Exelon Nuclear
200 Exelon Way
Kennett Square, PA 19348

www.exeloncorp.com

Exelon Nuclear

10 CFR 50.55a

September 20, 2001

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

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Second Ten-Year Interval Inservice Inspection (ISI) Program

References:
1) Letter from J. A. Hutton (PECO Energy Company) to U. S. Nuclear Regulatory Commission (USNRC), dated January 9, 2001
2) Letter from C. Gratton (USNRC) to O. D. Kingsley (Exelon Generation Company, LLC), dated May 4, 2001
3) Letter from J. A. Hutton (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission (USNRC), dated May 15, 2001
4) Letter from J. A. Hutton (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission (USNRC), dated May 23, 2001
5) Letter from J. A. Hutton (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission (USNRC), dated June 27, 2001
6) Letter from M. P. Gallagher (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission (USNRC), dated August 16, 2001

Dear Sir/Madam:

In the Reference 1 letter, PECO Energy Company (now Exelon Generation Company, LLC) submitted proposed relief requests and alternatives for review and approval concerning the update of the Second Ten-Year Interval Inservice Inspection (ISI) Program for Limerick Generating Station (LGS), Units 1 and 2. As a result of a

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telephone conversation between the U. S. Nuclear Regulatory Commission and Exelon Generation Company, LLC, on June 21, 2001, attached are responses to questions discussed during this conversation.

If you have any questions, please contact us.

Very truly yours,

Michael P. Gallagher
Director-Licensing

cc: H. J. Miller, Administrator, Region I, USNRC
A. L. Burritt, USNRC Senior Resident Inspector, LGS
C. Gratton, Senior Project Manager, USNRC

ATTACHMENT

RESPONSE TO JUNE 21, 2001 QUESTIONS

CONCERNING SECOND TEN-YEAR INTERVAL

INSERVICE INSPECTION (ISI) PROGRAM

General Information for Reference:

Relief Request No. RR-06, Revision 0, Relief Request No. RR-07, Revision 0, and Relief Request No. RR-13, Revision 2 were previously approved by the NRC for use at Limerick Generating Station, Units 1 and 2, for the first 10-year inservice inspection interval per the following safety evaluations:

(1) Letter from W. R. Butler (NRC) to G. J. Beck (Philadelphia Electric Company), dated April 23, 1991.

(2) Letter from C. L. Miller (NRC) to G. A. Hunger, Jr. (Philadelphia Electric Company), dated March 1, 1994.

(3) Letter from J. F. Stolz (NRC) to G. A. Hunger, Jr. (PECO Energy Company), dated October 5, 1995.

Discussion of Request for Additional Information:

Question:

"2.1 Request for Relief No. RR-06, Revision 1 – Pursuant to 10 CFR 50.55a(g)(6)(i), the licensee requested relief from complete examination of the shell to flange weld on all heat exchangers in both Units due to limited access resulting from component design. The licensee proposed to perform the ultrasonic examination to the maximum extent practical (i.e., approximately 87.5%).

The licensee did not provide documentation, including photos, sketches, or calculations, to justify why the Code requirements are impractical. In addition, the licensee indicated that the limitations to complete volumetric examinations are also applicable to surface examination techniques. In order for the proposed relief to be acceptable, please provide the following:

(1) For each of the four RHR heat exchangers (i.e., two in each Unit), demonstrate how the transverse scans using ultrasonic examination will achieve the maximum extent possible of 87.5% of the Code volume requirement. Include photos, sketches, drawings, or calculations as appropriate.

(2) Justify why the access restrictions from the flange bolting are applicable to surface examinations for each of the four RHR heat exchangers."

Response:

(1) A sketch showing the physical limitation to the RHR heat exchanger shell to flange welds is provided in Attachment 1. The 87.5% coverage is an estimate based on the obstructions created by bolting, which prevents obtaining the required code coverage.

(2) The RHR heat exchanger shell to channel connection is a mechanical joint comprised of 64 (1 1/8") studs each secured with 2 heavy hex nuts. The diameter of the bolt circle is 58 5/8" and the shell outside diameter in the area of the flange bolting is 55 5/8" for LGS Unit 1 and 55 1/8" for LGS Unit 2. This places the nut for the shell to channel connection in the base

metal portion of the weld and required volume (WRV) of the shell to flange weld with the height of the nut interfering with access to the weld portion of the WRV. These restrictions prevent surface examinations of the shell to flange welds.

Ultrasonic examinations for reflectors parallel to the weld seam (axial scans) are performed from the shell side of the weld and are essentially complete using a sufficiently long examination beam path to provide coverage of the WRV in two beam path directions. Ultrasonic examinations for reflectors transverse to the weld seam (parallel scans) are performed on the accessible portions of the weld crown between the heavy hex nuts using one-half V path techniques.

The WRV adjacent to the 64 heavy hex nuts is inaccessible to ultrasonic scans due to the heavy hex nuts covering portions of the base metal and the height of the nut blocking access to portions of the weld seam. Therefore, the 87.5% coverage is an estimate based on the obstructions created by bolting, which prevents obtaining the required code coverage. The use of magnetic particle and liquid penetrant examination methods does not result in an increase of Code coverage since these same limitations to ultrasonic parallel scans preclude access to the WRV for surface preparation.

Question:

"2.2 Request for Relief No. RR-07, Revision 1 – Pursuant to 10 CFR 50.55a(g)(6)(i), the licensee requested relief from the examination of inaccessible pressure retaining pump casing welds on the RHR and Core Spray (CS) pumps due to plant/component design. The licensee's proposed alternative includes performing surface examination from inside of the pump casing when accessible, taking credit for visual examinations performed during system leakage and hydrostatic tests, and taking credit for functional tests.

