

  
PECO ENERGYPECO Energy Company  
Nuclear Group Headquarters  
965 Chesterbrook Boulevard  
Wayne, PA 19087-5691

October 4, 1994

Docket No. 50-352  
License No. NPF-39U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555Subject: Limerick Generating Station, Unit 1  
Request Relief for First Ten-Year Interval Inservice  
Inspection Program Regarding System Pressure Testing

Gentlemen:

Attached for review and approval is Revision 2 to Relief Request No. RR-13 for the Limerick Generating Station (LGS), Unit 1, First Ten Year Interval Inservice Inspection (ISI) Program. Revision 2 to Relief Request No. RR-13 requests relief from the requirements of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, 1986 Edition, regarding system pressure tests for various Class 2 and 3 pressure retaining components, which includes piping, pumps, and valves. This Relief Request was originally submitted (i.e., Revision 0) for NRC review and approval by letter dated January 24, 1992, and was subsequently revised and superseded by Revision 1. Revision 1 to Relief Request No. RR-13 was submitted by letter dated May 18, 1993, to provide additional information to address NRC questions concerning this Relief Request.

By letter dated March 1, 1994, the NRC issued its Safety Evaluation Report (SER) and supporting Technical Evaluation Report (TER) for the LGS, Unit 1, First Ten-Year Interval ISI Program. As documented in the March 1, 1994 NRC letter, and supporting SER and TER, relief was denied for some aspects of Relief Request No. RR-13, Revision 1, since we failed to adequately justify that meeting the ASME Code requirements was impractical and that it created a hardship or burden.

Therefore, we are submitting Revision 2 to Relief Request No. RR-13 to provide additional justification based on information provided in the NRC's SER to support approval of this Relief Request. Revision 2 to Relief Request No. RR-13 supersedes Revision 1 previously submitted by letter dated May 18, 1993.

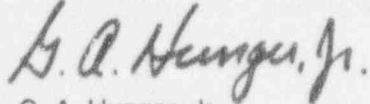
The details and justification for relief are explained further in the attached Relief Request. We would appreciate your cooperation in reviewing Relief Request No. RR-13, Revision 2, and request that the NRC grant relief from performing the ASME Code required pressure tests for Class 2 and 3 pressure retaining components by June 30, 1995.

AC47

October 4, 1994  
Page 2

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

Very truly yours,

A handwritten signature in dark ink, appearing to read "G. A. Hunger, Jr.", written in a cursive style.

G. A. Hunger, Jr.  
Director - Licensing

Attachment

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

**Limerick Generating Station, Unit 1**

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

**RELIEF REQUEST NO. RR-13  
Revision 2**

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2

I. IDENTIFICATION OF COMPONENTS

Class 2 (exempt and non-exempt) pressure retaining components within the pressure retaining boundary of pressure vessels, piping, pumps, and valves, Examination Category C-H, Item Numbers C7.10 through C7.80 inclusive.

Class 3 (exempt and non-exempt) pressure retaining components within the pressure retaining boundary, Examination Categories D-A, D-B, and D-C, Item Number D1.10, D2.10, and D3.10, respectively.

The specific Class 2 and 3 components covered by this relief request are detailed in Table(s) RR-13-1.1 through RR-13-1.11.

II. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

ASME Code, Section XI, 1986 Edition, Examination Category C-H requires the pressure retaining components within each system boundary be subject to the system pressure tests of IWC-5000 and visually (VT-2) examined.

ASME Code, Section XI, 1986 Edition, Examination Categories D-A, D-B, and D-C require the pressure retaining components within each system boundary be subject to the system pressure tests of IWD-5000 and visually (VT-2) examined.

The required system pressure tests shall be performed during the first inservice inspection interval in accordance with Table IWC-2500-1 or Table IWD-2500-1, as applicable.

Relief is requested from meeting the subject pressure test requirements for the specific components listed in Table RR-13-1.1 through RR-13-1.11 due to hardship imposed by plant design and/or redundant testing. Individual test requirements requiring relief are as detailed in the Tables.

