimal and there is enough advance time to arrange for replacement power. Due to human factors considerations associated with testing during odd hours, coupled with the consequences of a loss of Unit 2, option 2 was not pursued. We,

therefore, considered either an exigent change to the Technical Specifications or a request for enforcement discretion regarding the affected monthly tests.

Wisconsin Electric submitted Technical Specification Change Request (TSCR) 150, "Quarterly Testing of Reactor Protection and Safeguard Circuits," on January 29, 1992. TSCR 150 proposes a change in testing periodicity for several line items of TS Table 15.4.1-1 from monthly to quarterly. TSCR 150 was based on Westinghouse Owner's Group Document WCAP-10271, "Evaluation of Surveillance Frequencies and Out-of-Service Times for the Reactor Protection Instrumentation," which was submitted on February 3, 1983 and supplemented in October 1983. WCAP-10271 evaluated the acceptability of decreasing the test frequency from monthly to quarterly. The NRC staff approved WCAP 10271 in safety evaluations dated February 21, 1985, February 22, 1989, and April 30, 1990.

The option of accelerating the review timeframe of TSCR 150 from normal means to exigent means was not pursued following a review of the specifics of the TSCR 150. The TSCR stated:

"...we have reviewed reactor protection and safeguards bistable calibration data over the period of June 1985 to June 1990. For most cases, we have determined that the increased total setpoint drift over the quarterly interval would not result in increased number of Technical Specification violations. In those incidents where a Technical Specification setpoint could be violated due to instrument drift, plant setpoint and/or instrumentation calibration changes will be implemented as necessary prior to increasing the test interval."

This paragraph states our commitment to review, in greater detail, those functions which were questionable with respect to quarterly testing. If the review demonstrates that any functions do not have sufficient conservatism with the existing setpoint to prevent a Technical Specification violation due to setpoint drift, the setpoint will be modified prior to implementing the quarterly testing frequency.

It is estimated that approximately one month will be required to properly perform the required setpoint reviews. Additionally, if any setpoints must be changed, Unit 2 would need to be placed in the same condition as when performing the monthly surveillance tests, namely, one spurious signal or instrument failure away from a reactor trip.

In the event KNPP or PBNP Unit 1 have not been returned to service by the time the surveillance testing is next due, the issue will be reviewed. As a contingency, setpoint calculations to support implementing TSCR 150 will begin immediately.

Additionally, TSCR 150 defines new TS Table 15.4.1-1 Line Item 43 "Reactor Protection System and Emergency Safety Actuation System Logic." This test is to be conducted on a staggered basis, in that each train will be tested every 62 days. The issuance of amendments resulting from TSCR 150 therefore would not be sufficient to allow us to not conduct the reactor protection logic testing within this period of concern. Thus, the option of enforcement discretion is being pursued.

The background information for the policy statement modification (outlining modification of its enforcement policy) as written in 58 FR 14309 states:

"The Commission believes that exercise of enforcement discretion ...is warranted to avoid unnecessary plant transients, to reduce both operational and shutdown risks, and to avoid unnecessary plant delays in start-up where the course of action involves minimal or no safety impact and the NRC staff is clearly satisfied that the exercise of discretion is consistent with the public health and safety. Exercise of enforcement discretion is appropriate only where the exercise of enforcement is temporary and non-recurring."

We believe that the request for a one-time relief from the monthly testing requirements of TS Table 15.4.1-1, Line Items 1, 4, 5, 6, 7, 8, 11, 12, 18, 24, 25, 26, and 33; and from TS Table 15.4.1-2, Line Item 26(a), is justified, in view of these words, due to the risk involved in the loss of Unit 2 at this point in time, until a return to power of either KNPP or PBNP Unit 1.

In an October 16, 1991 letter to the NRC, WE requested a Temporary Waiver of Compliance from several line items of PBNP Technical Specifications Table 15.4.1-1. Relief was requested from the monthly testing requirements because of a situation similar to the one for which this enforcement discretion is requested. PBNP Unit 1 Power Range Detector N44 was experiencing spiking problems and required replacement, PBNP Unit 2 was shutdown for its annual maintenance and refueling outage, and KNPP tripped off-line on October 12, and did not return to service until October 13. The regional power distribution system was in an undesirable condition, relative to electrical system stability, to support a Unit 1 shutdown to replace Power Range Detector N44. As the monthly surveillance tests for these TS Table 15.4.1-1 line items were due in this timeframe, the NRC granted the temporary waiver of compliance in a letter dated October 17, 1991, in order to facilitate additional time for troubleshooting of N44 and to allow us to choose an optimal time to replace Detector N44.

COMPENSATORY ACTIONS

The restriction on all testing which places Unit 2 in a condition where a single failure or spurious signal would trip Unit 2 will remain in effect until the return of either KNPP or PBNP Unit 1 to on-line status. The expected return to service date for KNPP is April 16, 1993. The expected return to service date for PBNP Unit 1 is May 8, 1993.

SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES

With the exception of the overtemperature delta T function, a review of the June 1985 to June 1990 reactor protection and safeguards bistable calibration data clearly indicates that a one-month extension of the test interval should not result in non-conservative settings due to instrument drift. Based on actual data observed during the October, 1991 Temporary Waiver of Compliance period for the overtemperature delta T function, we are confident that the one-month extension of the test interval should not result in non-conservative settings due to instrument drift for this function.

The reactor trip breakers (RTBs) at PBNP are Westinghouse DB-50, low voltage, metal clad switchgear, with undervoltage trip attachments. The enclosures have been modified to have the shunt trip auxiliary relays installed as a result of the Salem Nuclear Plant Anticipated Transient Without Scram (ATWS) event.

There have been no failures of the Unit 2 RTBs to trip in the history of PBNP. One of the Unit 2 RTBs experienced a series of failures to close in late 1991 to early 1992. When attempting to close the breaker, it would close and immediately trip open. The breaker was quarantined until the cause of the problem was determined and corrected. The failures were attributed to an intermittent coil connection on an undervoltage trip attachment (UVTA). The UVTA was replaced and the RTB has been successfully tested each month for one full year.

The only failure of a Unit 1 RTB to trip occurred during testing of the shunt trip device through actuation of the shunt trip auxiliary relay in the fall of 1992. The failure to trip was due to blowing of one of the breaker control power fuses during the test. The breaker UVTA was verified to be operable to trip the breaker.

Control power fuses on this Unit 1 RTB have also blown when attempting to close the breaker. In 1988, control power fuses were blown when attempting to close the breaker on at least two occasions. Westinghouse engineering personnel traced the problem to foreign material left from the replacement of a wiped needle bearing in 1976 (improper cleanup from the actual bearing). In the fall of 1992, on two occasions, the control power fuses blew when attempting to close the breaker. The breaker was shipped to Westinghouse for full

refurbishment in January, 1993 and returned in March, 1993. During shipment to Westinghouse, the breaker was dropped and experienced damage. Therefore, Westinghouse could only estimate that the cause of the RTB blowing fuses on attempting to close was due to internal misalignments which caused excessive frictional forces, causing the closing coil to draw more than rated current over numerous cycles. The failure of the RTB to trip during testing in the fall of 1992 was attributed to fuse degradation during the actual testing.

There have been no failures of the shunt trip auxiliary relays associated with the RTBs. They are tested monthly along with the RTBs. The relays are Potter & Brumfield, MDR series, rotary relays and are scheduled to be replaced in the fall of 1993 due to the concern of the potential failure of these relays. There have been no failures of the manual reactor trip pushbutton circuits to trip the RTBs independently by undervoltage or shunt trip. This function is tested each refueling outage.

Therefore, operation of PBNP during this period of enforcement discretion will not adversely affect the health and safety of employees and the public. It will not result in the operation of PBNP in a condition adverse to safety.

Performance of the monthly test of the reactor protection system could result in an inadvertent trip of Unit 2. With the present condition of the Wisconsin Electric Power Company electrical system, this could lead to a degraded grid voltage condition, which could result in a loss of off-site power to the safeguards buses at both PBNP and KNPP. This is undesirable as both PBNP Unit 1 and KNPP are in cold shutdown for their annual maintenance and refueling outages.

JUSTIFICATION FOR THE DURATION OF THE ENFORCEMENT DISCRETION

The requested 30-day period for enforcement discretion will allow a one-time relief from the upcoming monthly tests of the reactor protection and safeguards circuits. The tests will be performed within two weeks of the return to full power of either KNPP or PBNP Unit 1 following their annual maintenance and refueling outages, but no later than May 16, 1993. The return to service of either unit will provide a more stable electrical system and should prevent a potential loss of off-site power to the PBNP and KNPP safeguards buses in the unlikely event of a trip of Unit 2 during the testing.

Approval of the previously submitted amendment request along with any necessary setpoint changes should provide the flexibility necessary to preclude this situation from recurring.

SIGNIFICANT HAZARDS CONSIDERATIONS

We have reviewed this request for significant hazards considerations. In accordance with 10 CFR 50.92, a significant hazards consideration is created if the requested action:

1. Significantly increases the probability or consequences of an accident previously evaluated;
2. Creates the possibility of a new or different type of accident; or
3. Reduces the margin of safety.

Our evaluation against each of these criterion follows:

Criterion 1

Operation of PBNP in accordance with the provisions of this requested enforcement discretion does not result in a significant increase in the probability or consequences of any accident previously evaluated.