The licensee proposed that in the event the subject welds become accessible upon disassembly of any one of the pumps, the welds will be surface examined from the inside surface or a VT-1 visual examination will be performed for that particular pump group to the maximum extent practicable. The examination method will be determined based on radiation environment data at the time access is enabled. In addition, all pumps are subject to the visual examination (VT-2) requirements during the system leakage test and the hydrostatic test of the Examination Category C-H, and the functional test of Section IWP, thereby providing assurance of pump structural integrity. In order for the proposed alternative to be acceptable, please provide the following:

(1) For all 8 RHR and 8 CS pumps, demonstrate with photos, sketches, and/or drawings that none of the subject pump casing outside surfaces are accessible for surface examination.

(2) Clarify the statement in the alternate provisions, "The examination method will be determined based on radiation environment data at the time access is enabled." Explain how the examination method to be chosen based on the radiation environment covers the Code required surface of the inside pump casing. Include the maximum and minimum Code-required surfaces that could be examined."

Response:

(1) A sketch showing the physical limitation to the Core Spray (CS) pump and Residual Heat Removal (RHR) pump casing welds is provided in Attachments 2 and 3, respectively.

(2) The RHR and CS pumps are deep well vertical shaft pumps. The RHR pumps are Ingersoll-Dresser model 34APKD four stage enclosed impeller pumps. The CS pumps are Ingersoll-Dresser model 25APKD six stage enclosed impeller pumps. The number in the model identifier corresponds to the pump diameter. The pumps are supported in the vertical position by a mounting flange that is welded to the shell. The shell, which is fabricated from welded plate, encloses the pumping element and provides for immediate containment of the liquid being pumped. The shell contains a suction nozzle that is flanged for connection to the piping system.

The deep well construction of the pumps has resulted in the outside surface of all shell fabrication welds being encased in concrete. Access to these welds is only enabled from inside the shell when the pump is disassembled and the pumping element is removed. Pump disassembly and removal of the pumping elements results in a significant breach in emergency core cooling system piping. However, when removal is required for pump maintenance or repair, radiological conditions may necessitate leaving the shell filled with water in order to provide a level of shielding to keep dose to personnel as low as reasonably achievable. The shell, filled with water, precludes access to the inside surface of the welds to surface examination techniques; however, remote visual examinations can be performed of the weld and adjacent base metal in accordance with IWA-2210.

Question:

"2.3 Request for Relief No. RR-12, Revision 3 (Table RR-12-8) – Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee requested relief from the preparation of Inservice Inspection (ISI) Summary Reports, which contain completed Form NIS-1, "Owner's Report for Inservice Inspection" and Form NIS-2, "Owner's Report for Repair or Replacement." Alternatively, the licensee proposes to implement the provisions of ASME Section XI Code Case N-532, "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000," including replacement activities per IWA-7000, which is not yet approved by reference in Regulatory Guide 1.147. In order for the proposed alternative to be acceptable, please provide the following:

(1) In section III, fourth paragraph, fourth sentence of the relief request, it is stated, "The other use of the term, as found in IWX-3000, involves maintenance activities that do not involve repairs or replacements." Clarify if Subsection IWX represents Subsection IWB, IWC, IWD, IWE, IWF, or IWL.

(2) The alternative provisions by the licensee include the use of the Code Case N-532 in its entirety with the clarification stated in the 'Basis for Alternative' regarding the provisions in paragraph 2(c) of the Code Case for reporting corrective measures. Clarify how the provisions in paragraph 2(c) of the Code Case exclude the routine maintenance activities from reporting."

Response:

(1) The term "Subsection IWX-3000", used in Section III ("Basis for Alternative"), fourth paragraph, fourth sentence of Relief Request Table No. RR-12-12-8, is intended to represent ASME Section XI Code Subsections IWB-3000, IWC-3000, IWD-3000, IWE-3000, IWF-3000, and IWL-3000.

(2) The clarification stated in Section III ("Basis for Alternative") of relief request Table No. RR-12-8 was an attempt to address the reporting requirements for corrective measures taken for flaws and relevant conditions that do not exceed the acceptance standards in ASME Section XI Code Subsections IWB-3000, IWC-3000, IWD-3000, IWE-3000, IWF-3000, and IWL-3000. Consistent with Paragraph 2(c) of Code Case N-532 for the reporting of corrective measures, LGS will continue to report maintenance activities that correct or otherwise reduce to an acceptable level flaws and relevant conditions that exceed the acceptance standards in ASME Section XI Code Subsections IWB-3000, IWC-3000, IWD-3000, IWE-3000, IWF-3000, and IWL-3000.

Question:

"2.4 Request for Relief No. 13, Revision 3 – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the subject pressure test requirements for specific components listed in Tables RR-13-1 through RR-13-8 due to hardship imposed by plant design and/or redundant testing. Other tests that are proposed as an alternative to the pressure tests for these specific components are also addressed in these Tables. In order for the proposed alternative to be considered, please provide the following:

(1) The specific Class 2 and 3 components covered by this relief request are detailed in Tables RR-13-1 through RR-13-8. This particular relief request is just a summary statement for the eight specific relief requests detailed in these tables. Please clarify the intention of this relief request.

(2) In accordance with the 1989 ASME Code, Examination Category C-H (Item Numbers C7.10 through C7.80) for Class 2, and Examination Categories D-A (Item Number D1.10), Examination Categories D-B (Item Number D2.10) and Examination Categories D-C (Item Number D3.10) for Class 3, all pressure retaining components are subject to VT-2 visual examinations during both the system leakage test every inspection period and the system hydrostatic test every inspection interval. Clarify why the system hydrostatic test requirement has not been identified under the Code requirements.

(3) Under Section IV, second paragraph of the relief request it is stated, "PECO Energy shall perform the required leakage tests at the peak calculated containment pressure using a test procedure that provides for the detection and location of through-wall leakage in the pipe segments being tested. CM-7". Clarify the meaning of this statement. Specifically, discuss what is the meaning of CM-7.

(4) Regarding Request for Relief No. RR-13 in general, please justify that the proposed alternatives provide reasonable assurance of structural integrity, and that compliance of the code requirements results in hardship without any increase in safety."

