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August 21, 1996

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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
License Amendment Request NPF-38-181
Discrepancy Regarding the Design and Testing of Instrument Sensing Lines Penetrating the Primary Containment

Gentlemen:

On July 23, 1996, a Condition Report was generated because it appeared that the current plant configuration did not agree with information provided to the NRC review staff during the initial licensing phase at Waterford 3 . The information was provided to justify the leak testing method that would be performed, on the Containment Vacuum Relief instrument sensing lines penetrating the primary containment, pursuant to 10 CFR 50 Appendix J. The justification provided by Waterford 3 was subsequently documented by the NRC staff in the Waterford 3 SER, issued in July 9, 1981, as the bases for accepting the design configuration and testing requirements for these instrument lines. Upon confirmation of the above discrepancy, Waterford 3 notified and described the condition to the NRC. In that discussion Waterford 3 indicated that an evaluation was being conducted under the provisions of 10 CFR 50.59 to determine the impact of the current configuration on plant safety. This evaluation analyzed the current plant configuration under postulated accident conditions and determined that the results were within the existing licensing bases limits. Additional provisions were then taken to provide for defense in depth approach. These provisions were also evaluated and determined acceptable under the provisions of 10 CFR 50.59.

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At this point Waterford 3 reviewed and evaluated a variety of solutions to resolve the identified discrepancy. The proposed solution as described herein was chosen because 1) the proposed change can be performed in a timely fashion 2) it can be performed on line without risk to the plant or plant personnel 3) the proposed fix will provide for a level of protection commensurate with the safety function to be performed.

Waterford 3 believes the proposed modification is an equivalent method for complying with the recommended position contained in Regulatory Guide 1.11 and seeks the staffs approval. In addition, the proposed change describes a modification to the plant that will remove a containment isolation valve and cap the line. The containment isolation valve is an automatic valve and therefore, is provided with direct position indication in the control room pursuant to Regulatory Guide 1.97 Post Accident Monitoring Instrumentation . The requirement for position indication on the penetration that will be affected by the modification, was included in the Operating License as a condition to be met prior to startup following first refuel. The license condition concerning position indication does not contribute to the discrepancy associated with the affected penetrations. However, with the proposed modification implemented no position indication will be required because no valve will be installed. Therefore, the attached description and safety analysis supports a license amendment request pursuant to 10 CFR 50.90 to remove statements in the license that will not be applicable upon approval and implementation of the proposed change. The proposed change to the Operating License does not remove or reduce any regulatory requirement.

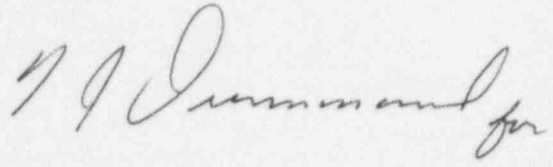
Waterford 3 intends to implement the proposed solution in a timely fashion as described herein.

The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for these determinations are included in the attached submittal.

Waterford 3 intends to install the modification in an expeditious manner and requests that the implementation date for this change be within 60 days of NRC issuance to allow for FSAR and procedure revisions necessary to implement this change. Although this request is neither exigent nor emergency, your prompt review is requested.

Should you have any questions or comments concerning this request, please contact Mr. James Fisicaro at (504) 739-6242.

Very truly yours,



M.B. Sellman
Vice President, Operations
Waterford 3

MBS/PLC/ssf
Attachment: Affidavit
NPF-38-181

cc: L.J. Callan, NRC Region IV
C.P. Patel, NRC-NRR
R.B. McGehee
N.S. Reynolds
NRC Resident Inspectors Office
Administrator Radiation Protection Division
(State of Louisiana)
American Nuclear Insurers

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of	)	
	)	
Entergy Operations, Incorporated	)	Docket No. 50-382
Waterford 3 Steam Electric Station	)	

AFFIDAVIT

F.J. Drummond, being duly sworn, hereby deposes and says that he is Director, Site Support - Waterford 3 of Entergy Operations, Incorporated; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached License Amendment NPF-38-181; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

F.J. Drummond
Director, Site Support

STATE OF LOUISIANA)
) ss
PARISH OF ST. CHARLES)

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 21st day of August, 1996.

Notary Public

My Commission expires at death.

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-38-181

The proposed change will eliminate Attachment 1 to the Operating License. The attachment contains a requirement that was completed in January 1987.

Existing Operating License NPF-38

Attachment A provides that portion of the Waterford 3 Operating License NPF-38 that will be affected by the proposed change.

Proposed Revision to the Operating License NPF-38

Attachment B indicates the requested changes to the Operating License NPF-38

Problem Description

During the pre licensing phase at Waterford 3, the NRC submitted a request for additional information (RAI) concerning the Type C leak testing of two instrument sensing lines in the Containment Vacuum Relief System (CVR) that penetrate the primary containment (Penetrations 53 & 65). The request in part stated the following:

> "The justification given in Table 6.2-43 for not including Penetrations 53 and 65 in Type C leak tests is inadequate. Show that containment isolation valves associated with these penetrations do not constitute potential containment atmosphere leak paths following a loss-of-coolant accident."

Waterford 3 responded to the request above as follows:

> "Penetrations 53 and 65 each contain two instrument lines. One senses differential pressure across the containment vessel and provides a signal to actuate the vacuum relief system; the other monitors this differential pressure and provides an input to the plant computer. The actuation (*i.e. Essential*) line contains an excess flow check valve outside containment; the monitoring (*i.e., Non-Essential*) line has an excess flow check valve and will be provided with a solenoid operated valve, closed on a containment isolation signal. The excess flow check valve is designed to close on excess flow and reopen when conditions return to a specified normal state. Both of these lines form a closed system outside containment, are seismically qualified and terminate in an area exhausted by the filters of Controlled Ventilation Area System. A Type C test is, therefore, not required or performed on these lines."

The justification provided by Waterford 3 (underlined above) was used and documented by the NRC in the Waterford 3 SER, as the bases for accepting the design configuration and testing requirements for the CVR instrument lines in penetrations 53 and 65.

Contrary to the above, it was recently discovered that neither of these lines terminate in an area exhausted by the filters of the Controlled Ventilation Area System (CVAS). In addition, the monitoring line is not in compliance with the design criteria for crediting a closed system as a leakage boundary to preclude bypass leakage.

Criteria Currently Applied to the CVR Instrument Lines

General Design Criteria (GDC) 56 states the following:

"Each line that connects directly to the containment atmosphere and penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines such as instrument lines, are acceptable on some other defined basis."

Regulatory Guide 1.11, Instrument Lines Penetrating Primary Containment, provides the NRC endorsed method of implementing GDC 56 requirements for instrument lines.

The CVR instrument line penetrations are GDC 56 penetrations because they communicate directly with the containment atmosphere. Waterford 3 applied the recommendations of R.G. 1.11 to the CVR instrument lines to comply with the containment isolation requirements as follows:

a) All CVR instrument lines were equipped with a manually operated valve installed as close to the containment as practicable and,

b) A self actuated excess flow check valve installed as close to the containment as practicable downstream of the manually operated valve.

As a result of an apparent NRC concern with isolating the Non-Essential lines, Waterford 3 committed (as indicated in the response to the RAI) to replace the manual valves with automatic solenoid operated isolation valves.

Docketed information appears to indicate that the design of these instrument lines, up to and including the outboard isolation valve was in full compliance with R.G. 1.11 and therefore, acceptable to the NRC, in so far as containment isolation and GDC 56 was concerned.

