Safety Analysis

Ginna Station

UFSAR Section 6.2.4 and Tables 6.2-13, 6.2-14 and 6.2-15 Changes

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Revision 3

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Safety Analysis

1.0 Description and Scope

1.1 The purpose of this evaluation is to determine if there are any unreviewed safety questions related to updating UFSAR Section 6.2.4, Table 6.2-13, Table 6.2-14, and Table 6.2-15. This update is necessary to reflect information obtained during a detailed review of the containment isolation system and the result of the 1988 Inservice Test (IST) Program submittal to the NRC.

2.0 References

2.1 Updated Final Safety Analysis Report, Revision 5.

2.1.1 Section 6.2.4, Containment Isolation System.

2.1.2 Table 6.2-13, Containment Piping Penetrations and Isolation Valves.

2.2 R.E. Ginna Nuclear Power Plant Technical Specifications, dated April 12, 1990.

2.2.1 Section 3.6.3, Containment Isolation Valves.

2.2.2 Table 3.6-1, Containment Isolation Valves.

2.2.3 Section 3.8.1, Refueling.

2.3 Letter from J.E. Maier, RG&E, to D.M. Crutchfield, NRC, Subject: SEP Topic VI-4, Containment Isolation Valves (Systems); dated August 30, 1982.

2.4 Letter from L.D. White, RG&E, to D.L. Ziemann, NRC, Subject: Discussion of Lessons Learned Short Term Requirements; dated November 19, 1979.

2.5 Letter from L.D. White, RG&E, to B.H. Grier, NRC, Subject: IE Bulletins 79-06A and 79-06A Revision 1; dated June 22, 1979.

2.6 Letter from L.D. White, RG&E, to D.L. Ziemann, NRC, Subject: Followup Actions Resulting from the NRC Staff Reviews Regarding the TMI Unit 2 Accident; dated October 17, 1979.

2.7 Letter from D.M. Crutchfield, NRC, to J.E. Maier, NRC, Subject: Forwarding Final Evaluation Report of SEP Topic VI-4, Containment Isolation System for the Ginna Nuclear Power Plant; dated April 12, 1982.

2.8 Letter from J.E. Maier, RG&E, to D.M. Crutchfield, NRC, Subject: SEP Topic VI-4, Containment Isolation System; dated December 30, 1981.

2.9 NUREG-0821, Integrated Plant Safety Assessment, Systematic Evaluation Program, R.E. Ginna Nuclear Power Plant; dated December 1982.

2.10 RG&E Inter-Office Correspondence from G.J. Wrobel, to S.T. Adams, Subject: Necessary Clarifications Associated With Technical Specification Table 3.6-1; dated July 2, 1990.

2.11 RG&E Inter-Office Correspondence from G.J. Wrobel, to S.T. Adams, Subject: Containment Isolation Valves AOV 745 (Penetration 124a), MOV 749A (Penetration 127), and MOV 749B (Penetration 128); dated June 22, 1990.

2.12 RG&E Inter-Office Correspondence from G.J. Wrobel, to S.T. Adams, Subject: Technical Specification Interpretation of Containment Isolation Valves MOVs 749 A/B; dated June 21, 1990.

2.13 USNRC, Regulatory Guide 1.70, Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants; Revision 3, November 1978.

2.14 Letter from D.D. DiIanni, USNRC, to R.W. Kober, RG&E, Subject: SEP Topic VI-4, NUREG-0821 Section 4.22.2, Containment Isolation Valves; dated January 30, 1987.

2.15 NUREG-0800, Standard Review Plan, Section 6.2.4, Revision 2, July 1981.

2.16 Letter from R.C. Mecredy, RG&E, to A.R. Johnson, NRC, Subject: Operability of AOV 745 and MOVs 749A/B; dated July 9, 1990.

2.17 Letter from R.C. Mecredy, RG&E, to A.R. Johnson, NRC, Subject: Modification of Containment Penetration #2; dated March 13, 1990.

2.18 Ginna Station Procedure 0-2.3.1A, Containment Closure Capability in Two Hours During RCS Reduced Inventory Operations, Revision 5, dated April 28, 1990.

2.19 Ginna Station Quality Assurance Manual.

2.19.1 Appendix B, Inservice Inspection Program For the 1990-1999 Interval, Revision 0, dated January 1, 1990.

2.20 10CFR50, Appendix J, Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors.