Response:

(1) Relief Request No. RR-13 provides a summary statement of the applicable components, examination requirements, basis, and proposed alternative. Specific details are provided in Tables RR-13-1 through RR-13-8 of the relief request.

(2) Section I of Relief Request No. RR-13 uses the Category and Item Numbers from the ASME Section XI Code, Tables IWC-2500-1 and IWD-2500-1, to identify the group of components for which relief is being requested. For ASME Class 1 and 2 components, separate Item Numbers are used to differentiate the components that are subject to the system leakage test from the components that are subject to the system hydrostatic test. However, for Class 3 components, ASME Section XI uses only one Item Number for both the system leakage and system hydrostatic test. Accordingly, the system hydrostatic test for Class 3 components has been identified in Relief Request No. RR-13.

(3) The statement in Section IV, second paragraph, of Relief Request No. RR-13, "PECO Energy shall perform the required leakage tests at the peak calculated containment pressure using a test procedure that provides for the detection and location of through-wall leakage in the pipe segments being tested. CM-7", is a commitment identified in the USNRC Staff's SER which approved Relief Request No. RR-13 for use during the LGS Units 1 and 2 first 10-year inspection interval. The symbol "CM-7" is an internal commitment tracking annotation, which does not impact the technical content of the request. Additionally, reference to "PECO Energy" has be changed to "Exelon Generation Company, LLC" as discussed in our letter from M. P. Gallagher (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, dated August 16, 2001.

(4) Justification that the proposed alternative provides assurance of structural integrity, and that compliance with the ASME Section XI Code requirements results in hardship without any compensating increase in safety are included in Tables RR-13-1 through RR-13-8 of the relief request. Additional justification is provided in the following responses concerning Tables RR-13-1 through RR-13-8.

Question:

"2.5 Request for Relief No. 13, Revision 3 (Table RR-13-1) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system inservice test and system hydrostatic test requirements for the nuclear boiler vessel instrumentation tubing to drywell pressure instrumentation outboard due to hardship imposed by plant design and/or redundant testing. Alternatively, LGS Technical Specification operability checks and Integrated Leak Rate Testing (ILRT) will provide assurance of component integrity and will be utilized to satisfy ASME Section XI requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Technical Specifications for channel checks to verify drywell pressure instrumentation operability. Demonstrate that the subject instrumentation tubing and components are specifically included in channel checks.

(2) Integrated Leak Rate Testing (ILRT) plan and its frequency for the LGS Units. Demonstrate that the tubing and components are included in the ILRT.

(3) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(4) Examination Category and Item Number applicable to subject tubing and components."

Response:

(1) Limerick Generating Station, Units 1 and 2 Technical Specification Table 4.3.1.1-1 requires a check, once per shift (every 12 hours), of drywell pressure. Procedures require a check of the remote pressure indicators using the subject instrumentation tubing and components. The normal range for these instruments is 0-1 psig.

(2) Procedures require that valves HV-42-1(2)47A,B,C,D be open to perform the Integrated Leak Rate Test (ILRT). Therefore, the instrument tubing is subject to the pressure required by the ILRT and is within the ILRT boundary. The Unit 1 ILRT was performed on 08/03/84, 08/13/87, 11/23/90, and 05/17/98. It is currently on a 10-year frequency, as allowed by 10 CFR 50 Appendix J Option B. The Unit 2 ILRT was performed on 05/08/89, 03/12/93, and 5/22/99. It is currently also on a 10-year frequency, as allowed by 10 CFR 50 Appendix J Option B.

(3) There are no test taps on the subject instrument tubing and plant modifications would be required in order to perform the ASME Section XI pressure tests resulting in a hardship. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is also a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to perform channel checks of the remote pressure indicators to verify drywell pressure instrumentation operability every 12 hours in accordance with the plant Technical Specifications, and the use 10 CFR 50 Appendix J, Option B Integrated Leak Rate Testing provides adequate assurance of structural integrity of the tubing and components, and therefore an acceptable level of quality and safety.

(4) The instrument tubing identified in Relief Request No. RR-13, Table RR-13-1, is ASME Class 3, Code Category D-A, Item No. D1.10.

Question:

"2.6 Request for Relief No. RR-13, Revision 3 (Table RR-13-2) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system pressure test during system functional/inservice tests and system hydrostatic test requirements for the RCIC turbine exhaust vacuum breaker lines and RCIC vacuum pump exhaust to suppression pool lines due to hardship imposed by plant design and/or redundant testing. Alternatively, 10CFR50 Appendix J Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Local Leak Rate Testing (LLRT) plan for LGS Units. Demonstrate that the subject vacuum breaker and vacuum exhaust lines are included in the LLRT.

(2) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(3) Item Number for the Examination Category applicable to subject components."

Response:

(1) Local Leak Rate Testing (LLRT) is performed in accordance with 10 CFR 50 Appendix J, Option B. Currently, the LLRT's for the subject piping are performed every refuel outage (24 month cycle). The LLRT boundary is identified in surveillance test procedures, and includes the subject vacuum breaker and exhaust lines.

(2) The subject piping and components are required to be LLRT tested under 10 CFR 50 Appendix J, Option B, as part of the containment penetration boundary. An additional pressure test once every inspection period, and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to use 10 CFR 50 Appendix J, Option B Local Leak Rate Testing provides adequate assurance of structural integrity and therefore an acceptable level of quality and safety.

(3) The piping identified in Relief Request No. RR-13, Table RR-13-2, is ASME Class 2, Code Category C-H, Item Nos. C7.30 and C7.40. The valves are ASME Class 2, Code Category C-H, Item Nos. C7.70 and C7.80.

Question:

"2.7 Request for Relief No. RR-13, Revision 3 (Table RR-13-3) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system pressure test during system functional/inservice tests and system hydrostatic test requirements for the HPCI turbine exhaust vacuum breaker lines due to hardship imposed by plant design and/or redundant testing. Alternatively, 10CFR50 Appendix J Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Local Leak Rate Testing (LLRT) plan for LGS Units. Demonstrate that the subject vacuum breaker are included in the LLRT.