Attachment 1 to Operating License NPF-38

Initially, all four CVR instrument lines were equipped with a normally open manual valve upstream from the excess flow check valves. As a result of installing the automatic isolation valves (CVR 401A & CVR 401B) in each of the monitoring lines, it became apparent during the implementation of R.G. 1.97 (Post Accident Monitoring Instrumentation), that these valves would require direct position indication in the control room. Waterford 3 committed to install this feature prior to startup following the first refueling outage. The staff documented this commitment in Supplement 8 to the SER and incorporated this requirement as a license condition in Attachment 1 to the Operating License. This Condition of the Operating License was completed January 19, 1987. The proposed change describes a plant modification that will remove the containment isolation valve (CVR 401B) from the non-essential monitoring line in penetration 65. A welded pipe cap will then be installed on the line and the line will be abandoned in place. As such valve position indication for penetration 65 will no longer be applicable and the license condition in Attachment 1 to NPF-38 should be modified. The modification to the license will eliminate Attachment 1. This will not remove or reduce any regulatory requirement at Waterford 3. The license condition was a method to assure that Waterford 3 fully complied with the provisions of R.G. 1.97. Subsequent to this proposed change, Waterford 3 will continue to be committed to R.G. 1.97 and in full compliance. The modification will include an additional automatic isolation valve in penetration 53 and position indication in accordance with R.G. 1.97 will be provided.

Leak Testing Criteria

Pursuant to Branch Technical Position (BTP) CSB 6-3, Determination of Bypass Leakage Paths in Dual Containment Plants, "If a closed system is proposed as a leakage boundary to preclude bypass leakage, then the system should:

a. Either (1) not directly communicate with the containment atmosphere, or (2) not directly communicate with the environment, following a loss-of-coolant accident.

b. Be designed in accordance with Quality Group B standards, as defined by Regulatory Guide 1.26. (Systems designed to Quality Group C or D standards that qualify as closed systems to preclude bypass leakage will be considered on a case-by-case basis.)

c. Meet seismic Category I design requirements.

d. Be designed to at least the primary containment pressure and temperature design conditions.

e. Be designed for protection against pipe whip, missiles, and jet forces in a manner similar to that for engineered safety features.

f. Be tested for leakage, unless it can be shown that during normal plant operations the system integrity is maintained."

This preceding criteria was inappropriately used to justify not performing Type C leak testing in accordance with 10 CFR Appendix J on the CVR instrument sensing lines.

Current Configuration CVR Essential/Sensing Instrument Line

The CVR protects the containment vessel by maintaining the pressure differential across the vessel lower than the design value. If the containment atmosphere is rapidly cooled lowering containment pressure a differential pressure between the containment and the annulus that is higher than the design pressure difference could be created. The CVR penetrations 53 and 65 each contain an essential instrument line. The sensing line senses differential pressure across the containment vessel and provides a signal to actuate the CVR. Due to its primary safety function, these redundant instrument sensing lines of the CVR are designated as "essential" in accordance with R.G. 1.141, thus, not requiring automatic containment isolation.

The CVR instrument sensing lines meet the specified regulatory positions of R.G. 1.11, paragraphs C.1.a, C.1.b, C.1.c, C.1.d and C.1.e.

The CVR instrument sensing lines meet the criteria of BTP CSB 6-3 (previously listed) for crediting a closed system as a leakage boundary to preclude bypass leakage with the exception of item (b). Item (b) requires the system to be designed in accordance with Quality Group B standards, as defined by R.G. 1.26 (i. e., ASME Section III, Class 2). However, instrument lines are not covered by R.G. 1.26. Section B of R.G. 1.26 indicates that instrument lines should be designed, fabricated, erected, and tested to standards commensurate with the safety function to be performed. Standard Review Plan 3.2.2, System Quality Group Classification, Section III provides examples of systems (which includes instrument systems) that are not covered by R.G. 1.26, and according to the staff should be classified as Quality Group C (i.e., ASME, Section III, Class 3). This is consistent with the design criteria applied at Waterford 3 (i.e., ISA-67.02 "Nuclear-Safety-Related Instrument Sensing Line Piping and Tubing Standards for Use in Nuclear Power Plants" as endorsed by NRC Draft R.G. entitled Instrument Sensing Lines, Position C.4.) The CVR instrument sensing lines form a seismically qualified, closed system outside containment.

These lines are ASME Section III, Class 3 stainless tubing designed and built to meet seismic Category I criteria of LOU-1564-B-430 which defines support spans for weight, seismic, and thermal expansion and movements. The sensing line tubing is rated for a design pressure in excess of 4,500 psig at 300°F in accordance with the manufacturers data. The system design for this section of tubing is 44 psig at 300°F. Therefore, the tubing design conditions are approximately 1% of its rated capacity. Even though the expected MSLB temperature inside the containment peaks above 300°F, it should be noted that the containment will be above 300°F for a very short period of time, and the instrument tubing is not expected to reach this temperature due to delayed heat transfer. The tubing support/span criteria used at Waterford 3, limits bending stresses in the tubing to less than 50% of the allowable. This fact, combined with the extremely low internal pressure stress gives a combined stress well below the break exclusion criteria.

The instrument cabinets C-3A(B) are seismic Category I and safety related. The instruments are Safety Class 1E and have a static pressure rating of 1000 psig. The sensing line and valves downstream of the excess flow check valve (CVR-302A&B) are designed to ASME Section III, Class 3. In light of these facts, the CVR instrument sensing lines may be credited as a pressure barrier, as described under Class D penetrations in the Waterford 3 FSAR, subsection 6.2.4.1.2. A pressure barrier is said to exist when the line is part of a closed system outside containment which is designed for pressure equal to or greater than containment.

Failure Analysis

Due to redundancy, a single active failure in the CVR instrument sensing line will not prevent the system from performing its safety related function.

A gross passive failure in the CVR instrument sensing line concurrent with a LOCA is not considered credible due to the design qualification described above. Branch Technical Position ASB 3-1, Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment, Section b.3 a, states that piping failures should be postulated in accordance with BTP MEB 3-1. Section 3.a of BTP MEB 3-1 refers to R.G. 1.11 for piping 1 inch or less or tubing. R.G. 1.11 limits the occurrence of a postulated passive failure, to periods during normal plant operations. A gross failure in the Essential CVR instrument sensing lines during normal plant operations will not impact public health and safety because there is no radioactive source term. Based on the above bypass leakage due to passive failure in the CVR instrument sensing lines will be limited to leakage from failed valve packing or mechanical seal rather than the complete severance of the line.

This is consistent with ANSI N658 Single Failure Criteria for PWR Fluid Systems, Section 3.6. Leakage of this nature will be precluded by testing and inspection at periodic intervals.

Proposed Solution for the CVR Essential/Sensing Instrument Line

The proposed solution for the CVR sensing line will not require any plant modification. The following discussion provides the regulatory licensing bases for the design and acceptance of these safety related essential instrument lines.

Based on the above, the Waterford 3 design meets Reg. Guide 1.11 requirements up to the downstream isolation valves and meets the requirements of ANSI/ANS-56.2/N271-1976, ISA 67.02-1980 and the Draft Reg. Guide - Instrument Sensing Lines. These lines meet the criteria of BTP CSB 6-3 for crediting a closed system as a leakage boundary to preclude bypass leakage by being designed, fabricated, erected, and tested to standards commensurate with the safety function to be performed. The proposed change will apply the appropriate testing and acceptance criteria to ensure that any leakage associated with these potential bypass leakage paths, will not exceed the limits used in the Waterford 3 safety analysis or result in a significant increase in analyzed dose consequences. Therefore, no plant modification will be pursued.

