Entergy

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Pilgrim Station
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William J. Riggs
Director, Nuclear Assessment

November 7, 2003

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

SUBJECT: Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
Docket No. 50-293
License No. DPR-35

Pilgrim Relief Request (PRR)-29,

Relief from System Hydrostatic Test Requirements for Small Bore (≤ 1-inch), ASME Code Class 1 Reactor Coolant Pressure Boundary (RCPB) Vent, Drain and Branch (VTDB) Lines and Connections.

LETTER NUMBER: 2.03.117

Dear Sir or Madam:

This letter requests NRC approval of the attached Pilgrim Relief Request (PRR) No. 29, in support of Pilgrim refueling Outage (RFO)-15.

This relief request applies to the system hydrostatic pressure test requirements for small-bore (≤ 1-inch) ASME Code Class 1 Reactor Coolant Pressure Boundary (RCPB) vent, drain and branch (VTDB) lines and connections. Pilgrim has concluded that the proposed alternative provides an acceptable level of quality and safety and strict adherence to the specified Code requirements would result in unnecessary hardship without a compensating increase in the level of quality and safety. This relief is requested under the provisions of 10CFR50.55a(a)(3)(ii).

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Review and approval of PRR-29 is requested by December 1, 2004.

A similar relief request was approved for Hatch Nuclear Power Plant, Units 1 and 2 (TAC NOS. MA 2118 and 2119) by NRC SER, dated September 3, 1998.

If you have any questions regarding the information contained in this letter, please contact Mr. Bryan Ford (508) 830-8403.

Sincerely,

William J. Riggs

Attachments: Pilgrim Relief Request No. 29 (2 pages)

cc: Mr. Travis Tate, Project Manager
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Senior Resident Inspector
Pilgrim Nuclear Power Station

ATTACHMENT TO ENTERGY LETTER 2.03.117

RELIEF REQUEST NUMBER PRR-29

SYSTEM/COMPONENT(S) FOR WHICH RELIEF IS REQUESTED

Small bore (≤ 1-inch), ASME Code Class 1 Reactor Coolant Pressure Boundary (RCPB) vent, drain and branch (VTDB) lines and connections.

CODE REQUIREMENTS

ASME Section XI, 1989 Edition, Table IWB–2500-1, Examination Category B-P, Items B15.51 and B15.71 require the system hydrostatic test to include all ASME Code Class 1 components within the system boundary.

RELIEF REQUESTED

Relief is requested to perform the ASME Code Class 1 System Hydrostatic Test with these VTDB lines and connections in the closed position.

BASIS FOR RELIEF

The VTDB lines and connections are equipped with manual valves, which provide double isolation of the RCPB. These valves are generally maintained closed during normal operation. The piping outboard of the first isolation valve is not normally pressurized. Under normal operating conditions, the VTDB lines and connections see reactor coolant system pressures and temperatures only if leakage through the inboard valves occurs. To perform the Code-required test, it would be necessary to manually open the inboard valves to pressurize the VTDB lines and connections. Pressurization by this method defeats the double isolation and potentially presents safety concerns for the personnel performing the test. Furthermore, performing the test with the inboard isolation valves open requires several man-hours to position the valves for the test and restore the valves after the test is complete. These valves are located in close proximity of the RCPB main steam loop piping and thus require personnel entry into high radiation areas within the containment. Based on previous outage data, estimated radiation exposure associated with valve alignment and realignment would be approximately 1 man-Rem per test. Since this test would be performed near the end of an outage when all RCPB work has been completed, the time required to open and close these VTDB lines and connections would impact the outage schedule. Thus, compliance with this specific Code requirement results in unnecessary hardship pursuant to 10 CFR 50.55a(a)(3)(ii) without a sufficient compensating increases in the level of quality and safety.

The proposed alternative provides an acceptable level of safety and quality based on the following:

1. ASME Section XI Code, paragraph IWA-4700, provides the requirements for hydrostatic pressure testing of piping and components after repairs by welding to the pressure boundary. IWA-4700(b)(5) excludes component connections, piping, and associated valves that are 1-inch nominal pipe size and smaller from the hydrostatic pressure test requirement after welded repairs. Therefore, requiring a hydrostatic test and visual examination of these ≤ 1-inch diameter RCPB VTDB lines and connections once each

10-year interval is unwarranted considering that hydrostatic pressure testing a repair weld on the same connections is not required by the ASME XI Code.

2. The non-isolable portion of the RCPB VTDB lines and connections will be pressurized and visually examined as required. Only the isolable portion of those small diameter VTDB lines and connections will not be pressurized.

3. A typical VTDB line and connection includes two manual valves separated by a short pipe nipple, which is connected to the RCPB via another short pipe nipple and a half coupling. All connections are typically socket-welded and the welds receive a surface examination after installation. The piping and valves are normally heavy wall (Sch. 160 pipe and 600# valve bodies). The VTDB lines and connections are not subject to high stresses or cyclic loads and design ratings are significantly greater than RCPB operating or design pressure.

4. Technical Specifications (TS) 3.2.E and 3.6.C require Drywell and RCPB leakage monitoring during normal operation. Should TS limits be exceeded appropriate corrective actions, which may include shutting the plant down, are required to identify the source of leakage and restore the integrity of the RCPB boundary.

ALTERNATE EXAMINATIONS

The RCPB VTDB lines and connections will be visually examined for leakage and any evidence of past leakage with the isolation valves in the normally closed position each refueling outage during the ASME XI Class 1 System Leakage Test (IWB-5221).

The RCPB VTDB lines and connections will also be visually examined with the isolation valves in the normally closed position during the 10-year ISI pressure test (IWB-5222 and Code Case N-498-1). This examination will be performed with the RCPB at nominal operating pressure associated with 100% reactor power after satisfying the required 4-hour hold time.

The above-proposed alternative provides an acceptable level of quality and safety.

IMPLEMENTATION SCHEDULE

This relief request is applicable for the Third 10-Year Interval.