(2) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(3) Item Number for the Examination Category applicable to subject components."

Response:

(1) Local Leak Rate Testing (LLRT) is performed in accordance with 10 CFR 50 Appendix J, Option B. Currently, the LLRT's for the subject piping are performed every refuel outage (24

month cycle). The LLRT boundary is identified in surveillance test procedures, and includes the subject vacuum breaker and exhaust lines.

(2) The subject piping and components are required to be LLRT tested under 10 CFR 50 Appendix J, Option B, as part of the containment penetration boundary. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to use 10 CFR 50 Appendix J, Option B Local Leak Rate Testing provides adequate assurance of structural integrity and therefore an acceptable level of quality and safety.

(3) The piping identified in Relief Request No. RR-13, Table RR-13-3, is ASME Class 2, Code Category C-H, Item Nos. C7.30 and C7.40. The valves are ASME Class 2, Code Category C-H, Item Nos. C7.70 and C7.80.

Question:

"2.8 Request for Relief No. RR-13, Revision 3 (Table RR-13-4) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system inservice tests and system hydrostatic test requirements for the containment atmospheric control tubing to suppression pool pressure and level instrumentation outboard due to hardship imposed by plant design and/or redundant testing. Alternatively, LGS Technical Specification suppression pool instrumentation operability checks and Integrated Leak Rate Test (ILRT) provide assurance of component integrity and will be utilized to satisfy ASME Section XI requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Technical Specifications for channel checks to verify suppression pool pressure instrumentation operability. Demonstrate that the subject instrumentation tubing and components are specifically included in channel checks.

(2) Integrated Leak Rate Testing (ILRT) plan and its frequency for the LGS Units. Demonstrate that the tubing and components are included in the ILRT.

(3) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(4) Examination Category and Item Number applicable to subject tubing and components."

Response:

(1) Limerick Generating Station, Units 1 and 2 Technical Specification 4.6.1.6 requires a check, once per shift (every 12 hours), of suppression pool pressure, and Technical Specification 4.5.3.1 requires a check, once per shift (every 12 hours), of the suppression pool level. Procedures require the checking of remote pressure and level indicators which utilize the subject instrumentation tubing and components.

(2) Procedures require that valves SV-57-1(2)01 be open to perform the Integrated Leak Rate Test (ILRT). Therefore, the instrument tubing is subject to the pressure required by the ILRT

and is within the ILRT boundary. The Unit 1 ILRT was performed on 08/03/84, 08/13/87, 11/23/90, and 05/17/98. It is currently on a 10-year frequency, as allowed by 10 CFR 50 Appendix J Option B. The Unit 2 ILRT was performed on 05/08/89, 03/12/93, and 5/22/99. It is currently also on a 10-year frequency, as allowed by 10 CFR 50 Appendix J, Option B.

(3) There are no test taps on the subject instrument tubing and plant modifications would be required in order to perform the ASME Section XI pressure tests resulting in a hardship. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is also a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to perform channel checks of the remote pressure indicators every 12 hours and the use 10 CFR 50 Appendix J, Option B Integrated Leak Rate Testing provides adequate assurance of structural integrity and therefore an acceptable level of quality and safety.

(4) The instrument tubing identified in Relief Request No. RR-13, Table RR-13-4, is ASME Class 3, Code Category D-A, Item No. D1.10.

Question:

"2.9 Request for Relief No. RR-13, Revision 3 (Table RR-13-5) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system pressure test during system functional/inservice tests and system hydrostatic test requirements for the post-LOCA recombiner piping and hydrogen/oxygen sampling lines due to hardship imposed by plant design and/or redundant testing. Alternatively, System Contaminated Pipe Inspection (CPI) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Contaminated Pipe Inspection (CPI) plan for the LGS Units. Demonstrate that the subject lines are included in the CPI program. Explain the CPI testing associated with the Leak Reduction Program (UFSAR 6.2.8).

(2) Clarify if sampling lines are included in the CPI Program.

(3) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(4) Item Number for the Examination Category applicable to subject components."

Response:

(1) Inspections associated with the Contaminated Pipe Inspection (CPI) procedures for the subject piping and components are performed on a 24 month frequency. The subject piping and components are identified in surveillance test procedures for LGS, Units 1 and 2. The Contaminated Pipe Inspection Program is the Leak Reduction Program as described in UFSAR 6.2.8 ("Leakage Reduction Program"). The term "Contaminated Pipe Inspection" comes from the surveillance test procedure used to satisfy the Leak Reduction Program as described in UFSAR Section 6.2.8.

(2) The subject piping and components are inspected as part of the CPI Program as required by Limerick Generating Station, Units 1 and 2 Technical Specification 6.8.4.a, and described in UFSAR Section 6.2.8. The applicable CPI boundaries are identified in surveillance test procedures and includes the subject sampling lines.

(3) The subject lines HBB-127, HBB-128, HBB-227, and HBB-228 and components within those lines, as described in the relief request, are required to be LLRT tested under 10 CFR 50 Appendix J, Option B, and are also required to be examined under the Contaminated Pipe Inspection Program. The subject lines HBB-116, HBB-117, HBB-216, and HBB-217 and components within those lines, as described in the relief request, are required to be examined under the Contaminated Pipe Inspection Program as required by Technical Specification 6.8.4.a and as described in UFSAR Section 6.2.8. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to use 10 CFR 50 Appendix J, Option B, Local Leak Rate Testing and Contaminated Pipe Inspections as described above provides adequate assurance of structural integrity and therefore an acceptable level of quality and safety.

(4) The piping identified in Relief Request No. RR-13, Table RR-13-5 is ASME Class 2, Code Category C-H, Item Nos. C7.30 and C7.40. The valves are ASME Class 2, Code Category C-H, Item Nos. C7.70 and C7.80.

