



PECO ENERGY

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Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

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

Subject: Limerick Generating Station, Units 1 and 2
Relief Requests for First Ten Year Interval Inservice
Inspection Programs for Performance of System Pressure Tests

Gentlemen:

Attached for review and approval are three (3) Relief Requests for the Limerick Generating Station (LGS), Units 1 and 2, First Ten Year Interval Inservice Inspection (ISI) Programs. These Relief Requests are being submitted to request relief from the requirements stipulated in Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, 1986 Edition, regarding pressure tests for various Class 1, 2, and 3 systems and pressure retaining components, which include piping, pumps, and valves. Two (2) of the three (3) Relief Requests apply to the LGS Unit 1 ISI Program (i.e., Specification NE-42), while the third Relief Request pertains to the LGS Unit 2 ISI Program (i.e., Specification NE-27). A brief description of each Relief Request is provided below.

Unit 1 Relief Requests

- Relief Request No. RR-12, Revision 1

This Relief Request requests the use of Code Case N-498-1, "Alternate Rules for 10-Year Hydrostatic Pressure Testing for Class 1, 2, and 3 Systems," which been approved by ASME, but has not yet been endorsed by the NRC.

- Relief Request No. RR-22

This Relief Request requests relief from the ASME Code requirements specified in Section XI, Subsection IWA-4400, which requires that an elevated pressure hydrostatic test be performed in accordance with the requirements of IWA-5000, following repairs by welding, or the installation of replacement items by welding, on the pressure retaining boundary of Class 1, 2, and 3 components. In lieu of performing the ASME Section XI pressure test, nondestructive examinations will be performed in conjunction with visual examinations (i.e., VT-2) and system pressure tests.

ACH

Unit 2 Relief Request

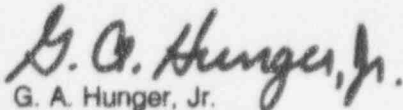
Relief Request No. RR-16

This Relief Request is identical to Relief Request No. RR-22 described above for Unit 1, which requests relief from the ASME Code requirements specified in Section XI, Subsection IWA-4400, concerning elevated pressure hydrostatic testing in accordance with the requirements IWA-5000, after repairs by welding, or the installation of replacement items by welding, on the pressure retaining boundary of Class 1, 2, and 3 components. This Relief Request also contains the same alternate testing provisions as described above for Relief Request No. RR-22.

The specific details and justification for relief are provided in the attached Relief Requests. We are requesting that the NRC review the attached Relief Requests for the LGS, Units 1 and 2, ISI Programs, and grant the necessary relief by June 30, 1995.

If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,



G. A. Hunger, Jr.
Director - Licensing

Attachments

cc: T. T. Martin, Administrator, USNRC, Region I (w/ attachments)
N. S. Perry, USNRC Senior Resident Inspector, LGS (w/ attachments)

Limerick Generating Station, Unit 1

**First Ten-Year Interval
Inservice Inspection Program**

RELIEF REQUEST NO. RR-12, Rev. 1

Limerick Generating Station, Unit 1
RELIEF REQUEST NO. RR-12
Revision 1

I. SCOPE

This relief request is applicable to those ASME Code Case(s) adopted for use in this ISI Program which have not been specifically endorsed for use by the USNRC in Regulatory Guide 1.147.

II. DISCUSSION

Code Cases are periodically published by the ASME for the purpose of either clarifying the intent of Code rules or for providing rules and regulations for circumstances which are not currently covered by existing Code rules but need to be addressed in a timely manner. Use of these non-mandatory Code Cases for inservice inspection is subject to USNRC acceptance of the Code Case(s); Regulatory Guide 1.147 lists those Codes Cases that have been reviewed by the NRC and are generally acceptable for implementation in an ISI Program. Other Code Cases may be used provided specific authorization is requested pursuant to 10CFR50.55a.

The purpose of this relief request is to request authorization of the adoption of specific Code Cases for implementation in the LGS 1 ISI Program.

III. CODE CASE(S) REQUIRING AUTHORIZATION

The following Code Case requires specific authorization for use in the LGS 1 ISI Program:

- A. N-498-1; Alternate Rules for 10-Year Hydrostatic Pressure Testing for Class 1, 2, and 3 Systems.