2.21 Ginna Station Procedure, AP-CCW.2, Loss of CCW During Power Operation, Revision 8, dated December 12, 1989.

2.22 Altran Corporation, Instrument Air System Design Basis Document, dated November 27, 1989.

2.23 Ginna Station Procedure, PT-2.6, Cold/Refueling Shutdown Air Operated Valve Surveillance, Revision 29, dated October 19, 1990.

2.24 Letter from R.C. Mecredy, RG&E, to A.R. Johnson, NRC, Subject: Application for Amendment to Operating License with Respect to Technical Specification Containment Isolation Valve Table 3.6-1; dated October 15, 1990.

2.25 Letter from A.R. Johnson, NRC, to R.C. Mecredy, RG&E, Subject: "Ginna Proposed License Amendment Dated October 15, 1990 - Request for Additional Information", dated December 15, 1990.

3.0 Safety Analysis

3.1 The system affected by these UFSAR changes is the containment isolation system. This system is designed to isolate non-essential process lines which penetrate the containment to ensure that the total leakage of activity will be within design limits in the event of an accident. In addition, the parent systems (e.g., Safety Injection) of the components contained in the containment isolation system can be considered affected by this UFSAR change. However, there is no change to the capability of these systems to perform their intended design function, only an update of their ability to isolate containment when required.

3.2 The updated UFSAR Table 6.2-13 is presented in Attachment A. Due to the significant number of changes, a marked-up version of the current UFSAR table was not generated. Instead, Attachment B provides a detailed listing of all changes made to the table (Revision 5). Attachment B is divided into four (4) sub tables.

(1) The first table provides a listing of global notes which were applied as applicable to eliminate redundancy.
(2) The second table provides a listing of changes made to the format and overall structure of the UFSAR table.
(3) The third table lists the changes made to each individual penetration on the UFSAR table.

(4) The fourth table identifies all changes made to the UFSAR table notes. However, since many modifications were made to the UFSAR table, most notes have been renumbered and revised. Consequently, to eliminate confusion, a change associated with the notes column for a particular penetration is only identified in Table 3 if a note has been added or deleted. There is no change identified in Table 3 if a note number has only been changed, if changes were made to the note itself, or if the note was deleted globally. Instead, these changes are provided in Table 4.

3.3 The changes to UFSAR Table 6.2-13 fall into three categories:

(1) clarifications or corrections of typographical errors and omissions,
(2) updates to better represent actual plant conditions, and
(3) updates for consistency between the UFSAR, Technical Specifications, and previous commitments made by RG&E.

3.3.1 The correction of typographical errors and omissions does not involve any technical change to the UFSAR table nor the function and capability of the containment isolation system. All columns and rows in the table now contain either the necessary information or "NA". No blanks or "-" remain in the table. In addition, the clarifications made to the UFSAR table are minor and do not involve any technical changes. Significant clarifications are discussed below.

3.3.1.1 The Position At Postaccident column was changed to reflect plant conditions immediately following a Containment Isolation Signal (CIS). This column was modified since system configurations can be changed during recovery operations. If this column was not modified, it would require most valves to list "O/C". The column now provides a clear listing of the valve positions prior to any operator action (i.e., "immediate" post accident). The addition of Footnote "e" provides further clarification of locked closed valves.

3.3.1.2 The Notes column was changed to only supplement UFSAR Section 6.2.4.4.2 text. All duplications of information contained in the UFSAR text was removed from the Notes. The Notes column now only identify exceptions, references, etc., not contained in the UFSAR text.

3.3.1.3 The Fluid Type and Temperature columns were removed from the table since they do not provide any information relevant to the UFSAR Table. This information can be obtained from other sources including Appendix B of the Ginna Station Quality Assurance Manual. Consequently, the information contained in these columns remains in other RG&E controlled documents.

3.3.1.4 The Position Indication In Control Room column was modified to show the type of indication instead of "Yes/No". This is a significant enhancement since the table now identifies if there is a white status light or a red/green light associated with the valve on the Main Control Board, or both.

3.3.2 The updates to the UFSAR table to better represent actual plant conditions are described below.

3.3.2.1 Penetration #2 was added to the table. This spare penetration was modified during the 1990 Refueling Outage to enhance containment closure during mid-loop operations. The penetration meets all current containment penetration criteria. See Reference 2.17.

