



Wisconsin Electric POWER COMPANY
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August 30, 1985

VPNPD-85-282
NRC-85-93

Mr. H. R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Attention: Mr. Edward J. Butcher, Acting Chief
Operating Reactors, Branch 3

Gentlemen:

DOCKETS 50-266 AND 50-301
RESOLUTION OF REGULATORY GUIDE 1.97 COMMITMENTS
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Generic Letter 82-33 dated December 17, 1982, "Supplement 1 to NUREG-0737 Requirements for Emergency Response Capability," required licensees to submit a report describing how they intend to meet the requirements of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident." Our September 1, 1983 letter to you transmitted the requested report regarding the post-accident monitoring capability at Point Beach. Your January 4, 1985 letter to Mr. C. W. Fay transmitted an interim report prepared by EG&G Idaho, Incorporated documenting your initial review of our Regulatory Guide 1.97 submittal. This letter transmits a response to each of the open items identified in your report.

The conclusion section of the interim report identified eleven open items for which Point Beach deviates from the guidance of Regulatory Guide 1.97 and did not, in your view, fully justify the deviation. The enclosure to this letter provides our response to each of these open items and a proposed schedule for any additional instrumentation installations and upgrades to which we are committed, beyond those identified in our September 1, 1983 submittal. The additional upgrades are planned to be completed on both units at Point Beach by the end of the Unit 2 fall 1987 refueling outage.

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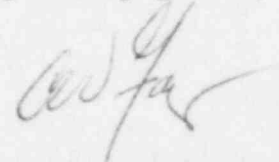
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In a related matter, the Crosby lift indicating switch assemblies (LISAs) installed on the pressurizer safety valves at Point Beach were previously committed by our September 1, 1983 letter to be installed and environmentally qualified by May 1985. The LISAs were added to the PBNP Master List of Electrical Equipment to be Environmentally Qualified in accordance with paragraph (b)(3) of NRC rule 10 CFR 50.49 (i.e., "Certain post-accident monitoring equipment") based on the recommendations of Regulatory Guide 1.97. As discussed in our August 26, 1985 letter to Mr. N. J. Palladino, Chairman of the Nuclear Regulatory Commission, the environmental qualification of the LISAs has been delayed due to test complications and required design modifications to the LISAs and associated electrical interfaces for reasons beyond our control. If the deadline extension requested in our August 26, 1985 letter is not granted in a timely manner, we intend to administratively remove the LISAs from the PBNP "Master List," until they are modified and environmentally qualified in accordance with the schedule established for Regulatory Guide 1.97 installations or upgrades at Point Beach. We plan to complete the required modifications and qualification documentation for the LISAs by the end of the Unit 2 fall 1986 refueling outage or November 30, 1986, whichever is earlier.

We would be pleased to answer any questions you have regarding this matter or to meet with your staff to discuss this information in greater detail.

Very truly yours,



Vice President-Nuclear Power

C. W. Fay

RKH/cj

Enclosure

Copy to NRC Resident Inspector

August 30, 1985

ENCLOSURE

RESPONSE TO OPEN ITEMS ON NRC INTERIM REPORT REGARDING
CONFORMANCE TO REGULATORY GUIDE 1.97 AT
POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2

1. Comment: "Neutron flux--seismic qualification for the source and intermediate range neutron flux monitors should be performed by the licensee; environmental qualification needs to be addressed in accordance with 10 CFR 50.49 (Section 3.3.1)."

Response: Wisconsin Electric still maintains that source and intermediate range neutron flux indication are not required for LOCA/HELB mitigation. Reactivity control for safe shutdown is automatically achieved and maintained by reactor scram and the injection of boric acid into the RCS by the safety injection system following a postulated LOCA/HELB. Reactor scram is verified as an immediate action by the operator in the control room including the use of control rod bottom signals, which are used before a harsh environment is expected to significantly degrade the rod position indication signals. The proper operation of the safety injection system is monitored and verified through the use of environmentally and seismically qualified instrumentation. The reactor scram and boration by the safety injection system ensures reactor core shutdown with significant margin under all postulated accident conditions. In addition, the RCS soluble boron content can be verified by analysis of RCS grab samples, which are taken using environmentally and seismically qualified valves. The RCS soluble boron content is not expected to change rapidly, if at all, following the initial boration during the ECCS injection phase of an accident. Therefore, periodic analysis of RCS samples would detect any significant changes in boron concentration to ensure adequate shutdown margin.