III. BASIS FOR RELIEF

Pressure testing in accordance with some or all of the requirements of IWC-5000 or IWD-5000, as applicable, for the affected components is impractical due to plant/system design and/or redundant test requirements as detailed in Table(s) RR-13-1.1 through RR-13-1.11.

In all cases, alternate testing provides adequate assurance of pressure boundary integrity.

IV. ALTERNATE PROVISIONS

Any alternate test provisions, where practical, are as proposed in Table(s) RR-13-1.1 through RR-13-1.11.

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.1

(Withdrawn)

|

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.2  
Revision 2

This Table approved in NRC SER dated 3/1/94

I. Identification of Components

Class 3 Nuclear Boiler Vessel instrumentation tubing to drywell pressure instrumentation outboard of HV-42-147A, B, C, and D. (Ref P&ID: ISI-M-42, Sht 1, ISI-M-57, Sht 1, ISI-M-59, Sht 1)

II. Code Requirement From Which Relief Is Requested

IWD-5221, System Inservice Test and  
IWD-5223, System Hydrostatic Test

III. Basis For Relief

Normal Drywell pressure is less than 1 psig. The pressurizing fluid is nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive.

LGS Technical Specifications require channel checks every 12 hours to verify drywell pressure instrumentation operability. This is performed by verifying proper pressure readings. A significant tubing leak will cause an improper reading, and will be corrected and retested. The tubing and components are also included in the Integrated Leak Rate Test (ILRT) boundary. Note: valves HV-42-147A, B, C, and D shall remain "Open" during the performance of the Appendix "J" ILRT.

IV. ALTERNATE PROVISIONS

LGS Technical Specification operability checks and the Integrated Leak Rate Test (ILRT) provide assurance of component integrity and will be utilized to satisfy ASME Section XI requirements.

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.3  
Revision 2

I. Identification of Components

Class 2 RCIC Turbine Exhaust Vacuum Breaker line HBB-145 between and including valves HV-49-1F084, HV-49-1F081, and 1019.  
(Ref. P&ID: ISI-M-49, Sht 1)

II. Code Requirement From Which Relief Is Requested

IWC-5221, System pressure test during system functional/in-service tests and,  
IWC-5222, System hydrostatic test

III. Basis For Relief

Normal Drywell pressure is less than 1 psig. The pressurizing fluid is nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive.

10CFR50 Appendix J Local Leak Rate Testing is performed once per Refuel Outage.

During LLRTs, the subject piping is pressurized to 44 psig, a substantially higher pressure than that developed during a periodic system functional test. As such, the LLRT offers the following advantages over system pressure tests:

- 1) LLRTs are performed more frequently than periodic system functional tests and the ten year hydrostatic test.
- 2) LLRTs have the ability to quantify leakage which is not feasible with VT-2 inspections on this essentially gas-filled piping.
- 3) LLRTs conservatively include through valve leakage which would not be identified in a VT-2 inspection.

IV. ALTERNATE PROVISIONS

10CFR50 Appendix J Local Leak Rate Testing (LLRT) provides assurance of component integrity.

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.4  
Revision 2

I. Identification of Components

Class 2 HPCI Turbine Exhaust Vacuum Breaker line HBB-144 between and including valves HV-55-1F095, HV-55-1F094, and 55-1026. (Ref P&ID: ISI-M-55, Sht 1)

II. Code Requirement From Which Relief Is Requested

IWC-5221, System pressure test during system function/in-service tests and, IWC-5222, System hydrostatic test.

III. Basis For Relief

Normal Drywell pressure is less than 1 psig. The pressurizing fluid is nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive.

Appendix J LLRTs are performed once per Refuel Outage. During LLRTs, the subject piping is pressurized to 44 psig, a substantially higher pressure than that developed during a system functional test. As such, the LLRT offers the following advantages over system pressure tests:

- 1) LLRTs are performed more frequently than periodic system functional tests or the ten year hydrostatic test.
- 2) LLRTs have the ability to quantify leakage which is not feasible with VT-2 inspection on this essentially gas-filled piping.
- 3) LLRTs conservatively include through valve leakage which would not be identified in a VT-2 inspection.