Adoption of this Code Case will eliminate the need for the performance of the Class 1, 2, and 3 end of First Interval (EOI) Hydrostatic Test, as required by ASME Boiler and Pressure Vessel (B&PV) Code, Section XI, thereby, reducing the amount of personnel radiation exposure received during the performance of the Class 1, 2, and 3 hydrostatic test.

IV. ALTERNATE PROVISIONS

The alternative rules of the Code Case in III above shall be implemented in the LGS 1 ISI Program for the First Inservice Inspection Interval.

As an alternative, a Class 1 system leakage test shall be conducted at or near the end of the inspection interval. The boundary subject to test pressurization during the system leakage test shall extend to all Class 1 pressure retaining components within the system boundary. In addition, a Class 2 and 3 system pressure test will be conducted at or near the end of the interval. The boundary subject to test pressurization during the system pressure test will extend to all Class 2 and 3 components required to operate or support the safety system function up to and including the first normally closed valve, including a safety or relief valve or valve capable of automatic closure when the safety function is required.

RELIEF REQUEST NO. RR-12

Revision 1 (Continued)

V. BASIS FOR RELIEF

The Code Case discussed in Section III above represents technically acceptable alternative rules to ASME Section XI Code requirements. The fact that this Code Case has not been endorsed by the NRC and referenced in Regulatory Guide 1.147 in no way detracts from its technical adequacy since the major reason for its omission is the timing of its publication with respect to the most recent revision of the Regulatory Guide. That is, the subject Code Case is relatively recent and it is expected that it will be accepted in a subsequent revision of the Regulatory Guide.

Adoption of this alternative rule provides an acceptable level of quality and safety and does not compromise the adequacy of the LGS 1 ISI Program in meeting the intent of ASME Section XI.

Limerick Generating Station, Unit 1

**First Ten-Year Interval
Inservice Inspection Program**

RELIEF REQUEST NO. RR-22

Limerick Generating Station, Unit 1
RELIEF REQUEST NO. RR-22
Revision 0

I. IDENTIFICATION OF COMPONENTS

All Class 1, 2, and 3 Pressure Retaining Components subject to Hydrostatic Testing per IWA-4400 and IWA-5000. This Relief Request applies to the following systems: Main Steam (MS), Emergency Service Water (ESW), Feedwater (FW), High Pressure Coolant Injection (HPCI), Residual Heat Removal Service Water (RHRSW), Reactor Recirculation (RR), Reactor Pressure Vessel (RPV) Drain, Reactor Core Isolation Cooling (RCIC), Reactor Water Clean Up (RWCU), and Residual Heat Removal (RHR).

II. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

ASME Code, Section XI, 1986 Edition, IWA-4400 requires an elevated pressure hydrostatic test to be performed in accordance with IWA-5000 after repairs by welding, or the installation of replacement items by welding, on the pressure retaining boundary of Class 1, 2, and 3 components.

III. BASIS FOR RELIEF

Elevated pressure hydrostatic tests are difficult to perform and often represent a true hardship. Some of the difficulties associated with elevated pressure testing include the following:

- Hydrostatic testing often requires complicated or abnormal valve line-ups in order to properly vent, fill, and isolate the component requiring testing.
- Relief valves with setpoints lower than the hydrostatic test pressure must be gagged, or removed and blind flanged. The removal and flanging process requires the draining and refilling of the system.
- Valves that are not normally used for isolation (normally open pump discharge valves), require time consuming seat maintenance in order to allow for pressurization.
- The radiation exposure required to perform a hydrostatic pressure test is high due to the large amount of time required to prepare the system for testing (install relief valve gags, perform appropriate valve line-ups, etc.).

The difficulties encountered in performing a hydrostatic pressure test are prohibitive when weighed against the benefits. Industry experience shows that most through wall leakage is detected during system operation as opposed to during elevated pressure tests such as 10-year hydrostatic tests.

Little benefit is gained from the added challenge to the piping system provided by an elevated pressure test, when compared to an operational test, especially when one considers that the piping stress experienced during a hydrostatic test does not include the significant stresses associated with the thermal growth and dynamic loading associated with design basis.