Licensing Bases

Upon approval of the proposed change, a revision to the FSAR will be processed to specifically describe the bases for meeting BTP CSB 6-3 Section 9.b as it applies to the CVR instrument sensing lines. In addition these lines will be pressurized and leak tested at refueling intervals in accordance with Plant Operating procedure OP-903-110. Leakage within the acceptance limits of this procedure will ensure compliance with technical specification requirements and other requirements associated with containment integrity. The normally closed valves in the instrument cabinets will be included in existing administrative controls that periodically verify valve position.

Current Configuration for the CVR Nonessential/Monitoring Instrument Line

The CVR monitoring instrument lines communicate directly with the containment atmosphere. Each redundant line runs from containment to a solenoid globe valve that closes automatically on a CIAS. An excess flow check valve is located downstream of the automatic valves. The tubing for the monitoring lines up to and including the excess flow check valves is ASME Section III, Class 2, seismic Category I. The remaining portion of the lines are non-safety tubing and although seismically supported, the monitoring lines downstream of the isolation valves are not classified as seismic Category I. These lines terminate at the C-4 cabinet that is located outside the area exhausted or filtered by the CVAS.

The instrumentation for the monitoring lines measure differential pressure between containment and annulus, and provide signal to the plant computer and containment purge. These lines do not assist in mitigating the effects of an accident nor are they necessary for safe plant shutdown, therefore, they are categorized as "nonessential" pursuant to R.G. 1.141, and require automatic isolation.

An excess flow check valve with flow limiting orifice, is essentially a containment isolation valve with a post accident position that is open. This fact combined with (1) only one automatic isolation valve capable of closing in the line and (2) the design of the lines downstream of the excess flow check valve (i.e., non -safety, non-seismic), does not meet the criteria for containment isolation following a LOCA and single active failure. Waterford 3 has evaluated the consequences of an accident concurrent with a single active failure in these lines and obtained acceptable results (i.e., dose consequences within GDC 19 and 10 CFR 100 limits). However, to provide for defense in depth during this interim period, CVR 401A and B are currently de-activated and secured in the closed position. CVR 401A may be opened for various reasons such as, whenever the Containment Purge is placed in service, for the conduct of technical specification surveillance testing, or when the PMC out of service. The Waterford 3 Technical Specifications limit Containment Purge to less than 90 hours per 365 days. This 90 hour limit is currently imposed on the opening of CVR 401A.

Proposed Solution for the Nonessential/Monitoring Instrument Line

Waterford 3 proposes to modify the CVR instrument monitoring lines at power by abandoning one line and providing the remaining line with two automatic isolation valves in series located outside containment. We believe this configuration to be an improvement over that allowed by R.G. 1.11 regulatory position C.2.a, and therefore, it is proposed as an acceptable alternative method for complying with the NRC recommended position.

Attachment C provides a step by step visual presentation of the proposed plant modification. Waterford 3 intends to perform this modification while at power and in strict compliance with all applicable license/regulatory requirements.

While this modification is performed, administrative controls will require containment integrity to be maintained by a seismic Category 1, ASME Section III, Class 2, passive containment isolation device. The criteria associated with containment isolation defines a passive isolation device as a closed manual valve, a de-activated automatic valve secured in the closed position, a blind flange, or closed system. During the performance of this modification no single credible failure or malfunction of an active component will result in a loss of containment isolation or containment leakage that exceeds the limits assumed in the Waterford 3 safety analysis.

The proposed modification involves the following steps:

1. The monitoring line from penetration 65 will be cut and capped in the C-4 instrument cabinet. Instruments CVR-IDPT-5017B and CVR-IDPT-5017C will be tied in to the monitoring line from penetration 53.

2. A containment entry will be made and a threaded ASME Section III, Class 2 pipe cap will be installed on the Penetrations 53 and 65 monitoring lines. A compression tubing cap will also be installed on the penetration 65 line terminating in the instrument cabinet. A local leak rate test (LLRT) on penetration 65 will be performed by pressurizing the line from the test connection located between CVR 401B and containment with CVR 401B closed to ensure the leak tight integrity of the cap installed inside containment. This test will again be performed with CVR 401B open to ensure the leak tight integrity of the cap installed outside the CVAS boundary. Penetration 53 will be pressurized between the pipe cap and the installed instrumentation. These caps will provide for a passive containment/CVAS barrier while the line outside containment is being cut as described in the following steps.

3. CVR 401B and CVR 402B will be cut out of the system and line end caps will be installed. The line in penetration 65 will have a welded pipe cap installed outside containment. The remaining portion of this line will have a welded pipe cap on the line end located within the CVAS boundary.

4. A solenoid valve will be installed upstream of CVR 401A and LLRT test connections will be installed. The tubing and valves from containment up to and including the outer most containment isolation valve will meet ASME Section III. Class 2 , seismic Category I criteria. The excess flow check valve CVR 402A will be removed from the penetration 53 line and replaced with LRT 402 manual valve.

5. A LLRT test will be performed on penetrations 53 and 65.

6. The power to the new series isolation valve will be attached and appropriate operability testing will be performed. The cap inside containment on the monitoring line in penetration 53 will be removed. Upon completion of this plant modification an operability test of the CVAS boundary will be performed in accordance with the requirements in the technical specifications.

Failure Analysis

Two automatic valves in series ensure that a single containment isolation barrier will be available following an accident with a single active failure.

Currently the CVR monitoring line from penetration 65 feeds differential pressure transmitters CVR-IDPT-5017B and CVR-IDP-5071C (containment-annulus). The CVR monitoring instrument line from penetration 53 feeds differential pressure transmitters CVR-IDPT-5017A (containment-annulus) CAP-IDPT-5171 (containment-ambient). The

proposed change will re-route tubing within cabinet C-4 such that the above instruments will be fed from penetration 53. CAP-IDPT-5171 feeds PMC point A51000 and measures the differential pressure between the containment and ambient atmosphere. There is also an interlock which prevents the opening of Containment Atmospheric Purge isolation valves when differential pressure is greater than (more negative) -8.4 inches of water. CVR-IDPT-5017A, B, and C provide inputs to the PMC (I/O points A51400, A51401, and A51402) that measures the differential pressure between the Containment and the Annulus. The instruments in cabinet C-4 are non-safety. Alternate instruments that measure containment-annulus differential pressure are available in case of a failure of penetration 53's non-essential instrument line. The following is a discussion on the use of alternate instrumentation:

Local Indications Available:

CVRIDPIS5220A, B
CVRIDPIS5221A, B
Range: *0 to 15 IN.*
Location: *RB +21 C-3A / C-3B*

Computer Indications Available:

CAPIDPT5258A, B *Containment : Atmosphere D/P*
Range. *-10 to 20 IN.*
PID#: *A51001, A51002*

SBVIDPT5054A, B *Annulus : Atmosphere D/P*
Range: *+2 to -10 IN.*
PID#: *A51702, A51703*

ANPIDPT5075 *Annulus Negative Pressure*
Range: *0 to -20 IN.*
PID#: *A51600*

Atmospheric Pressure (from Met. Tower)
PID#: *C48516*

- The local Indications can be read directly.