IV. ALTERNATE PROVISIONS

10CFR50 Appendix J Local Leak Rate Testing (LLRT) provides assurance of component integrity.



Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.5  
Revision 2

This Table approved in NRC SER dated 3/1/94.

I. Identification of Components

Class 3 Containment Atmospheric Control tubing to suppression pool pressure and level instrumentation outboard of SV-57-101. (Ref P&ID: ISI-M-57, Sht1, ISI-M-52, Sht 1)

II. Code Requirement From Which Relief Is Requested

IWD-5221, System Inservice Test and  
IWD-5223, System Hydrostatic Test.

III. Basis For Relief

Normal suppression pool pressure is less than 1 psig. The pressurizing fluid is nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive.

LGS Technical Specifications require monitoring suppression pool pressure every 12 hours to verify proper pressure. Additionally, Technical Specifications require channel checks every 24 hours to verify operability of the suppression pool level indicators. This is performed by verifying a proper level readings. A significant tubing leak will give an improper reading, and will be corrected and retested. Also, the tubing and components are included in the Integrated Leak Rate Test (ILRT) boundary. Note: Valve SV-57-101 shall remain "Open" during the performance of the Appendix "J" ILRT.

IV. ALTERNATE PROVISIONS

LGS Technical Specification suppression pool instrumentation operability checks and the Integrated Leak Rate Test (ILRT) provide assurance of component integrity and will be utilized to satisfy ASME Section XI requirements.

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.6  
Revision 2

I. Identification of Components

Class 2 Post-LOCA Recombiner piping HBB-128 and HBB-127 between and including "A" Recombiner and valves HV-57-161 and HV-57-162, and HBB-126 and HBB-124 between and including "B" recombinder and valves HV-57-163 and HV-57-164. (Ref P & ID: ISI-M-57, Sht 1 & 2)

Class 2 hydrogen/oxygen sampling lines HCB-116 and HCB-117, between connections on the Combustible Gas Analyzer Package 1OS205, and valves SV-57-159, SV-57-141, SV-57-142 and SV-57-147B, SV-57-143, SV-57-144 and SV-57-146B, and SV-57-145 (HCB-117). HCB-116 and HCB-117, between connections on the Combustible Gas Analyzer package 1OS206, and valves SV-57-184 and SV-57-146A, SV-57-186 and SV-57-147A, SV-57-195, SV-57-190 and SV-57-1090, and SV-57-185 (HCB-117). (Ref. P&ID: ISI-M-57, Sheets 1, 2, 3).

II. Code Requirement From Which Relief Is Requested

IWC-5221, System pressure test during system functional/in-service tests and,  
IWC-5222, System hydrostatic test

III. Basis For Relief

During normal plant operation, this piping is either isolated or less than 1 psig (normal containment pressure). The pressurizing fluid is essentially nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive.

System Contaminated Pipe Inspection (CPI) is performed once per refuel on post-LOCA recombinder piping. During CPI testing associated with the Leak Reduction Program (UFSAR 6.2.8), this piping is pressurized to 44 psig. CPIs for this system are performed similar to 10CFR50 Appendix J Local Leak Rate Testing and, as such, offer the following advantages over system pressure tests:

- 1) CPIs are performed more frequently than periodic system functional tests and the ten year hydrostatic tests.
- 2) CPIs have the ability to quantify leakage which is not feasible with a VT-2 inspection on this air filled piping.
- 3) CPIs conservatively include through valve leakage which would not be identified in a VT-2 inspection.

The combustible gas analyzer continuously samples containment. A tubing leak will cause improper (high) readings which would be corrected and retested.

IV. ALTERNATE PROVISIONS

System Contaminated Pipe Inspection (CPI) and monitoring of the combustible gas analyzers provides assurance of component integrity.

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.7  
Revision 2

I. Identification of Components

Class 2 Containment Atmospheric Control piping as illustrated in figures RR-13-1.7a & b.