The requested 30-day extension essentially allows a one-time change in the frequency of reactor protection and safeguards circuits testing from monthly to once every two months. As discussed above, a change in the test frequency for reactor protection and safeguards circuits from monthly to quarterly meets the criteria evaluated in WCAP-10271 and supplements which has been accepted by the NRC. The hazards consideration for the change in frequency is founded by the following hazards consideration for the change from monthly to quarterly.

Implementation of the proposed change in testing frequency from monthly to quarterly is expected to result in an acceptable increase in the total Reactor Protection System (RPS) yearly unavailability. This increase, due primarily to less frequent surveillance, results in a similar magnitude increase in the probability of a core melt resulting from an Anticipated Transient Without Scram (ATWS) and also results in a slight increase in the Core Damage Frequency (CDF) due to the slight increase in the Engineered Safety Feature Actuation System (ESFAS) unavailability.

Implementation of the proposed change in testing frequency from monthly to quarterly is expected to result in significant reduction in probability of a core melt from inadvertent reactor trips. This reduction in inadvertent trips is primarily attributable to the less frequent surveillance.

The reduction in the core melt frequency is sufficiently large to counter the increase in the core melt probability due to an ATWS event resulting in an overall reduction in the core melt probability.

The values presented in the WCAP and supplement for the increase in CDF were verified by Brookhaven National Laboratory as part of an audit and sensitivity analysis for the NRC staff. Based on the small value of the increase as compared to the uncertainty in the CDF, the increase is considered acceptable.

The extension of the test interval to once every two months should not result in any non-conservatism due to instrument drift. This one-time exemption from monthly testing should not result in an increase in the severity or consequences of an accident previously evaluated. Implementation of the proposed change affects the probability of failure of the RPS, but does not alter the manner in which protection is afforded or the manner in which limiting criteria are established.

Criterion 2

Operation of PBNP in accordance with the provisions of this requested enforcement discretion will not create the possibility of a new or different type of accident than any accident previously evaluated.

The one-time, 30-day extension of the monthly reactor protection and safeguards testing does not result in a change in the manner in which the Reactor Protection System and Engineered Safeguards System instrumentation provides plant protection or in which the RPS and ESFAS function. The likelihood or probability of the RPS and ESFAS functioning improperly is affected as described under Criterion 1.

Therefore, operation in accordance with the provisions of this requested enforcement discretion does not create the possibility or probability of a new or different type of accident from any accident previously evaluated.

Criterion 3

Operation of PBNP in accordance with the provisions of this requested enforcement discretion will not result in a significant reduction in a margin of safety.

The one-time, 30-day extension of the monthly reactor protection and safeguards testing does not alter the manner in which safety limits, limiting safety system setpoints, or limiting conditions for operation are determined. The impact of a reduced testing frequency, other than as addressed above, is to allow a longer

time interval over which instrument uncertainties may act. Instrument drift is not expected to result in non-conservative setpoints during the 30-day extension.

The proposal of the one-time, 30-day extension of the monthly reactor protection and safeguards testing is expected to result in an overall improvement in plant safety by minimizing the risk of a Unit 2 trip, with subsequent loss of off-site power to the safeguards buses at both PBNP and KNPP.

This analysis demonstrates that the requested enforcement discretion does not involve a significant increase in the probability or consequences of a previously evaluated accident, does not create the possibility of a new or different type of accident than any accident previously evaluated, and does not involve a significant reduction in a margin of safety. Therefore, operation of the Point Beach Nuclear Plant in accordance with the requested enforcement discretion does not involve a significant hazards consideration.

ENVIRONMENTAL CONSEQUENCES

We have determined that operation in this condition does not involve a significant hazards consideration, authorize a significant change in the types or total amounts of any effluent release, or result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, we conclude that this request meets the categorical exclusion requirements of 10 CFR 51.22(c)(9) and that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared.

STATE NOTIFICATION STATEMENT

We will notify the Public Service Commission of Wisconsin and the appropriate State of Wisconsin officials of the requested enforcement discretion by copy of this letter in accordance with 10 CFR 50.91(b).

SUMMARY OF COMMUNICATIONS AND APPROVALS

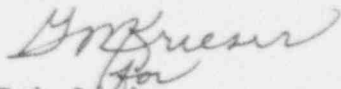
The PBNP Manager's Supervisory Staff (on-site nuclear safety review committee) met and discussed this issue at 0800 hours on April 8, 1993, concurred with the decision to request this enforcement discretion, and concurred with the content of this request.

Telephone conferences between the Nuclear Reactor Regulation (NRR) offices, NRC Region III, PBNP, and WE Corporate offices were held at 1300 hours and 1530 hours on April 8, 1993 to discuss this request for enforcement discretion. Verbal approval of this request has not been granted pending NRC review of this letter.

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If you have any questions or require additional information, please contact us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Bob Link", with a small "for" written below it.

Bob Link
Vice President
Nuclear Power

KVA/jg

cc: NRC Resident Inspector
NRC Regional Administrator