- The computer indications (Containment : Atmosphere D/P and Annulus : Ambient D/P) can be used to determine Containment : Atmospheric D/P. This is accomplished as follows:

  CNTMT - Annulus = (CNTMT - Atmosphere) - (Annulus - Ambient)
  therefore:

  CNTMT - Annulus = A51001 - A51702 *or*
  CNTMT - Annulus = A51002 - A51703

- Another method of determining CNTMT : Annulus D/P is available.

  CNTMT - Annulus = (CNTMT - Atmosphere) + (Atmosphere) - (Annulus)

  CNTNT - Annulus = A51001 + C48516 (converted to ") - A51600 *or*
  CNTNT - Annulus = A51002 + C48516 (converted to ") - A51600

Licensing Bases

Upon approval and implementation the FSAR will be updated to reflect the proposed configuration. Isolation valves will be added to the LLRT program and IST program as appropriate.

The License Condition as it is currently documented in Attachment 1 to NPF-38 will no longer represent the plant configuration. As described above, the CVR monitoring instrument line in penetration 65 will be capped and of the two lines, only penetration 53 will have valve position indication. Therefore, upon approval of the proposed change Attachment 1 to NPF-38 will be deleted.

Conclusion

Waterford 3 seeks to correct previously docketed information that was in error. This information was material in nature and used as the bases for accepting the design configuration and testing requirements for these instrument lines by the NRC. If the correct plant configuration had been known at the time, Waterford 3 believes that a design change would have been pursued. The proposed change described herein is intended to resolve this nonconforming condition in the most expedient manner known. The change proposes an alternative method for complying with the NRC recommended position in R.G. 1.11. Waterford 3 believes that the level of protection provided by the proposed change is commensurate with the safety function to be performed.

Safety Analysis

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

The proposed change will in not increase the probability of previously analyzed accidents. The proposed change seeks to clearly document the design and licensing bases for acceptance of the CVR sensing instrument lines. The proposed change to the monitoring lines will provide greater assurance that containment integrity will be maintained following a LOCA concurrent with a single active failure. The design change to the non-essential monitoring line will reduce the potential bypass leakage from penetrations 53 and 65 by adding a redundant automatic containment isolation valve on penetration 53 and isolating the non-essential instrument line on penetration 65. This design change can be performed at power without violating any license/regulatory requirements that ensure containment integrity is maintained.

There is no change in the function of the instrumentation. The only difference is that CVR-IDPT-5017B and C non-safety differential transmitters that monitor the CVR system will be sensing containment pressure from penetration 53. If the non-essential line coming from penetration 53 becomes inoperable, containment to annulus differential pressure can be obtained from alternate instrumentation. The essential sensing line that actuates the CVR system to protect containment within design vacuum pressure is not affected by the design change.

Adding a redundant automatic containment isolation valve in penetration 53's non-essential instrument line instead of the excess flow check valve and isolating the non-essential line in penetration 65's will significantly reduce the potential bypass leakage. The proposed change will credit the essential instrument lines as a closed system outside containment. The appropriate testing and acceptance criteria will be applied to ensure that any leakage associated with these potential bypass leakage paths, will not exceed the limits used in the Waterford 3 safety analysis or result in a significant increase in analyzed dose consequences. Therefore, the proposed change will not involve significant increase in the probability or consequences of any accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different type of accident from any accident previously evaluated?

Response: No.

The proposed change will credit the essential sensing lines outside containment as a closed system and will not affect the plant or the manner in which the plant in operated.

The failure modes associated with containment isolation remain unchanged as a result of the design change to the non-essential monitoring lines. The function of the non-safety instrumentation is not affected. The only difference is that all of the non-safety instrumentation will be sensing containment pressure from penetration 53. However, if the non-essential line coming from penetration 53 becomes inoperable, containment pressure can be obtained from alternate instrumentation. Adding a redundant automatic containment isolation valve in series with CVR 401A in the non-essential instrument line ensures containment isolation following a LOCA with a concurrent a single active failure. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

Response: No

The addition of a redundant automatic containment isolation valve in series with CVR 401A in the non-essential instrument line breaching penetration 53 ensures containment isolation postulating a single active failure on a Containment Isolation Actuation Signal (CIAS). While this modification is performed, administrative controls will require containment integrity to be maintained by a seismic Category 1, ASME Section III, Class 2, passive containment isolation device.

The essential CVR instrument sensing lines form a seismically qualified, closed system outside containment which is designed for pressure equal to or greater than containment. The instrument cabinets C-3A(B) are seismic Category I and safety related. The instruments are Safety Class 1E and have a static pressure rating of 1000 psig. These lines meet the criteria of BTP CSB 6-3 for crediting a closed system as a leakage boundary to preclude bypass leakage by being designed, fabricated, erected, and tested to standards commensurate with the safety function to be performed. The proposed change will apply the appropriate testing and acceptance criteria to ensure that any leakage associated with these potential bypass leakage paths, will not exceed the limits used in the Waterford 3 safety analysis or result in a significant increase in analyzed dose consequences. Therefore, the proposed change will not involve a significant reduction in a margin of safety.

Safety and Significant Hazards Determination

Based on the above safety analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10CFR50.92; and (2) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC final environmental statement.

1. ANSI/ANS 51.7-1976 (ANSI N658-1976), Single Failure Criteria for PWR Fluid Systems.

2. ANSI/ANS 56.2-1976 (ANSI N271-1976), Containment Isolation Provisions for Fluid Systems.

3. NUREG-0787, July 9, 1981, Safety Evaluation Report Related to the Operation of Waterford Steam Electric Station, Unit No. 3 Docket No. 50-382

4. NUREG-0787, Supplement No. 8 December 1984, Evaluation Report Related to the Operation of Waterford Steam Electric Station, Unit No. 3 Docket No. 50-382

5. NUREG-0800, Standard Review Plan, Section 3.2.2, "System Quality Group Classification".

6. NUREG-0800, Standard Review Plan, Section 3.6.1, "Plant Design For Protection Against Postulated Piping Failures in Fluid Systems Outside Containment".

7. NUREG-0800, Standard Review Plan, Section 3.6.2, "Determination Of Rupture Locations And Dynamic Effects Associated With The Postulated Rupture Of Piping".

8. NUREG-0800, Standard Review Plan, Section 3.6.4, "Containment Isolation System".

9. NUREG-0800, Standard Review Plan, Branch Technical Position CSB 6-3, "Determination of Bypass Leakage Paths In Dual Containment Plants".

10. WATERFORD STEAM ELECTRIC STATION, UNIT 3 Facility Operating License NPF-26, Dated December 18, 1984.

11. WATERFORD STEAM ELECTRIC STATION, UNIT 3 Facility Operating License NPF-38, Dated March 16, 1985.

12. NUREG-1117, Technical Specifications Waterford Steam Electric Station Unit No. 3 Docket No. 50-382, Section 3.6.1.1, "Containment Systems; Primary Containment, Containment Integrity".

13. NUREG-1117, Technical Specifications Waterford Steam Electric Station Unit No. 3 Docket No. 50-382, Section 3.6.1.2, "Containment Systems; Containment Leakage".

14. NUREG-1117, Technical Specifications Waterford Steam Electric Station Unit No. 3 Docket No. 50-382, Section 3.6.1.4, "Containment Systems; Internal Pressure".

15. NUREG-1117, Technical Specifications Waterford Steam Electric Station Unit No. 3 Docket No. 50-382, Section 3.6.1.7, "Containment Systems; Containment Ventilation Systems".