II. Code Requirement From Which Relief Is Requested

IWC-5221, System pressure test during system functional/in-service tests and,  
IWC-5222, System hydrostatic test.

III. Basis For Relief

During normal plant operation, this piping is either isolated or less than 1 psig (normal containment pressure). The pressurizing fluid is essentially nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive.

10CFR50 Appendix J Local Leak Rate Testing (LLRT) is performed once per Refuel Outage.

During LLRTs, the subject piping is pressurized to 44 psig, a substantially higher pressure than that developed during a periodic system functional test. As such, the LLRT offers the following advantages over system pressure tests:

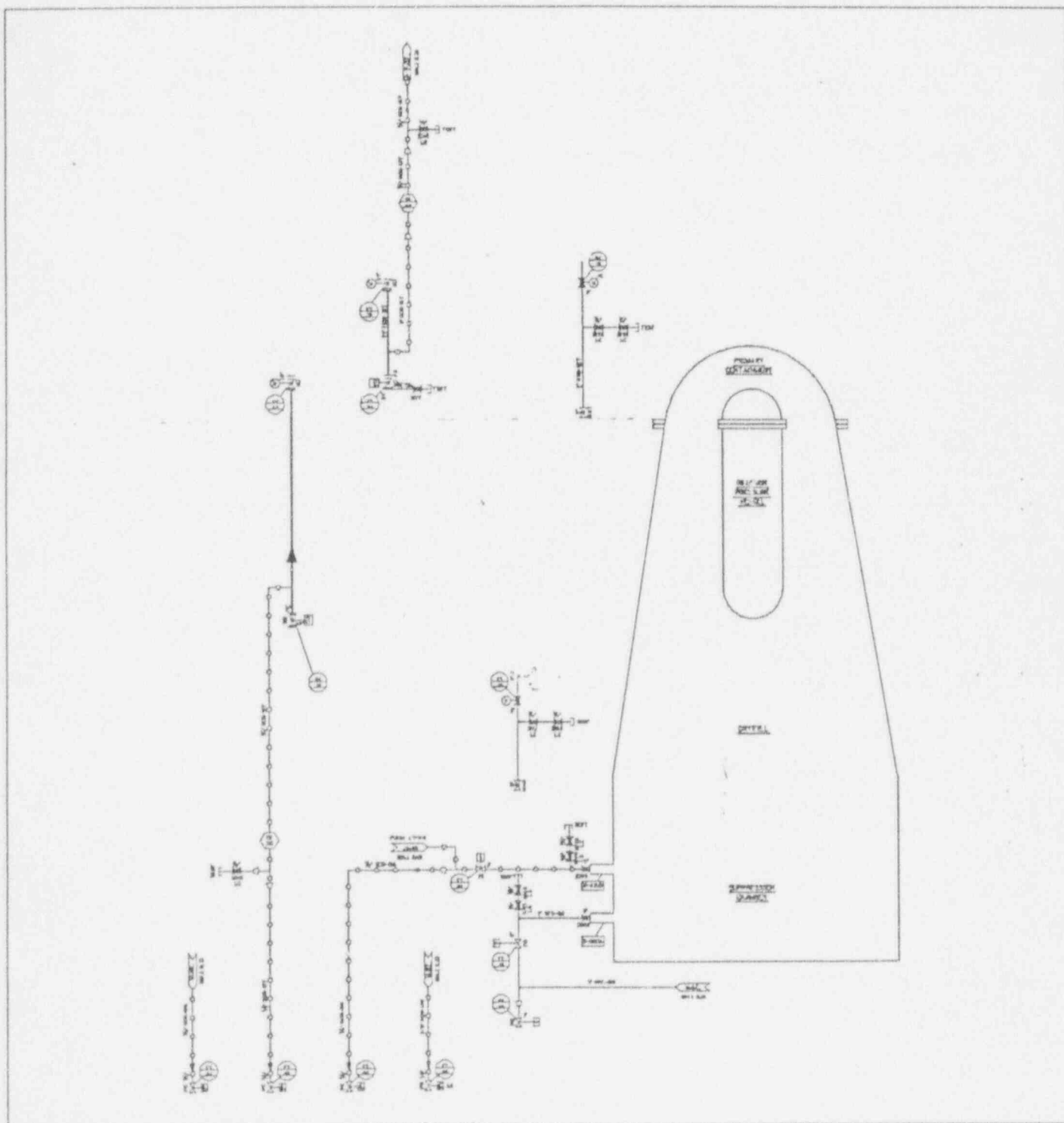
- 1) LLRTs are performed more frequently than periodic system functional tests.
- 2) LLRTs have the ability to quantify leakage which is not feasible with VT-2 inspection on this essentially gas-filled piping.
- 3) LLRTs conservatively include through valve leakage which would not be identified in a VT-2 inspection.