Question:

"2.10 Request for Relief No. RR-13, Revision 3 (Table RR-13-6) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system pressure test during system functional/inservice tests and system hydrostatic test requirements for the primary containment atmospheric control piping due to hardship imposed by plant design and/or redundant testing. Alternatively, 10CFR50 Appendix J Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Local Leak Rate Testing (LLRT) plan for the LGS Units. Demonstrate that the subject lines are included in the LLRT.

(2) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(3) Item Number for the Examination Category applicable to subject components."

Response:

(1) Local Leak Rate Testing is performed in accordance with 10 CFR 50 Appendix J, Option B. Currently, the LLRT procedures for this subject piping are performed every refuel outage (24 month cycle). The subject piping and valves are included in the LLRT boundaries described in various procedures.

(2) The subject piping and components are required to be LLRT tested under 10 CFR 50 Appendix J, Option B, as part of the containment penetration boundary. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to use 10 CFR 50 Appendix J, Option B Local Leak Rate Testing provides adequate assurance of structural integrity of the primary containment atmospheric control piping, and therefore an acceptable level of quality and safety.

(3) The piping identified in Relief Request No. RR-13, Table RR-13-6, is ASME Class 2, Code Category C-H, Item Nos. C7.30 and C7.40. The valves are ASME Class 2, Code Category C-H, Item Nos. C7.70 and C7.80.

In addition to the above response, a typographical error was found in RR-13, Table RR-13-6 in that lines identified by line class "HBC" are actually line class "HCB". This error is only typographical in nature and does not affect the intent of the relief request. Attached is a revised relief request.

Question:

"2.11 Request for Relief No. RR-13, Revision 3 (Table RR-13-7) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system pressure test during system functional/inservice tests and system hydrostatic test requirements for the plant process radiation monitoring system piping due to hardship imposed by plant design and/or redundant testing. Alternatively, 10CFR50 Appendix J Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Local Leak Rate Testing (LLRT) plan for the LGS Units. Demonstrate that the subject lines are included in the LLRT.

(2) What is the normal pressure of these lines?

(3) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(4) Item Number for the Examination Category applicable to subject components."

Response:

(1) Currently, the LLRT procedures for this subject piping are performed every refuel outage (24 month cycle). The subject piping and valves are included in the LLRT boundaries described in surveillance test procedures.

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

(3) The plant process radiation monitoring system piping is required to be LLRT tested under 10 CFR 50 Appendix J, Option B, as part of the containment penetration boundary. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to use 10 CFR 50 Appendix J, Option B Local Leak Rate Testing provides adequate assurance of structural integrity of the plant process radiation monitoring system piping, and therefore an acceptable level of quality and safety.

(4) The piping identified in Relief Request No. RR-13, Table RR-13-7, is ASME Class 2, Code Category C-H, Item Nos. C7.30 and C7.40. The valves are ASME Class 2, Code Category C-H, Item Nos. C7.70 and C7.80.

Question:

"2.12 Request for Relief No. RR-13, Revision 3 (Table RR-13-8) – Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from meeting the system pressure test during system functional/inservice tests and system hydrostatic test requirements for the primary containment instrument gas system piping due to hardship imposed by plant design and/or redundant testing. Alternatively, 10CFR50 Appendix J Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements. In order for the proposed alternative to be acceptable, please provide the following:

(1) Local Leak Rate Testing (LLRT) plan for the LGS Units. Demonstrate that the subject lines are included in the LLRT.

(2) What is the normal pressure for the Containment Instrument Gas? Also, since the LLRT pressure is lower than the normal system pressure, justify why monitoring at this lower pressure is adequate and conservative.

(3) Clarify what sort of hardship has been imposed by plant design and/or redundant testing.

(4) Item Number for the Examination Category applicable to subject components."

Response:

(1) Currently, the LLRT procedures for the primary containment instrument gas system piping are performed every refuel outage (24 month cycle). All subject piping and valves are included in the LLRT boundaries described in surveillance test procedures.

(2) During normal plant operation, this piping is nominally at 100 psig. Although LLRT testing is performed at the containment peak design pressure, nominally 44 psig, there is sufficient driving force during the LLRT for the detection and location of through wall leakage thus making the test results conclusive. LLRT testing of the subject piping and components is adequate because the tests are performed more frequently than ASME Section XI periodic system pressure tests and the 10-year hydrostatic test. Also, LLRTs have the ability to quantify leakage that is not feasible with VT-2 inspections on air systems. LLRT testing of

the subject piping and components is conservative because the LLRT boundary includes some unclassified piping and through seat valve leakage that would not be identified in a VT-2 inspection.