16. Safety Guide 11, February 10, 1971, Instrument Lines Penetrating Primary Reactor Containment.

17. Regulatory Guide 1.26, Revision 3 February 1976, Quality Group Classifications And Standards For Water, Steam, And Radioactive Waste Containing Components Of Nuclear Power Plants.

18. Regulatory Guide 1.141, Revision 1, May 1980, Containment Isolation Provisions For Fluid Systems.

19. DRAFT Regulatory Guide IC 126-5, March 1982, Instrument Sensing Lines.

20. Waterford 3 SES Updated Final Safety Analysis Report Docket 50-382 Operating License NPF-38 , Section 1.8.1.11, "Regulatory Guide 1.11, Instrument Lines Penetrating Primary Reactor Containment", Revision 0, March 1971, pg. 1.8-3.

Waterford 3 SES Updated Final Safety Analysis Report Docket 50-382 Operating License NPF-38, Section 6.2.4.1.2, "Criteria For Isolation of Fluid Systems Penetrating The Containment", pg. 6.2-63.

22. Waterford 3 SES Updated Final Safety Analysis Report Docket 50-382 Operating License NPF-38, Section 6.2.4.1.3, "Criteria For Isolation of Fluid Instrument Lines Penetrating The Containment", pg. 6.2-63.

23. Waterford 3 SES Updated Final Safety Analysis Report Docket 50-382 Operating License NPF-38, Section 6.2.4.2.2, "Instrument Lines", pg 6.2-64.

24. Waterford 3 SES Updated Final Safety Analysis Report Docket 50-382 Operating License NPF-38, Section 7.1.2.7 "Comparison of Design with NRC Regulatory Guides", R.G. 1.11 Instrument Lines Penetrating Primary Reactor Containment (3/10/97), pg. 7.1-8.

NPF-38-181

ATTACHMENT A
Attachment A Provides the Waterford 3 Operating License NPF-38 That Will Be Affected by the Proposed Change.

who may acquire an interest under this transaction(s) are prohibited from exercising directly or indirectly any control over (i) the facility, (ii) power or energy produced by the facility, or (iii) the licensee of the facility. Further, any rights acquired under this authorization may be exercised only in compliance with and subject to the requirements and restrictions of this operating license, the Atomic Energy Act of 1954, as amended, and the NRC's regulations. For purposes of this condition, the limitations of 10 CFR 50.81, as now in effect and as they may be subsequently amended, are fully applicable to the equity investors and any successors in interest to the equity investors, as long as the license for the facility remains in effect.

(b) LP&L, (or its designee) to notify the NRC in writing prior to any change in (i) the terms or conditions of any lease agreements executed as part of the above authorized financial transactions, (ii) any facility operating agreement involving a licensee that is in effect now or will be in effect in the future, or (iii) the existing property insurance coverages for the facility, that would materially alter the representations and conditions, set forth in the staff's Safety Evaluation enclosed to the NRC letter dated September 18, 1989. In addition, LP&L or its designee is required to notify the NRC of any action by equity investors or successors in interest to LP&L that may have an effect on the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3390 megawatts thermal (100% power) in accordance with the conditions specified herein and in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.

2. Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 58, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

H. This license is effective as the date of issuance and shall expire at midnight on December 18, 2024.

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosures:
1. Attachment 1
2. Attachment 2
3. Appendix A (Technical Specifications) (NUREG-1117)
4. Appendix B (Environmental Protection Plan)
5. Appendix C (Antitrust Conditions)

Date of Issuance: March 16, 1985

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ATTACHMENT 1

WATERFORD STEAM ELECTRIC STATION
OPERATING LICENSE NPF-38

This attachment identifies items which must be completed to the Commission's satisfaction prior to startup following the first refueling outage.

- Continuous, direct position indication in the control room for the containment isolation valves for instrument line penetrations 53 and 65.

NPF-38-181

ATTACHMENT B

Attachment B indicates the requested changes to the Operating License NPF-38

who may acquire an interest under this transaction(s) are prohibited from exercising directly or indirectly any control over (i) the facility, (ii) power or energy produced by the facility, or (iii) the licensee of the facility. Further, any rights acquired under this authorization may be exercised only in compliance with and subject to the requirements and restrictions of this operating license, the Atomic Energy Act of 1954, as amended, and the NRC's regulations. For purposes of this condition, the limitations of 10 CFR 50.81, as now in effect and as they may be subsequently amended, are fully applicable to the equity investors and any successors in interest to the equity investors, as long as the license for the facility remains in effect.

(b) LP&L, (or its designee) to notify the NRC in writing prior to any change in (i) the terms or conditions of any lease agreements executed as part of the above authorized financial transactions, (ii) any facility operating agreement involving a licensee that is in effect now or will be in effect in the future, or (iii) the existing property insurance coverages for the facility, that would materially alter the representations and conditions, set forth in the staff's Safety Evaluation enclosed to the NRC letter dated September 18, 1989. In addition, LP&L or its designee is required to notify the NRC of any action by equity investors or successors in interest to LP&L that may have an effect on the operation of the facility.

This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3390 megawatts thermal (100% power) in accordance with the conditions specified herein, ~~and in Attachment 1 to this license. The items identified in Attachment 1 to this licensee shall be completed as specified. Attachment 1 is hereby incorporated into this license.~~

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment 56 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

This license is effective as the date of issuance and shall expire at midnight on December 18, 2024.

FOR THE NUCLEAR REGULATORY COMMISSION

H. R. Denton /sd/
Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosures:
1. ~~Attachment 1~~ This Attachment has been deleted.
2. Attachment 2
3. Appendix A (Technical Specifications) (NUREG-1117)
4. Appendix B (Environmental Protection Plan)
5. Appendix C (Antitrust Conditions)

