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BECo Ltr. #96-022

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Docket No. 50-293
License No. DPR-35

Withdrawal of BECo Commitment to Modify the
Residual Heat Removal and Fuel Pool Cooling (RHR/FPC)
Intertie Piping Related to In-Service Inspection (ISI) Requirements

This letter withdraws a commitment made relative to our Pilgrim Nuclear Power Station (PNPS) Second Ten-Year ISI Program that ended on June 30, 1995.

In our letter (BECo #95-015) dated February 9, 1995, we committed to install an isolation valve in the residual heat removal and fuel pool cooling (RHR/FPC) intertie line as an acceptable alternative to conducting inspections of the piping welds and hangers. Our subsequent adoption of the 1989 Edition of ASME Code Section XI requirements for our Third Ten-Year ISI Program (reference BECo letter #95-091 dated September 1, 1995) makes the valve installation alternative unnecessary. As provided in the attached technical basis discussion, code requirements can be met, and quality and safety can be maintained without installing the isolation valve. Thus, the ISI of RHR/FPC intertie welds and hangers will be conducted during the Third Ten-Year ISI Program in compliance with 1989 Edition of ASME Code.

Should you have questions on our relief request, please contact Walter Lobo of our Regulatory Affairs staff at (508) 830-7940.

E. T. Boulette, PhD

ETB/WGL/RAP96/RHRISI

Attachment: Technical Basis for Rescinding Commitment

cc: See next page

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Page 2

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ATTACHMENT
Technical Basis for Rescinding Commitment

Basis for Rescinding the Commitment:

Pilgrim's Second Ten-Year ISI Program interval ended June 30, 1995, and was based on the 1980 Winter Addenda of ASME Section XI. Subarticles IWC-2500 and IWF-2500 required the inspection of all hangers and at least 25% of the welds in Category C-F of Table IWC-2500-1 with no restrictions on piping wall thickness. This inspection requirement included all Class 2 piping hangers and specific welds in the RHR/FPC intertie. These welds are located in high radiation areas. We requested relief from these inspections during the Second ISI interval in BECo letter #95-015 dated February 9, 1995, based on the intended installation of a 6-inch manual isolation valve that would have changed the piping classification from Class 2 to non-class. The NRC granted the code relief by letter dated May 18, 1995 (TAC. NO. M91524). This code relief would remain in effect for the Second Ten-Year ISI Program interval.

The 1989 Edition ASME Section XI, Category C-F-2 of Table IWC-2500-1 has been revised with respect to Class 2 piping of less than 0.375 inch wall thickness. The intertie piping is M-300 Pipe Class HB (6-inch Schedule 40) with a wall thickness of 0.280 inch. The revised requirement states that only 7.5% of the welds for Class 2 pipe wall thickness ≤ 0.375 inch require examination. Also, Code Case N-491, Category F-A, Table 2500-1 now requires only 15% of the hangers be inspected¹. Rather than exclude thin-wall pipe welds from the ISI Program as allowed by the revised code, the NRC has determined that a 7.5% augmented volumetric sample of thin-wall piping welds should be included in the program. This determination is included in item C of NRC letter dated December 6, 1995 (TAC. No. M93398).

Pilgrim's Third Ten-Year ISI Program includes a sample of RHR/FPC intertie hangers and welds in full compliance with the revised code selection criteria and NRC guidance. This eliminates the need to install the 6-inch manual isolation valve in order to shift the Class 2 piping inspection boundary. We, therefore, request NRC approval of the proposal to rescind the commitment to install the isolation valve.

Quality and Safety Considerations:

The inspection of welds and hangers in the RHR/FPC intertie will be completed as prescribed in our Third Ten-Year ISI Program. This complies with the 1989 Edition ASME Code Section XI, Code Case N-491, the NRC position on weld inspections of thin-wall piping welds, and 10 CFR 50.55a. Eliminating the commitment does not impact quality or safety since ASME Code requirements will be met in accordance with the Third Ten-Year ISI Program.

Information on Previous Submittal:

During NRC Inspection No. 95-22, we agreed to supplement our submittal dated February 9, 1995, with additional technical bases for the previous waiver of the ISI of the intertie pipe welds and hangers. The additional technical bases are thus included for your information, as follows.

¹

NRC has endorsed in R.G. 1.147 Rev. 11 the use of Code Case N-491, and BECo has adopted the Code Case for the Third Ten-Year ISI Program as presented in BECo letter #95-091, dated September 1, 1995.

The RHR/FPC intertie is located in the shutdown cooling line that provides suction to the RHR pumps. This portion of the line is normally isolated during power operation. A manual isolation valve, 1001-103, in the intertie line separates the ASME Class 2 RHR piping from the non-code FPC piping.

Failure of the intertie piping is not expected because recent examinations of welds in similar Class 2 piping showed no signs of cracking. Also, three welds in this line were examined during the first interval with no findings. The intertie piping is installed with seismic restraints and hangers. No degradation in piping supports had been noted during previous ISI inspections.

Furthermore, since this is low pressure, low temperature piping, leaks are expected to result from weld failures that might occur instead of outright pipe failure. Should cracks develop in the Class 2 intertie piping welds, leakage would be detected due to the increase in floor drain volume or loss of spent fuel pool water inventory. Repairs to leaking pipe in the intertie piping would not be hampered by high temperature or pressure.

Catastrophic failure of this Class 2 intertie piping is judged to be extremely improbable. However, should it occur, loss of reactor water level is prevented by automatic isolation of RHR/FPC intertie piping. Also, ECCS makeup systems are available until the vessel is flooded. Operators are trained on procedures to deal with loss of reactor water level or shutdown cooling (e.g., PNPS Procedure 2.4.25 provides for cooldown due to loss of shutdown cooling). Note that postulated weld failure leading to pipe leaks or breaks in this section of piping is only of safety significance during refueling outages. This piping is isolated during normal operation.

The RHR/FPC intertie is used for augmented fuel pool cooling without shutdown cooling (mode 2 operation PNPS Procedure 2.2.85.2). The consequences of failure of the intertie piping on the RHR side of 1001-103 valve would be mitigated using an outage specific alternate water level makeup and decay heat removal procedure (i.e., TP 95-010, "RFO 10, Compensatory Measures"). Thus, the failure of the intertie does not affect plant safety. Therefore, the relief request meets the requirement of 10 CFR 50.55a(a)(3)(i) in that an acceptable level of quality and safety is maintained.