RELIEF REQUEST NO. RR-22
Revision 0 (Continued)

IV. ALTERNATE PROVISIONS

As an alternate to the existing ASME Code, Section XI requirements, LGS 1 proposes the following:

- NDE shall be performed in accordance with the methods and acceptance criteria of the applicable Subsection of the Construction Code (e.g. ASME Section III).
- When performing repairs by welding, or the installation of replacement items by welding, on the pressure retaining boundary of Class 1, 2, and 3 components, NDE shall be performed in accordance with the methods and acceptance criteria of the Construction Code (e.g. ASME Section III). In addition, when an examination is used in accordance with the Construction Code for a butt joint, an additional examination (Magnetic Particle or Liquid Penetrant, MT/PT) shall be performed on the root pass layer. This provision does not apply to Class 1 and 2 components, since examinations will be performed in accordance with Code requirements.
- Prior to or immediately upon return to service, a visual examination (VT-2) shall be performed in conjunction with a system leakage test (functional or inservice), in accordance with paragraph IWA-5000, with no hold times.

Limerick Generating Station, Unit 2

**First Ten-Year Interval
Inservice Inspection Program**

RELIEF REQUEST NO. RR-16

Limerick Generating Station, Unit 2
RELIEF REQUEST NO. RR-16
Revision 0

I. IDENTIFICATION OF COMPONENTS

All Class 1, 2, and 3 Pressure Retaining Components subject to Hydrostatic Testing per IWA-4400 and IWA-5000. This Relief Request applies to the following systems: Main Steam (MS), Emergency Service Water (ESW), Feedwater (FW), High Pressure Coolant Injection (HPCI), Residual Heat Removal Service Water (RHRSW), Reactor Recirculation (RR), Reactor Pressure Vessel (RPV) Drain, Reactor Core Isolation Cooling (RCIC), Reactor Water Clean Up (RWCU), and Residual Heat Removal (RHR).

II. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

ASME Code, Section XI, 1986 Edition, IWA-4400 requires an elevated pressure hydrostatic test to be performed in accordance with IWA-5000 after repairs by welding, or the installation of replacement items by welding, on the pressure retaining boundary of Class 1, 2, and 3 components.

III. BASIS FOR RELIEF

Elevated pressure hydrostatic tests are difficult to perform and often represent a true hardship. Some of the difficulties associated with elevated pressure testing include the following:

- Hydrostatic testing often requires complicated or abnormal valve line-ups in order to properly vent, fill, and isolate the component requiring testing.
- Relief valves with setpoints lower than the hydrostatic test pressure must be gagged, or removed and blind flanged. The removal and flanging process requires the draining and refilling of the system.
- Valves that are not normally used for isolation (normally open pump discharge valves) These valves require time consuming seat maintenance in order to allow for pressurization.
- The radiation exposure required to perform a hydrostatic pressure test is high due to the large amount of time required to prepare the system for testing (install relief valve gags, perform appropriate valve line-ups, etc.).

The difficulties encountered in performing a hydrostatic pressure test are prohibitive when weighed against the benefits. Industry experience shows that most through wall leakage is detected during system operation as opposed to during elevated pressure tests such as 10-year hydrostatic tests.

Little benefit is gained from the added challenge to the piping system provided by an elevated pressure test, when compared to an operational test, especially when one considers that the piping stress experienced during a hydrostatic test does not include the significant stresses associated with the thermal growth and dynamic loading associated with design basis.

RELIEF REQUEST NO. RR-16
Revision 0 (Continued)

IV. ALTERNATE PROVISIONS

As an alternate to the existing ASME Code, Section XI requirements, LGS 2 proposes the following:

- NDE shall be performed in accordance with the methods and acceptance criteria of the applicable Subsection of the Construction Code (e.g. ASME Section III).
- When performing repairs by welding, or the installation of replacement items by welding, on the pressure retaining boundary of Class 3 components, NDE shall be performed in accordance with the methods and acceptance criteria of the Construction Code (e.g. ASME Section III). In addition, when an examination is used in accordance with the Construction Code for a butt joint, an additional examination (Magnetic Particle or Liquid Penetrant, MT/PT) shall be performed on the root pass layer. This provision does not apply to Class 1 and 2 components, since examinations will be performed in accordance with Code requirements.
- Prior to or immediately upon return to service, a visual examination (VT-2) shall be performed in conjunction with a system leakage test (functional or inservice), in accordance with paragraph IWA-5000, with no hold times.