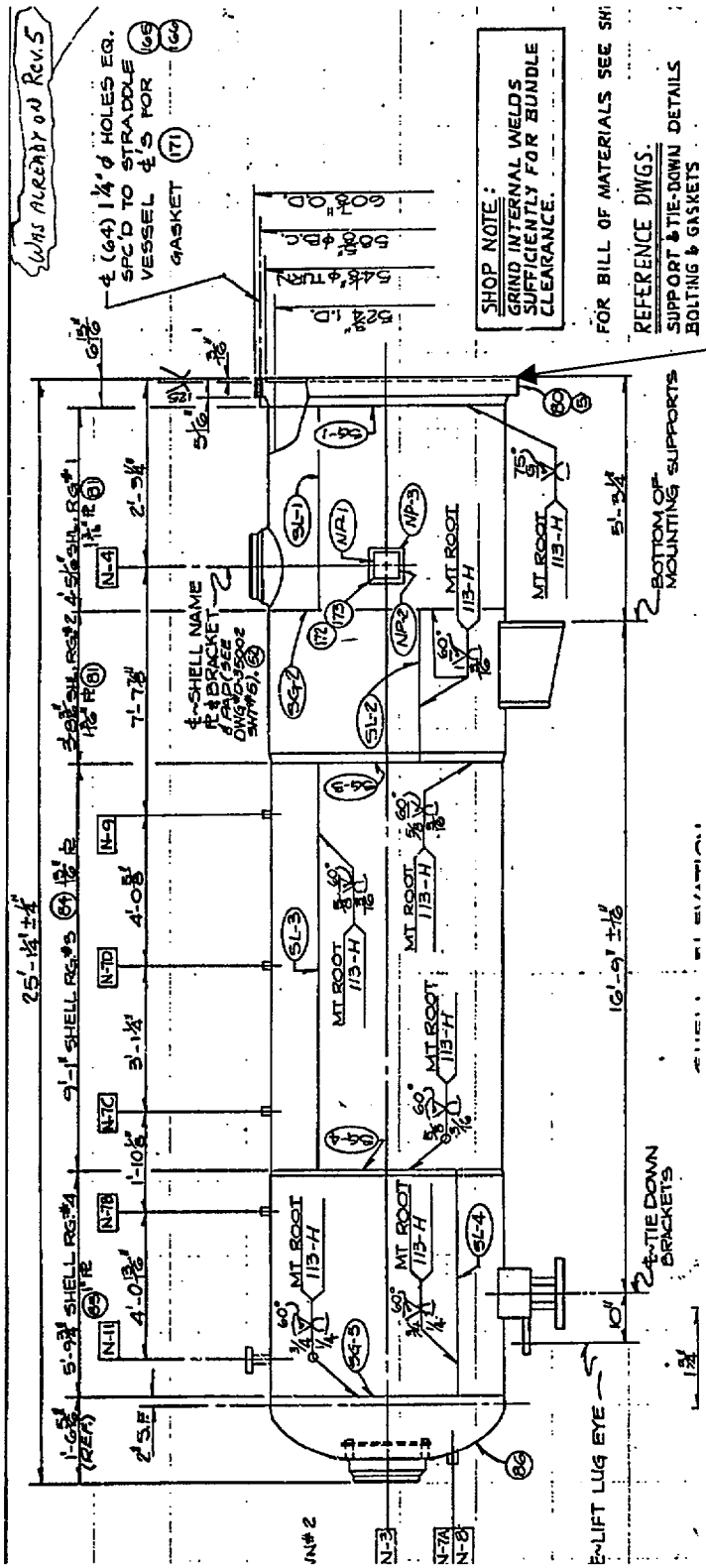
(3) The subject piping and components are required to be LLRT tested under 10 CFR 50 Appendix J, Option B, as part of the containment penetration boundary. An additional pressure test once every inspection period and a hydrostatic test once every inspection interval to satisfy ASME Section XI requirements is a hardship in that the ASME Section XI pressure tests would present a redundant testing situation that would result in additional radiation exposure to examination personnel without a compensating increase in the level of quality and safety. The proposed alternative to use 10 CFR 50 Appendix J, Option B, Local Leak Rate Testing provides adequate assurance of structural integrity and therefore an acceptable level of quality and safety.

(4) The piping identified in Relief Request No. RR-13, Table RR-13-8 is ASME Class 2, Code Category C-H, Item Nos. C7.30 and C7.40. The valves are ASME Class 2, Code Category C-H, Item Nos. C7.70 and C7.80.

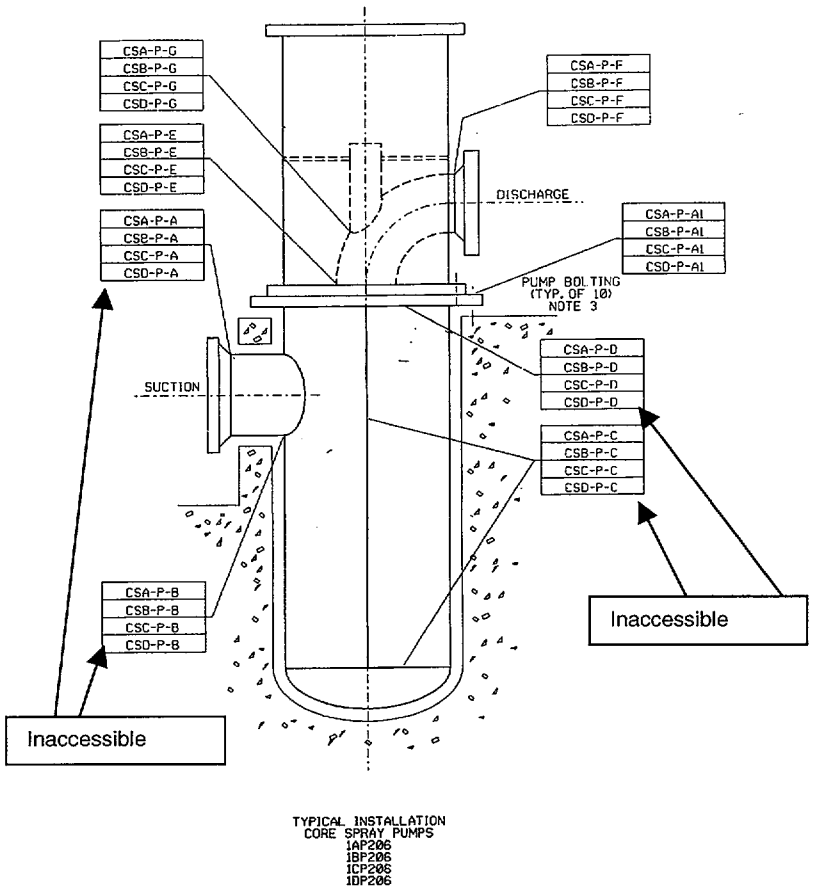
ATTACHMENT 1
(Refer to Question 2.1)

RHR HEAT EXCHANGER
(TWO PER UNIT)

Flange Connection



Attachment 2
Core Spray Pump
(Typical of 4 for each Unit)
(Refer to Question 2.2)



TYPICAL INSTALLATION
CORE SPRAY PUMPS
1AP206
1BP206
1CP206
1DP206

NOTE:
1) LINE CONTINUATIONS:
a) 1AP206: SUCTION - FIGURE 04-03
DISCHARGE- FIGURE 04-03
b) 1BP206: SUCTION - FIGURE 04-06
DISCHARGE- FIGURE 04-06
c) 1CP206: SUCTION - FIGURE 04-03
DISCHARGE- FIGURE 04-03
d) 1DP206: SUCTION - FIGURE 04-06
DISCHARGE- FIGURE 04-06

2) C.S. PUMPS ARE SEISMIC CLASS I.