Date of Issuance: March 16, 1985

ATTACHMENT 1

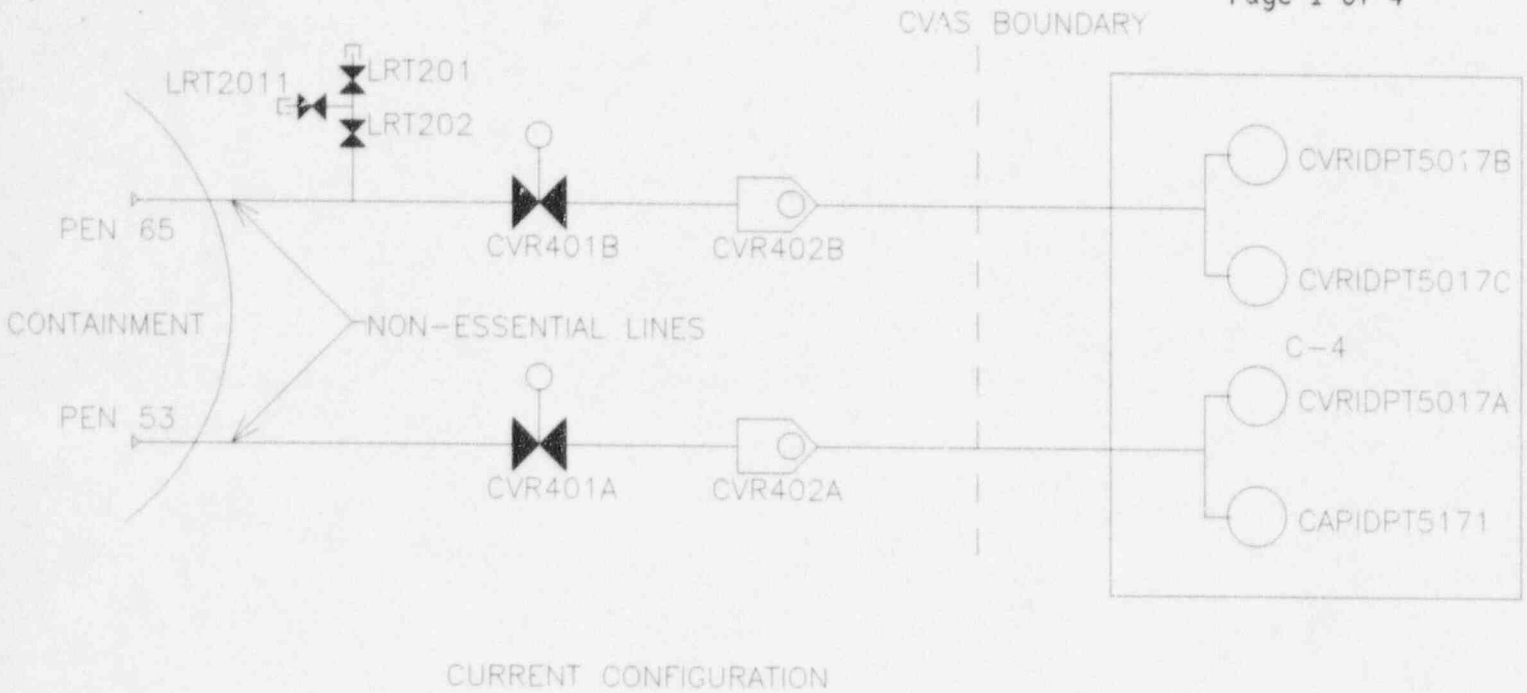
WATERFORD STEAM ELECTRIC STATION
OPERATING LICENSE NPF-38

This attachment identifies items which must be completed to the Commission's satisfaction prior to startup following the first refueling outage.

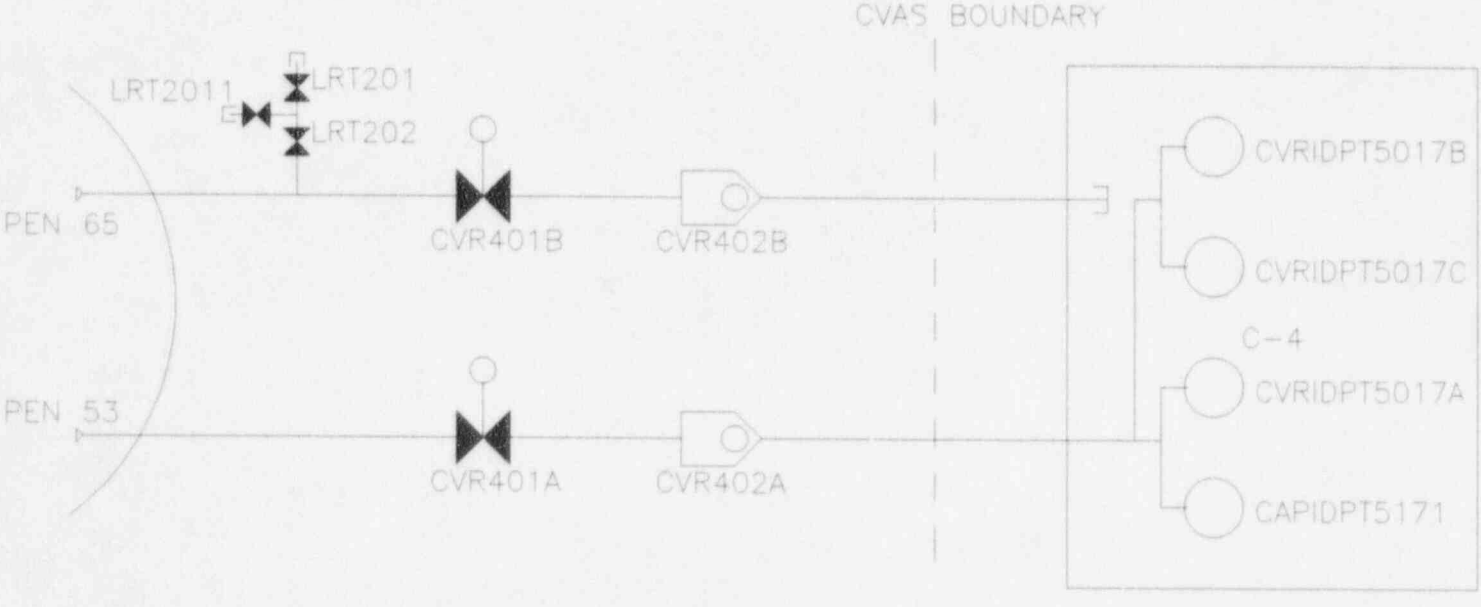
Continuous, direct position indication in the control room for the containment isolation valves for instrument line penetrations 53 and 65.

NPF-38-181

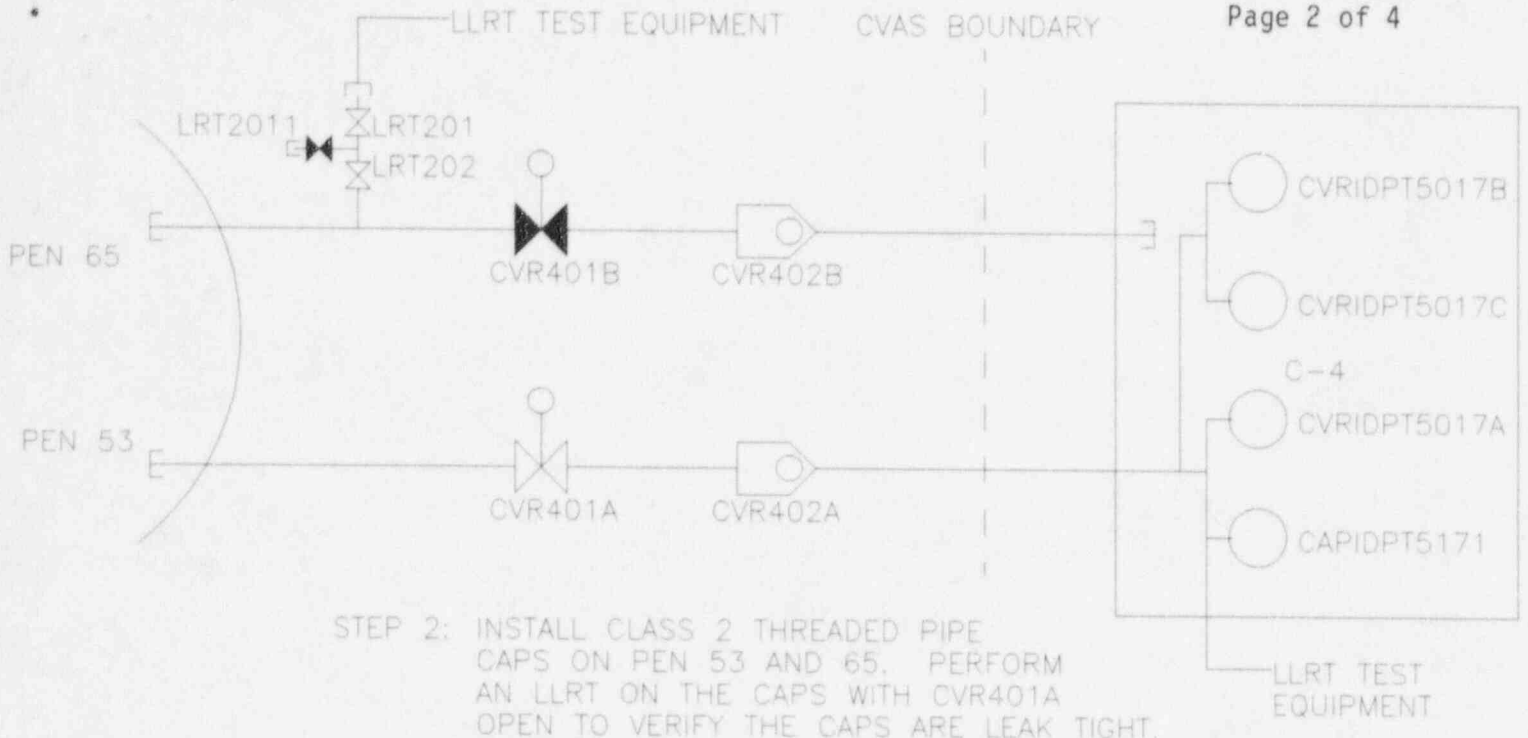
ATTACHMENT C
Visual Representation of the Proposed Plant Modification