Furthermore, Wisconsin Electric maintains that neutron flux monitoring is a backup means of verifying automatic reactor shutdown and detecting and verifying reactivity control and, as such, should be classified as no higher than a Category 2 instrument at Point Beach. Therefore, redundant instruments are not required for each unit and a single qualified instrument would be adequate. Wisconsin Electric intends to install one channel of additional neutron flux monitoring per unit, which will be environmentally and seismically qualified. This channel will consist of a neutron fission chamber system capable of monitoring the entire range from approximately $1.0E-7$ to 100 percent rated reactor power. The following information is provided for this planned instrumentation consistent with the general notes provided with our September 1, 1983 submittal:

Purpose: Detection and Verification of Reactivity Control
Variable: Neutron Flux
Plant Tag No.: Not assigned yet
Instrument Range: 1.0E-7% to 100% rated reactor power
Environmental Qualification: Yes
Seismic Qualification: Yes¹
QA: Yes
Single Failure Criteria: No
Power Supply: 1E
Display Location: Control Room Board
Schedule: Unit 2 Fall 1987 Refueling Outage

These instruments will be added to the PBNP Master List of Electrical Equipment to be Environmentally Qualified only when they are installed, placed in service, and the environmental qualification documentation is completed in accordance with the above schedule. Therefore, we believe that the planned instrumentation meets the intent of Regulatory Guide 1.97.

2. Comment: "Effluent radioactivity--noble gas effluent from condenser air removal system exhaust--the licensee should supply the range of the new installation. Any deviation from the Regulatory Guide 1.97 recommended range should be justified (Section 3.3.5)."

Response: The high-sensitivity NaI crystal detectors for noble gas monitoring of our condenser air ejector gases were mounted in pipe wells in April 1984 for both units. The most recent calibrated range of these detectors was as follows:

Tag No.	Range (uCi/cc)	
	Lower Limit	Upper Limit
1-RE215	1.1 E-07	3.8 E-03
2-RE215	8.1 E-07	1.6 E-02

The recommended range from Regulatory Guide 1.97 is 1.0E-6 to 1.0 E-2 uCi/cc. The Unit 2 monitor covers the entire instrument range. The Unit 1 monitor is close to meeting the recommended range. Since the discharge of the air ejector exhaust from each unit goes to a combined delay duct and then is discharged out the auxiliary building exhaust stack, which both have additional radioactivity monitors, we believe that we meet the intent of Regulatory Guide 1.97 regarding instrument range.

¹The seismic qualification of these neutron flux monitors is planned to be addressed in accordance with the response to Unresolved Safety Issue A-46, "Seismic Qualification of Equipment in Operating Reactors." Wisconsin Electric is an active member of the Seismic Qualification Utility Group (SQUG), which has been working with the NRC Staff to resolve this issue in a reasonable manner. The NRC expects to issue the final requirements on seismic qualification to licensees by March 1986. Wisconsin Electric plans to meet these requirements in accordance with a Generic Implementation Program being developed by SQUG with review by the NRC.

3. Comment: "Accumulator tank level--the licensee should commit to the installation of Category 2 instrumentation with the recommended range (10 to 90 percent volume) for this variable; environmental qualification should be addressed in accordance with 10 CFR 50.49 (Section 3.3.8)."

Response: The safety injection accumulators are passive devices required only in the extremely unlikely event of a large-break LOCA or steam-line break. The PBNP Technical Specifications require tight control of the initial operating water level and pressure in the accumulators. Since there is a direct correlation between accumulator pressure and level during an accident and the instruments are only used to monitor operation of a passive device, the qualified pressure instrument is judged to be adequate for this monitoring function. The cost of installation of a qualified level monitor of the required range in financial resources, engineering resources, radiation exposure, possible plant down time, and reduced reliability of an ASME code vessel are judged to far exceed the minimal benefit of increased water level range. We believe the existing qualified pressure instruments meet the intent of Regulatory Guide 1.97. Therefore, Wisconsin Electric does not intend to install a new accumulator level instrument just to meet the Regulatory Guide 1.97 recommendations.