IV. ALTERNATE PROVISIONS

10CFR50 Appendix J Local Leak Rate Testing (LLRT) provides assurance of component integrity.

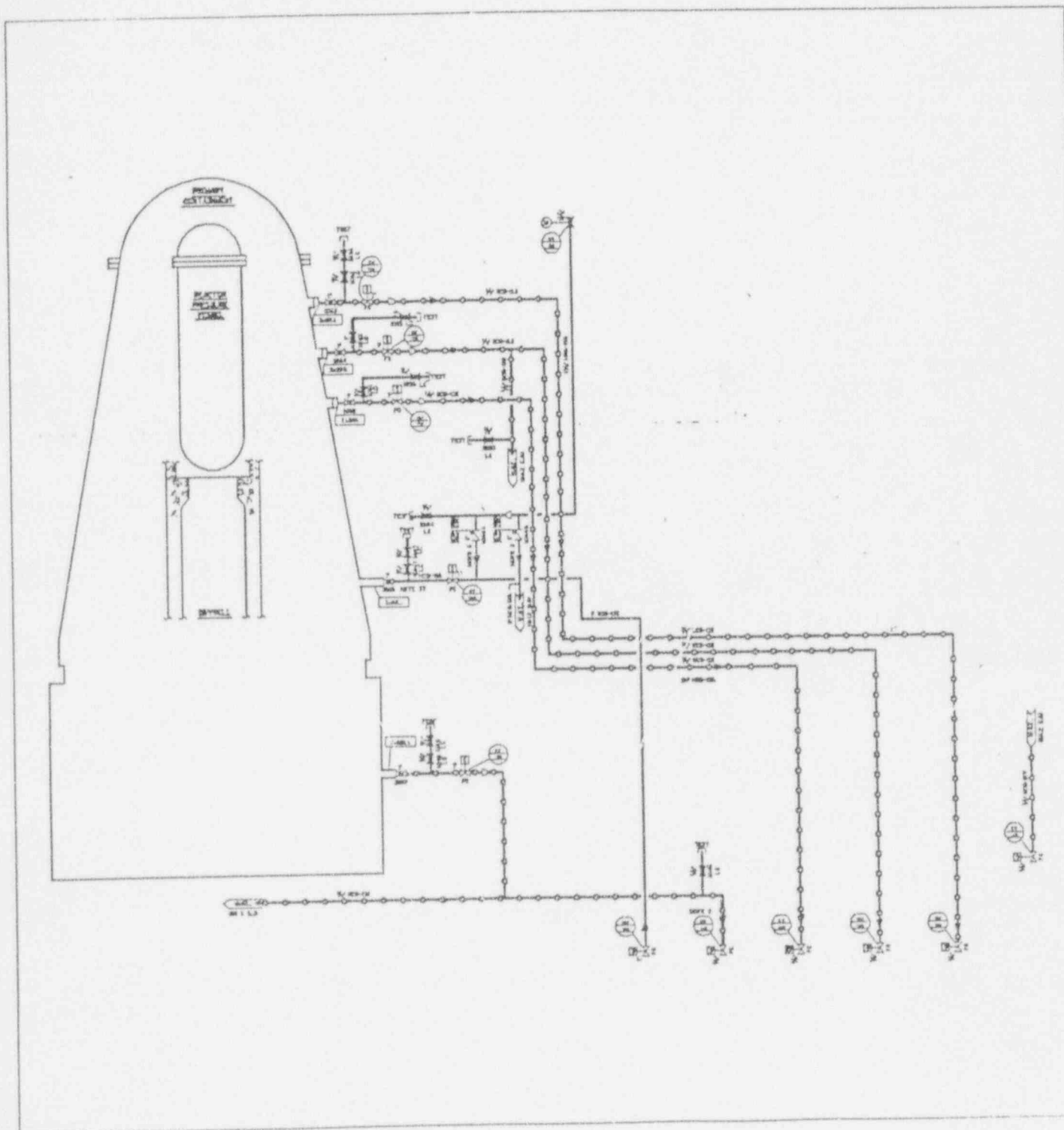
## (Continued)