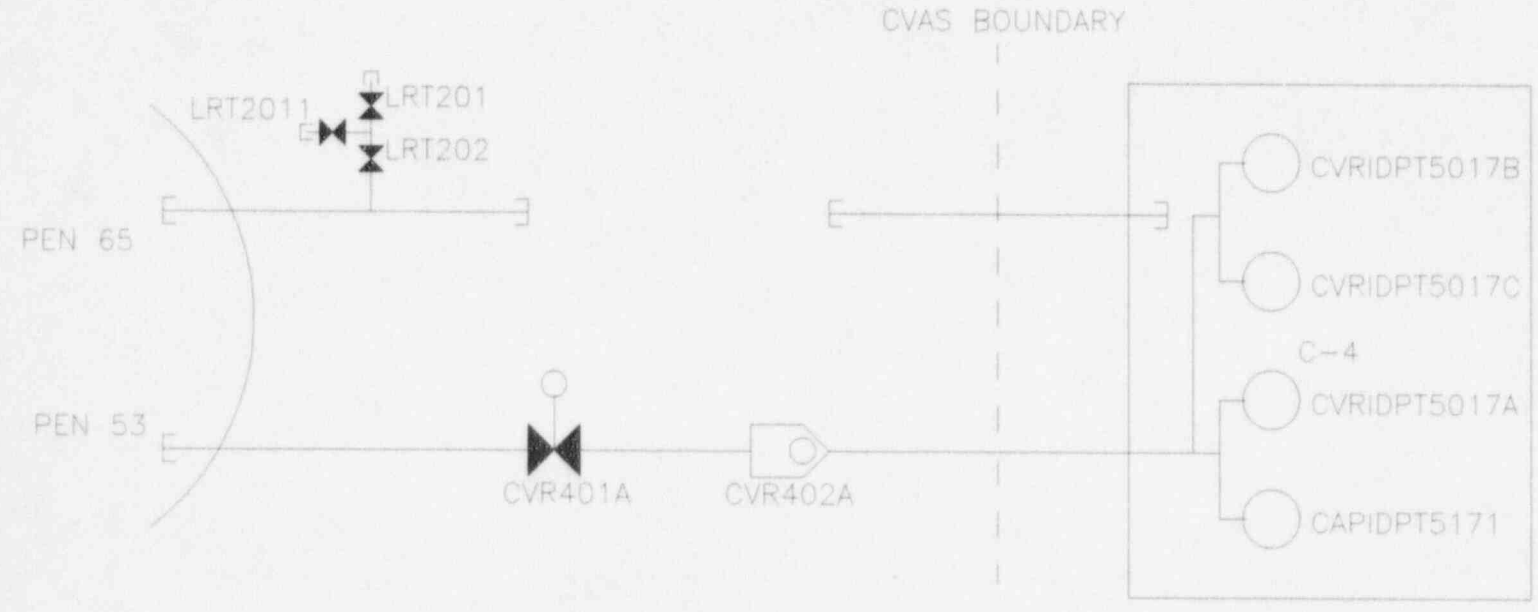
CURRENT CONFIGURATION



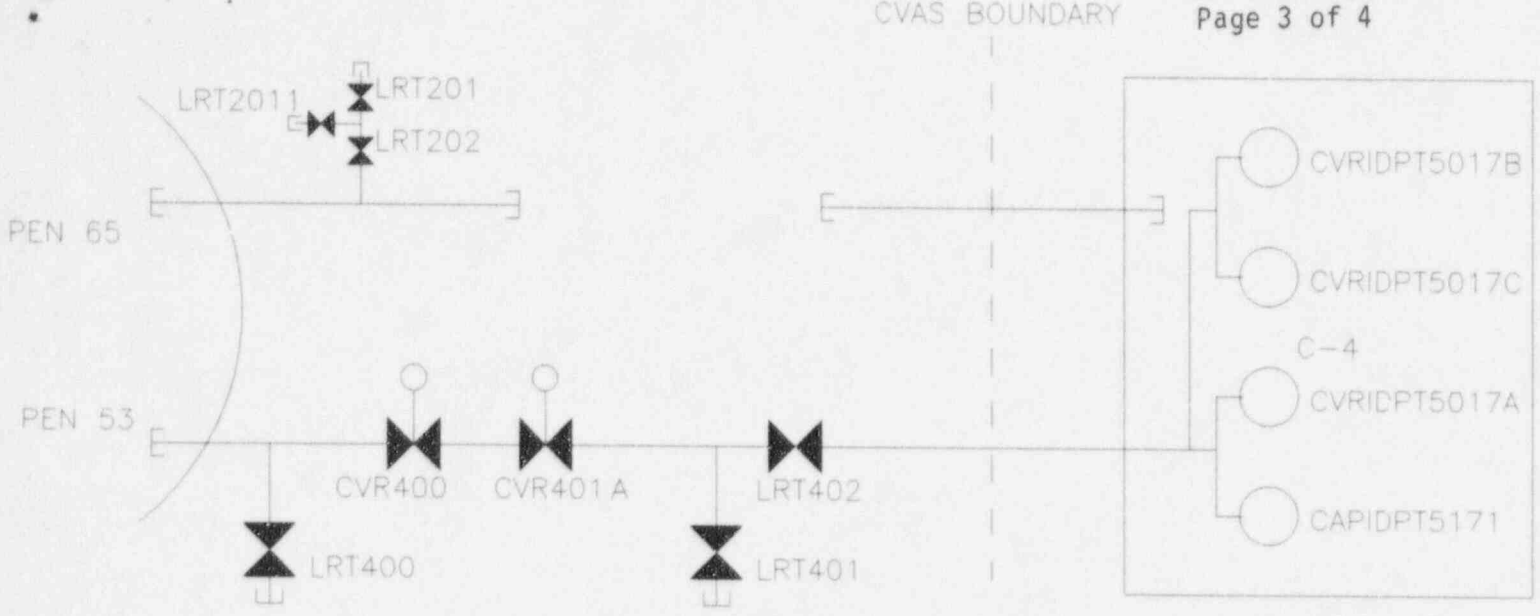
STEP 1: WITH CVR401A & B SHUT, MODIFY C-4