4. Comment: "Accumulator isolation valve position--environmental qualification needs to be addressed in accordance with 10 CFR 50.49 (Section 3.3.9)."

Response: Environmental qualification of the accumulator isolation valve position is addressed by internal documentation indicating that this item is not within the scope of 10 CFR 50.49 and does not need to be environmentally qualified. The valve operators including position indication are administratively tagged out with power removed during normal operation. These valve operators and indicators are not on the PBNP "Master List of Electrical Equipment to be Environmentally Qualified," which was reviewed by the NRC during an IQ audit conducted July 22 - 26, 1985. No problems with the Master List were identified during this audit.

5. Comment: "Pressurizer heater status--the licensee should install Category 2 ammeters for indication of pressurizer heater status (Section 3.3.12)."

Response: The primary indications of pressurizer heater status in the control room are the breaker position indication lights for the heater groups and the response of the parameter being controlled, namely pressurizer pressure or reactor coolant system wide range pressure. If the response of either of

these parameters indicate a problem with heater operation, an operator can be sent to local power panels located outside the control room. These panels (one for each of the five pressurizer heater groups on each unit) have individual breakers for each set of three heater elements. The control group of heaters has ammeters as well as breakers. The panels are located in a mild environment and are not required to be environmentally qualified. All heater groups are not expected to fail or lose power simultaneously, but the power panel arrangement allows troubleshooting and possible repair of individual heater groups or power sources. Note that pressurizer heaters are not required to mitigate the effects of design-basis accidents at Point Beach. Therefore, the indications available at the local power panels are judged adequate to meet the intent of Regulatory Guide 1.97 regarding pressurizer heater status.

6. Comment: "Quench tank temperature--since the tank design pressure and rupture disk release pressure is 100 psig, instrumentation with a range including 338°F should be provided (Section 3.3.13)."

Response: Wisconsin Electric intends to change the range of the temperature monitors for the pressurizer relief tanks on both Point Beach units (1&2-TE439) from 0-300°F to 50-350°F. This new range complies with the recommendations of Regulatory Guide 1.97. This modification is planned to be completed during the scheduled refueling outages for both units in 1987, which allows sufficient lead time to specify and procure the required components.

7. Comment: "Heat removal by the containment fan heat removal system--the licensee should install Category 2 instrumentation as recommended by Regulatory Guide 1.97 (Section 3.3.14)."

Response: Wisconsin Electric maintains that the use of redundant, qualified containment atmosphere and sump temperature monitors and containment pressure monitors is adequate to monitor the operation of containment cooling systems including the containment emergency fan coolers. The containment spray system is not expected to be used except in the extremely unlikely event of a large-break LOCA or steam line break which results in containment pressure greater than 25 psig, and even then only for a short time, so that the containment emergency fan coolers would be the cooling system usually operating during and following a postulated accident. The above instrumentation is, therefore, monitoring the operation of the fan coolers most of the time during and following a design-basis accident. The overall containment temperature and pressure are

the most critical parameters to monitor the effectiveness of containment cooling systems. In our judgement, the cost in terms of financial resources, engineering resources, and radiation exposure is not worth the small incremental benefit from upgrading the numerous Category 3 instruments on the fan cooler system to Category 2. Therefore, Wisconsin Electric believes the existing combination of instruments meets the intent of Regulatory Guide 1.97 and does not intend to upgrade these instruments.

8. Comment: "Containment atmosphere temperature--the licensee should provide the recommended range, or justify deviating (Section 3.3.15)."

Response: Regulatory Guide recommends a range of 40°F to 400°F, whereas the containment atmosphere temperature instruments at Point Beach have a range of 50 to 350°F. The lower range limit of 50°F is adequate since the containment is always maintained above 50°F, even during shutdowns in the coldest months. The temperature during normal power operation is typically 100°F or higher. The temperature would certainly stay above 50°F during and following a steam line break accident or LOCA. The upper range limit is adequate because the design temperature of the containment from a design-basis large-break LOCA is 280°F. A postulated steam line break accident inside containment may result in superheated steam temperatures higher than 280°F, until the containment spray system starts within one minute of the start of the accident, but the operators will not be concerned with this temperature instrument during the first minute of a steam line break accident. In addition, a best-estimate containment temperature analysis of the R. E. Ginna plant containment, which is similar to Point Beach shows a peak containment temperature during a steam line break of 340°F. These results were documented by the NRC in Figure 1 of NUREG-0458, "Short Term Safety Assessment on the Environmental Qualification of Safety-Related Electrical Equipment of SEP Operating Reactors," dated May 1978. The Regulatory Guide 1.97 upper range limit of 400°F may be needed for other containments which experience a higher temperature in containment during a LOCA or SLBA. Therefore, we believe that the instrument range of 50-350°F is adequate for post-accident monitoring at Point Beach and meets the intent of Regulatory Guide 1.97.

9. Comment: "Radioactive gas holdup tank pressure--the licensee should show that the existing range cannot be exceeded, or re-range in accordance with Regulatory Guide 1.97 (Section 3.3.18)."

Response: The current pressure instruments on the gas decay tanks at Point Beach have a range of 0-150 psig and the tanks are designed for 150 psig. The tanks are never operated near the 150 psig design rating and would not be following any postulated accident. The tanks are operated such that the system switches to a standby tank at approximately 95 psig, well below the 150 psig design rating. An alarm sounds at the C-59 control panel in the auxiliary building (the local control panel for the waste disposal system) at approximately 112 psig. Therefore, the tanks are never operated near the upper range limit of 150 psig during normal plant operation and also would not be under accident conditions. Therefore, the existing pressure range of the instruments is judged to be adequate and to meet the intent of Regulatory Guide 1.97 for post-accident monitoring at Point Beach.

10. Comment: "Emergency ventilation damper position--environmental qualification needs to be addressed in accordance with 10 CFR 50.49; seismic qualification and quality assurance requirements should be met and documented in accordance with Category 2 requirements (Section 3.3.19)."

Response: The emergency ventilation damper position indicators listed in Table 2 of the Enclosure to our September 1, 1983 submittal are not within the scope of 10 CFR 50.49 and are not required to be environmentally qualified. These position indicators are located in a mild environment and are not listed on the PBNP "Master List of Electrical Equipment to be Environmentally Qualified," which was reviewed by the NRC Staff during an EQ audit conducted July 22-26, 1985. No problems with the Master List were identified during this audit. The seismic qualification of these damper position indicators is planned to be addressed in accordance with the response to Unresolved Safety Issue A-46, "Seismic Qualification of Equipment in Operating Reactors." Wisconsin Electric is an active member of the Seismic Qualification Utility Group (SQUG), which has been working with the NRC Staff to resolve this issue in a reasonable manner. The NRC expects to issue the final requirements on seismic qualification to licensees by March 1986. Wisconsin Electric plans to meet these requirements in accordance with a Generic Implementation Program being developed by SQUG with review by the NRC. Quality Assurance requirements for these indicators are consistent with the quality assurance requirements for the systems in which they are contained as documented in the PBNP Final Safety Analysis Report and the Nuclear Power Department Quality Assurance Policy Manual. Therefore, we believe that the existing position indicators are adequate and that they meet the intent of Regulatory Guide 1.97.

11. Comments: "Vent from steam generator safety relief valves or atmospheric dump valves--environmental qualification should be addressed in accordance with 10 CFR 50.49 (Section 3.3.21)."

Response: The steam line radiation monitors (1&2-RE231 & 232) are not within the scope of 10 CFR 50.49 and are not required to be environmentally qualified. These monitors are located in a mild environment and are not listed in the PBNP "Master List of Electrical Equipment to be Environmentally Qualified," which was reviewed by the NRC Staff during an EQ audit conducted July 22-26, 1985. No problems with the Master List were identified during this audit. Therefore, we believe that this instrumentation meets the intent of Regulatory Guide 1.97.