3) COMPONENTS SUBJECT TO VT-3 EXAMINATION PER SUBSECTION IWF. REFER TO EXAM PLAN TABLE.

REFERENCE DRAWINGS:

ISI-M-52 ASME SECTION XI BOUNDARY P&ID
MI-E21-C001 INGERSOLL RAND
F-25APKD 36INX1-K
SPEC. 8031-P-502 FIGURE 04-09

NO.	DATE	REVISIONS	BY	CHKD	ISI ENGR	GROUP SUPV	PROJ ENGR	PLCD APPR
0	12/84	ISSUED FOR 1ST INSP. INTERVAL.	MDC		RC	RC		REC

SCALE NONE DRAWN CADD/MDC

BECHTEL
SAN FRANCISCO

LIMERICK GENERATING STATION
UNITS 1 & 2
PHILADELPHIA ELECTRIC COMPANY

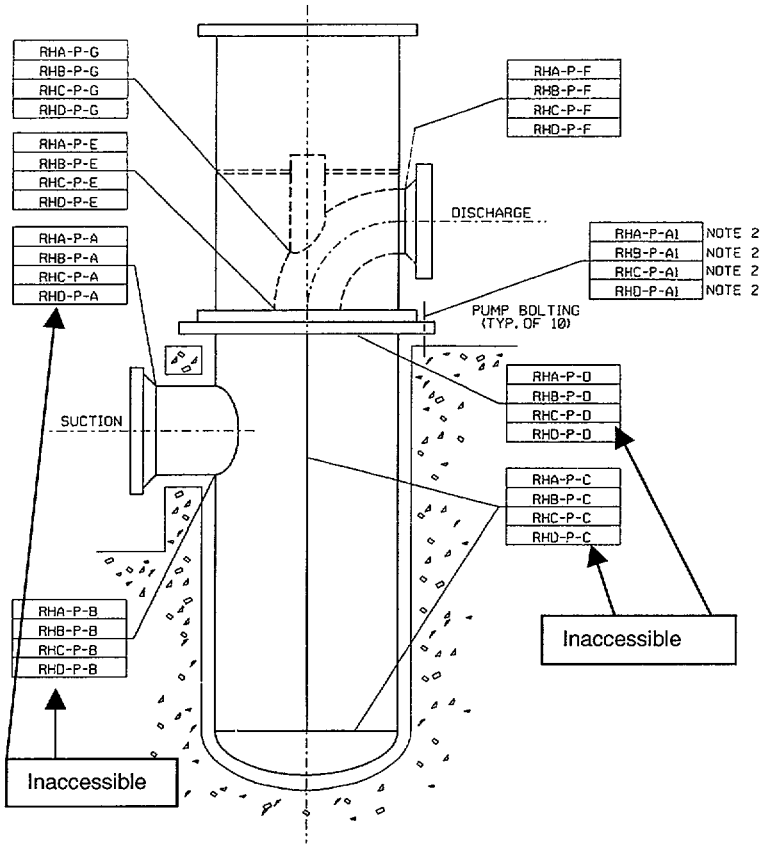
ISI EQUIP. DWG. - REACTOR BUILDING
CORE SPRAY PUMPS 1AP THRU 1DP206
SUPPORTS AND BODY WELDS - UNIT 1

JOB NO.	DRAWING NO.	REV.
8031	XI-IP-206	0

NOT FOR CONSTRUCTION | PAGE 1 OF 1

Attachment 3

Residual Heat Removal Pump
(Typical of 4 for each Unit)
(Refer to Question 2.2)



TYPICAL INSTALLATION
RHR PUMPS
1AP202
1BP202
1CP202
1DP202

NOTE:
1) LINE CONTINUATIONS:
a) 1AP202: SUCTION - FIGURE 01-03
DISCHARGE- FIGURE 01-03
b) 1BP202: SUCTION - FIGURE 01-06
DISCHARGE- FIGURE 01-06
c) 1CP202: SUCTION - FIGURE 01-08
DISCHARGE- FIGURE 01-08
d) 1DP202: SUCTION - FIGURE 01-10
DISCHARGE- FIGURE 01-10
2) COMPONENTS ARE SUBJECT TO VT-3 EXAMINATION PER SUBSECTION IWF.
3) PUMPS ARE SEISMIC CLASS I.

REFERENCE DRAWINGS:

ISI-M-51 ASME SECTION XI BOUNDARY P&ID
MI-EII-C002 INGERSOLL RAND
F-34APKD 361EX3-C
SPEC. 8031-P-502 FIGURE 01-27

NO.	DATE	REVISIONS	BY	CHKD	IS ENGR	GROUP SUPV	PROJ ENGR	PCCG APPR
0	6/96	ISSUED FOR 1ST INSP. INTERVAL.	MDC		RC	RC/JD		

SCALE NONE DRAWN CADD/MDC

BECHTEL
SAN FRANCISCO

LIMERICK GENERATING STATION
UNITS 1 & 2
PHILADELPHIA ELECTRIC COMPANY

ISI EQUIP. DWG. - REACTOR BUILDING
RHR PUMPS 1AP, 1BP, 1CP & 1DP202
SUPPORTS AND BODY WELDS - UNIT 1

JOB NO.	DRAWING NO.	REV.
8031	XI-1P-202	0

NOT FOR CONSTRUCTION | PAGE 1 OF 1

REVISED RELIEF REQUEST

RELIEF REQUEST NO. RR-13

TABLE RR-13-6

RELIEF REQUEST No. RR-13
Revision 3, continued

Table RR-13-6

I. IDENTIFICATION OF COMPONENTS

LGS Unit 1:
Class 2 Primary Containment Atmospheric Control piping, as follows:

Hydrogen/oxygen sample lines HCB-116, between and including containment penetrations X-28A and X-28B and valves SV-57-142, SV-57-143, SV-57-144 and SV-57-195. Reference P&ID ISI-M-57, Sheets 1 and 2.