(Ref. P&ID: ISI-M-57, Sht 2)



Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Figure RR-13-1.7b  
(Ref. P&ID: ISI-M-57, Sht 1)



Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.8

(Withdrawn)

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.9

(Withdrawn)

|

Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.10  
Revision 2

I. Identification of Components

Class 2 Plant Process Radiation Monitoring System piping HCB-128, between and including valves 26-1009, 26-1011, SV-26-190A & B, and 26-1010, 26-1012, SV-26-190C & D. (Ref. P&ID: ISI-M-26, Shts 1 & 2)

II. Code Requirement From Which Relief Is Requested

IWC-5221, System pressure test during system functional/in-service tests and,  
IWC-5222, System hydrostatic test

III. Basis For Relief

During normal plant operation, this piping is exposed to containment pressure. The pressurizing fluid is essentially nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive. 10CFR50 Appendix J Local Leak Rate Testing (LLRT) is performed once per Refuel Outage for leakage.

During LLRTs, the subject piping is pressurized to 44 psig, a substantially higher pressure than that developed during a system pressure test. As such, the LLRT offers the following advantages over system pressure tests:

- 1) LLRTs are performed more frequently than periodic system pressure tests and the ten year hydrostatic test.
- 2) LLRTs have the ability to quantify leakage which is not feasible with VT-2 inspections on air systems.
- 3) LLRTs conservatively include through valve leakage which would not be identified in a VT-2 inspection.

IV. ALTERNATE PROVISIONS

10CFR50 Appendix J Local Leak Rate Testing (LLRT) provides assurance of component integrity.



Limerick Generating Station, Unit 1  
RELIEF REQUEST NO. RR-13  
Revision 2  
(Continued)

Table RR-13-1.11  
Revision 2

I. Identification of Components

Class 2 Primary Containment Instrument Gas System piping, as follows:

HCB-109 piping and components at penetration X-40F, between and including valves HV-59-102 and HV-59-101.

Tubing and components from and including valves XV-59-141A, B, C, D, E, to penetration X35C, D, E, F, and G respectively.  
(Ref. P&ID: ISI-M-59, Sht 1).

II. Code Requirement From Which Relief Is Requested

IWC-5221, System pressure test during system functional/in-service tests and,  
IWC-5222, System hydrostatic test

III. Basis For Relief

During normal plant operation, this piping is exposed to containment pressure. The pressurizing fluid is essentially nitrogen gas. A VT-2 inspection looking for a nitrogen gas leak with less than 1 psig driving pressure would be inconclusive. 10CFR50 Appendix J Local Leak Rate Testing (LLRT) is performed once per Refuel Outage for leakage. The Local Leak Rate tests offer the following advantages over system pressure tests:

- 1) LLRTs are performed more frequently than periodic system pressure tests and the ten year hydrostatic test.
- 2) LLRTs have the ability to quantify leakage which is not feasible with VT-2 inspections on air systems.
- 3) LLRTs conservatively test some unclassified piping and includes through valve leakage which would not be identified in a VT-2 inspection.
- 4) LLRTs are at higher pressure (44 psig) than normal operation.

IV. ALTERNATE PROVISIONS

10CFR50 Appendix J Local Leak Rate Testing (LLRT) provides assurance of component integrity.