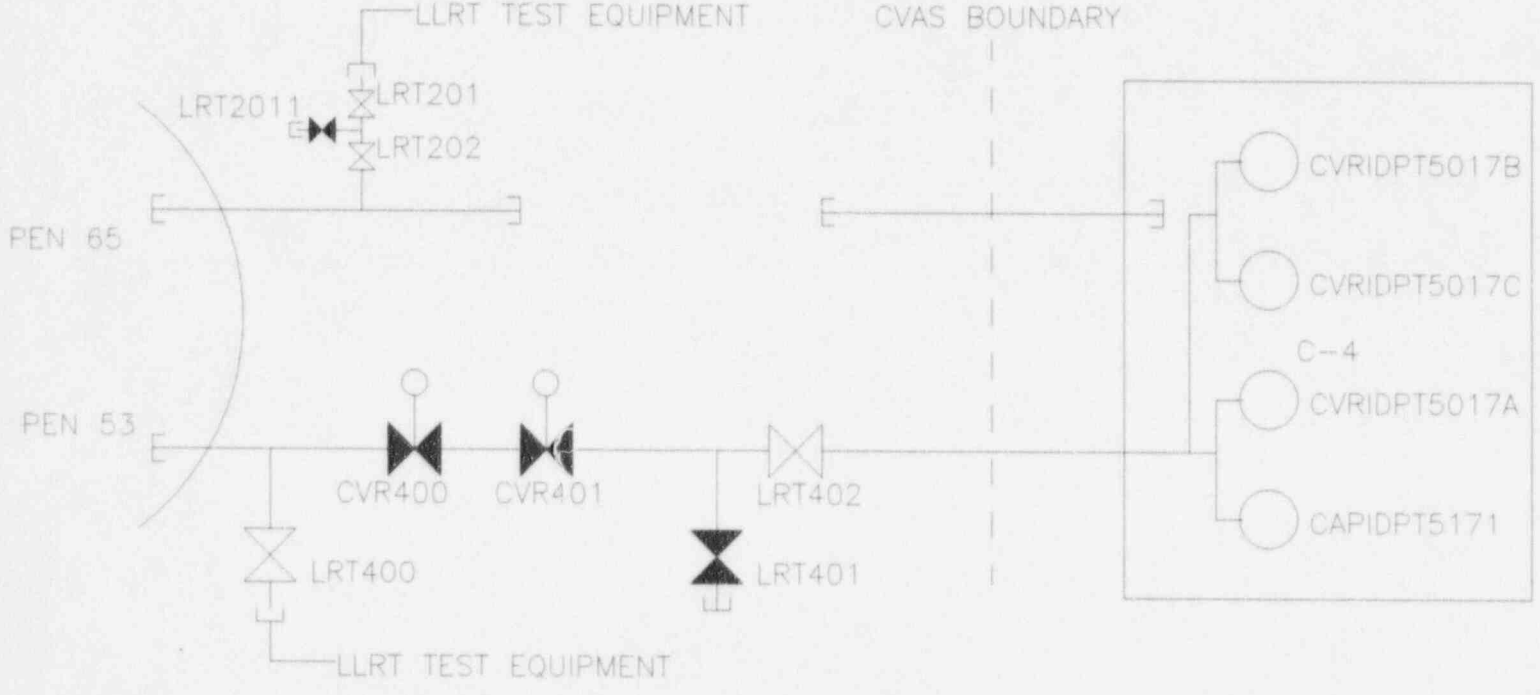
STEP 2: INSTALL CLASS 2 THREADED PIPE CAPS ON PEN 53 AND 65. PERFORM AN LLRT ON THE CAPS WITH CVR401A OPEN TO VERIFY THE CAPS ARE LEAK TIGHT.



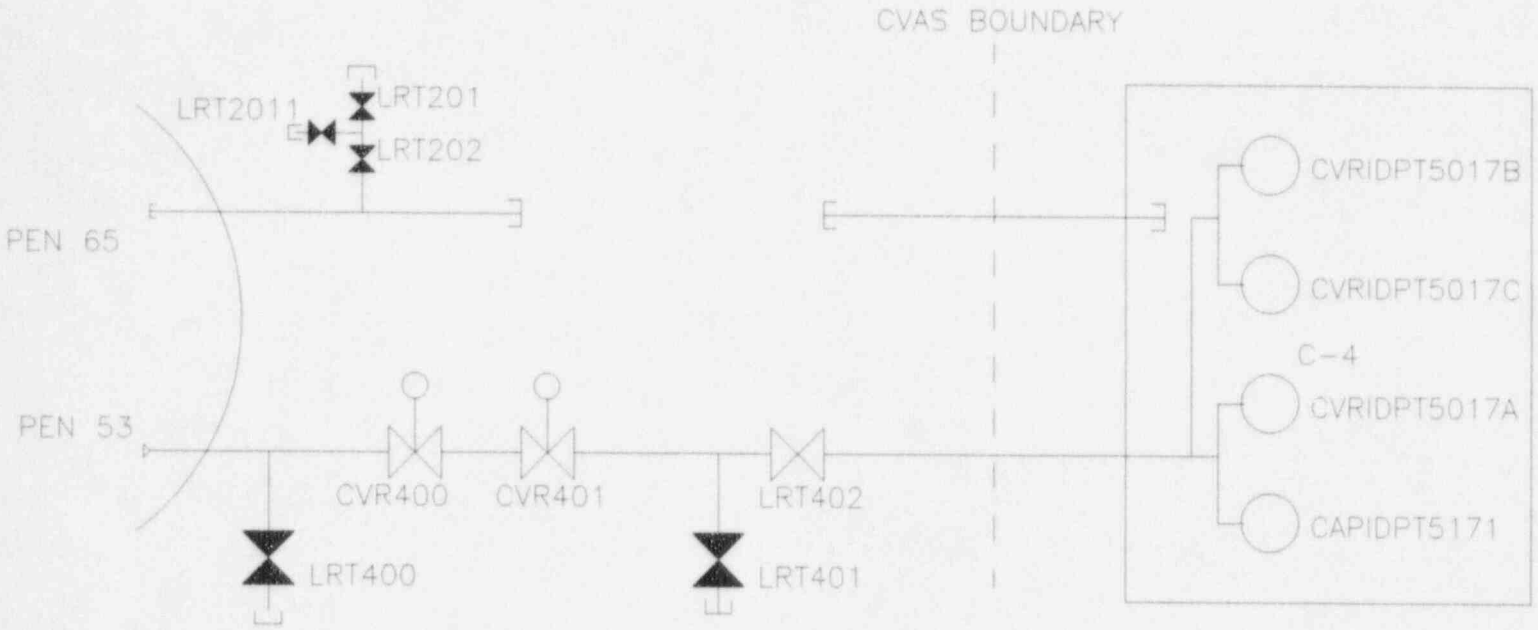
STEP 3: CUT CVR401B AND CVR402B OUT OF THE SYSTEM AND CAP THE REMAINING LINES



STEP 4: INSTALL A SOLENOID VALVE UPSTREAM OF VALVE CVR401A. INSTALL REQUIRED VALVES FOR LLRT TEST CONNECTIONS. RENAME CVR401A CVR401



STEP 5: PERFORM LLRT ON PENETRATION 65 CAP AND VALVES CVR400 AND CVR401.



STEP 6: REMOVE THE PIPE CAP FROM THE INSIDE OF PEN 53