Drywell low flow nitrogen makeup line HCB-116, between and including containment penetration X-62 and valves HV-57-116 and SV-57-159. Reference P&ID ISI-M-57, Sheet 1.

Hydrogen/oxygen sample lines HCB-116, between and including containment penetrations X-221A and valves SV-57-141 and SV-57-184. Reference P&ID ISI-M-57, Sheets 1 and 2.

Nitrogen purge line HBB-125, between and including Valves HV-57-109, HV-57-121 and HV-57-131. Reference P&ID ISI-M-57, Sheet 1.

Drywell air purge line HBB-124, between and including valves HV-57-123 and HV-57-135. Reference P&ID ISI-M-57, Sheet 1.

Suppression pool air purge line HBB-126, between and including valves HV-57-124 and HV-57-147. Reference P&ID ISI-M-57, Sheet 1.

Drywell purge to standby gas treatment line HBB-127, between and including valves HV-57-114 and HV-57-115, and line HCB-117, between and including connection to line HBB-127 and valve SV-57-145. Reference P&ID ISI-M-57, Sheets 1 and 2.

Suppression pool low flow nitrogen makeup line HCB-116, between and including containment penetration X-220A, valve SV-57-190 and connection to drywell low flow nitrogen makeup line HCB-116. Reference P&ID ISI-M-57, Sheets 1 and 2.

Hydrogen/oxygen sample line HCB-116, between and including containment penetration X221B and valves SV-57-186 and HV-55-126. Reference P&ID's ISI-M-57, Sheet 2, and ISI-M-55, Sheet 1.

Drywell purge exhaust bypass line HBB-127, between and including valves 57-1807 and HV-57-117. Reference P&ID ISI-M-57, Sheet 2.

Suppression pool purge exhaust bypass line HBB-128, between and including valves 57-1810 and HV-57-118. Reference P&ID ISI-M-57, Sheet 2.

Suppression pool purge air exhaust lines HBB-128 and HCB-117, between and including valves HV-57-104, HV-57-112 and SV-57-185. Reference P&ID ISI-M-57, Sheet 2.

RELIEF REQUEST No. RR-13
Revision 3, continued

Table RR-13-6, continued

LGS Unit 2:
Class 2 Primary Containment Atmospheric Control piping, as follows:

Hydrogen/oxygen sample lines HCB-216, between and including containment penetrations X-28A and X-28B and valves SV-57-242, SV-57-243, SV-57-244 and SV-57-295. Reference P&ID ISI-M-57, Sheets 4 and 5.

Drywell low flow nitrogen makeup line HCB-216, between and including containment penetration X-62 and valves HV-57-216 and SV-57-259. Reference P&ID ISI-M-57, Sheet 4.

Hydrogen/oxygen sample lines HCB-216, between and including containment penetrations X-221A and valves SV-57-241 and SV-57-284. Reference P&ID ISI-M-57, Sheets 4 and 5.

Nitrogen purge line HBB-225, between and including Valves HV-57-209, HV-57-221 and HV-57-231. Reference P&ID ISI-M-57, Sheet 4.

Drywell air purge line HBB-224, between and including valves HV-57-223 and HV-57-235. Reference P&ID ISI-M-57, Sheet 4.

Suppression pool air purge line HBB-226, between and including valves HV-57-224 and HV-57-247. Reference P&ID ISI-M-57, Sheet 4.

Drywell purge to standby gas treatment line HBB-227, between and including valves HV-57-214 and HV-57-215, and line HCB-217, between and including connection to line HBB-227 and valve SV-57-245. Reference P&ID ISI-M-57, Sheets 4 and 5.

Suppression pool low flow nitrogen makeup line HCB-216, between and including containment penetration X-220A, valve SV-57-290 and connection to drywell low flow nitrogen makeup line HCB-216. Reference P&ID ISI-M-57, Sheets 4 and 5.

Hydrogen/oxygen sample line HCB-216, between and including containment penetration X221B and valve SV-57-286. Reference P&ID ISI-M-57, Sheet 5.

Drywell purge exhaust bypass line HBB-227, between and including valves 57-2815 and HV-57-217. Reference P&ID ISI-M-57, Sheet 5.

Suppression pool purge exhaust bypass line HBB-228, between and including valves 57-1818 and HV-57-218. Reference P&ID ISI-M-57, Sheet 5.

Suppression pool purge air exhaust lines HBB-228 and HCB-217, between and including valves HV-57-204, HV-57-212 and SV-57-285. Reference P&ID ISI-M-57, Sheet 5.

RELIEF REQUEST No. RR-13
Revision 3, continued

Table RR-13-6, continued

II. CODE REQUIREMENT FROM WHICH AN ALTERNATIVE IS REQUESTED

IWC-5221, System Pressure Test During System Functional/Inservice Tests and,
IWC-5222, System Hydrostatic Test.

III. BASIS FOR ALTERNATIVE

During normal plant operation, this piping is either isolated or less than one (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 one (1) psig driving pressure would be inconclusive.

Appendix J Local Leak Rate Testing (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 periodic system functional test. As such, the LLRT offers the following advantages over system pressure tests:

A. LLRTs are performed more frequently than periodic system functional tests.

B. LLRTs have the ability to quantify leakage that is not feasible with VT-2 inspection on this essentially gas-filled piping.

C. LLRTs conservatively include through valve leakage that would not be identified in a VT-2 inspection.

IWC-5210(b) allows for air tests which permit location and detection of through-wall leakage. In the event the LLRT fails to meets its acceptance criteria, further testing would be performed to determine the location of the leaks, appropriate corrective maintenance and an appropriate retest would be performed.

IV. ALTERNATE PROVISIONS

10CFR50 Appendix J Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements.