



Wisconsin Electric POWER COMPANY

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VPNPD-85-469

NRC-85-112

October 8, 1985

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

Attention: Mr. Edward Butcher, Acting Chief
Operating Reactors, Branch No. 3

Gentlemen:

DOCKET NOS. 50-266 AND 50-301
AMPLIFYING INFORMATION REGARDING ENVIRONMENTAL
QUALIFICATION DEADLINE EXTENSION REQUEST
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In a telephone conversation held on September 27, 1985, Mr. T. G. Colburn of your staff requested that Wisconsin Electric provide amplifying information regarding Wisconsin Electric's request to the Commission for an extension of the environmental qualification deadline. The extension request concerned the qualification of the pressurizer safety valve direct position indicators at Point Beach. Specifically, additional information was requested on the history of qualification effort on the indicators, the alternative methods considered to achieve compliance with the requirements of 10 CFR 50.49 on this item by the November 30, 1985 deadline, and the current status of their qualification.

History, Alternatives, and Current Status

Wisconsin Electric initially installed a Westinghouse acoustical monitoring system on the safety valve discharge piping in December 1979 in order to comply with NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations". Upon issuance of NUREG-0737, "Clarification of TMI Action Plan

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Requirements", in November 1980, Item II.D.3.1, Direct Indication of Relief and Safety Valve Position, required that the direct position indicators be environmentally qualified. Wisconsin Electric considered environmental qualification of the acoustical monitoring system, but no agreement for qualification could be worked out with the vendor. Therefore, to provide a more direct indication of safety valve position and to achieve qualification on the shortest schedule at the lowest cost, Wisconsin Electric ordered Crosby lift indicating switch assemblies (LISA's) in October 1981. The LISA's were compatible with the installed Crosby safety valves and were committed to be qualified by Crosby shortly after delivery of the units to Point Beach. At that time, the Crosby LISA's were the only viable alternative to the Westinghouse acoustical monitors and were expected to comply with all associated NRC requirements.

The initial qualification test program was expected to be completed about October 1982, but ended in failure due to what was believed to be test setup inadequacies concerning the electrical interface used on the LISA's during the simulated loss-of-coolant accident (LOCA) tests. Because Wisconsin Electric still had a contract with Crosby to provide qualification for the LISA's, because the LISA's were already received, and because no other qualified direct position indication system was known to be available at that time, we decided in late 1982 to continue our program to design, install, and qualify the LISA system at Point Beach.

Crosby decided to build their own test facility for thermal aging and LOCA testing and did not begin a second qualification test program on the LISA's until late in 1983. Our October 10, 1983 letter to you regarding environmental qualification requested a deadline extension for qualification of the LISA's in accordance with 10 CFR 50.49 until November 2, 1984 (Unit 2) and May 24, 1985 (Unit 1) to allow installation of the LISA's during scheduled refueling outages, following successful completion of the second program of qualification testing by Crosby. This extension request was granted by your January 3, 1984 letter.

A number of delays occurred during execution of this second test program by Crosby due to test facility problems and QA program deficiencies. It took over one year to complete aging, radiation, and seismic tests and to initiate the LOCA tests on a generic LISA test specimen for use at pressurized water reactor (PWR) nuclear plants. During 1984, Wisconsin Electric also designed a new sealed electrical interface device for the LISA's and contracted with Crosby to test a LISA specimen using this new interface design. We had confidence that both the generic

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PWR specimen and the LISA using our interface would successfully survive the qualification testing, including LOCA simulation. Due to testing delays, on August 2, 1984 we sent you a letter requesting an additional environmental qualification deadline extension until June 7, 1985 for the LISA's on both units. This extension request was granted by your November 5, 1984 letter. The LISA's were installed at Point Beach in October 1984 (Unit 2) and May 1985 (Unit 1), but were not placed in service pending completion of qualification.

Testing anomalies then occurred in April 1985 during the LOCA test of the LISA specimen using the Wisconsin Electric interface design. We corrected the assumed cause of the problem (i.e., loose conduit fittings and LOCA chamber overpressure) and prepared for a LOCA retest. Our May 2, 1985 letter to you requested an additional environmental qualification deadline extension until August 31, 1985 to allow completion of the LOCA retest by July 1985. Your July 17, 1985 letter to us granted this additional deadline extension.

The LOCA test of the generic PWR specimen in June 1985 also resulted in anomalies due to apparent leakage of steam and chemical spray into the switches. Extensive troubleshooting and evaluation by Crosby led to the conclusion that the epoxy potting compound for the switches was leaking. At this time, Wisconsin Electric evaluated several possible solutions regarding the lack of environmentally qualified position indication on the pressurizer safety valves, which included the following:

1. Procurement and installation of a different qualified acoustical monitor offered by another vendor. This option would have required that a complete new instrumentation system with sensors, cables, power supplies, alarms, and control board indication be designed, specified, procured, and installed. Design and procurement lead time would probably take a minimum of twelve months with another year to install the system during scheduled refueling outages. This option was not available when the LISA's were originally purchased.
2. Procurement and installation of a qualified direct valve position indicator which uses a different principle of operation than the Crosby LISA's (e.g., a Linear Variable Differential Transformer, or LVDT). This option would require similar activities and schedule to Option 1. This option also was not available when the LISA's were originally purchased.

3. Qualification of the existing Westinghouse acoustical monitor by Wisconsin Electric. This option requires detailed design and material information on the equipment so that thermal and radiation aging programs contained within a qualification test program can be properly specified. This information is not readily available. In addition, the LISA qualification problems confirm the difficulties and uncertainties involved in undertaking a complex qualification test program. Such a test program may take several years to accomplish and still end in failure.
4. Continue to pursue qualification of the LISA's through Crosby. The other parts of the system had been designed and installed, including the interfaces, cables, power supplies, alarms, and control board indications. Crosby had developed a design modification which should allow the LISA's to be qualified for PWR requirements. This design modification seals off the exposed epoxy from the containment environment and results in a hermetically sealed device, provided the electrical interface is sealed. This modification can be retrofitted to the LISA's installed at Point Beach.

Option 4 above was determined to be the best option, since it could achieve a qualified direct position indication for the pressurizer safety valves in the shortest time with minimal additional plant backfit and at the lowest expenditure of engineering and financial resources. Our August 26, 1985 letter to Chairman Palladino requested an additional environmental qualification deadline extension be granted until November 30, 1986 to allow us to implement Option 4.

The current status of the LISA qualification program is that the environmental qualification testing has been successfully completed in late September 1985. Qualification test reports are expected to be received from Crosby in November 1985 which will allow us to complete the plant-specific environmental qualification reviews and documentation by the end of this year. In addition, specific contractual arrangements have been made with Crosby Valve and Gage Company to perform the required modifications on the Point Beach Unit 2 LISA's during the current refueling outage scheduled to end November 22, 1985 and on the Unit 1 LISA's during a refueling outage scheduled to end May 25, 1986. We are planning to perform the required modifications on the electrical interfaces for the LISA's at the same time and reinstall the LISA's in their final qualified design configuration by the end

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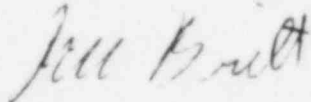
of these outages. Therefore, the environmental qualification of the LISA's is now expected to be completed by May 25, 1986 for both Point Beach units.

Summary of Wisconsin Electric's Position

Due to a series of unanticipated problems beyond our control during qualification testing of the LISA's by Crosby, Wisconsin Electric will not be able to achieve environmental qualification of the LISA's at Point Beach by November 30, 1985. We believe that Wisconsin Electric's decisions regarding the installation and qualification of direct position indication on the pressurizer safety valves at Point Beach have been prudent and demonstrate a good-faith effort to meet all NRC requirements for this item. Only this series of unanticipated testing problems have prevented us from achieving environmental qualification of this device by November 30, 1985. We believe that our proposed program for achieving final qualification of the LISA's by May 25, 1986 is reasonable and request that you endorse our extension request with the Commission.

We would be pleased to answer any additional questions you may have regarding this matter.

Very truly yours,



R. W. Britt
President

Copy to NRC Resident Inspector