3.3.2.2 Several valves had their positions as listed under the Position At columns in the UFSAR Table changed to a more conservative position. That is, the valve position changed from either a "O/C" to "C", "O" to "C", "O" to "LC", or "C" to "LC". (See Table 3 of Attachment B for a detailed description of these changes on a penetration by penetration basis.) For these cases, the valve is now identified as being in an isolated or closed position which is the function of a containment isolation valve. Valves (and penetration #) in this category include: 370B (#100), 879 (#110b), 371 (#112), 846 (#120a), 539 (#120b), 547 (#121a), 528 (121a), 508 (#121b), 743 (#124a), 745 (#124a), 1569 (#124b), 1571 (#124b), 1572 (#124b), 1574 (#124b), 759B (#125), 759A (#126), 749A (#127), 749B (#128), 1787 (#129), 1786 (#129), 7971 (#132), 1076B (#202), 1084B (#202), 1563 (#203b), 1565 (#203b), 1566 (#203b), 1568 (#203b), 5869 (#204), 966C (#205), 966B (#206a), 5735 (#206b), 966A (#207a), 5736 (#207b), 1080 (#210), 5879 (#300), 6151 (#301), 6165 (#301), 6175 (#303), 6152 (#303), 1076A (#304), 1084A (#304), 1554 (#305c), 1556 (#305c), 1557 (#305c), 1559 (#305c), 1560 (#305c), 1562 (#305c), 7141 (#310a), 921 (#332c), 922 (#332c), 923 (#332c), and 924 (#332c).

3.3.2.3 Several valves had their positions as listed under the Position At columns in the UFSAR Table changed to a comparable position. That is, the valve position changed from either a "O" to "O/C" or "O/C" to "O". (See Table 3 of Attachment B for a detailed description of these changes on a penetration by penetration basis.) For these cases where the valve was listed as open, the valve and penetration was required to be evaluated previously assuming that it was open since this was the most conservative position. Therefore, changing the valve's position for these cases does not negatively impact the penetration or containment isolation system since the valve was conservatively evaluated under open conditions previously. Valves (and penetration #) in this category include: 1723 (#107), 1728 (#107), 313 (#108), 1789 (#123 bottom), 1003A (#143), 1003B (#143), 5869 (#204), 5735 (#206b), 5736 (#207B), 5879 (#300), 4629 (#308), 4630 (#311), 4642 (#312), 4643 (#315), 4628 (#316), 4627 (#319), 4641 (#320), 4644 (#323), and 8418 (#324).

3.3.2.4 Several valves had their positions as listed under the Position At Cold Shutdown column in the UFSAR Table changed to a less conservative position. That is, the valve position changed from either a "C" to "O" or "C" to "O/C". (See Table 3 of Attachment B for a detailed description of these changes on a penetration by penetration basis.) However, containment integrity is not required in the Cold Shutdown condition (Technical Specification 3.6.1). In addition, during reduced RCS inventory operations, the position of these valves (or an automatic isolation valve in the same line) is verified by Reference 2.18. Thus, these valves can be closed if needed. Also, during Refueling Operations, Technical Specification 3.8.1 requires that all "automatic containment isolation valves shall be operable or at least one valve in each line shall be locked closed." Therefore, containment isolation is assured during refueling operations. Consequently, these changes do not negatively impact the penetration or the containment isolation system since administrative controls are in place. Valves (and penetration #) in this category include: 7970 (#132), 7971 (#132), 5393 (#310b), 7443 (#317), 5738 (#321), and 5737 (#322).

3.3.2.5 Several valves had their positions as listed under the Position At Normal Operation and Position At Immediate Postaccident columns in the UFSAR Table changed to a less conservative position. That is, the valve position changed either from a "C" to "O/C", or "O" to "LO". (See Table 3 of Attachment B for a detailed description of these changes on a penetration by penetration basis.) There are two categories of valves which meet this criteria (organized by justification).

(a) 529 (#121b) - This penetration has an automatic isolation valve in the line to perform the necessary isolation function. In addition, since this check valve sees the same conditions as the associated automatic isolation valve, their positions should be the same. Consequently, the change does not negatively impact the penetration or the containment isolation system.

(b) 4629 (#308), 4630 (#311), 4642 (#312), 4643 (#315), 4628 (#316), 4627 (#319), 4641 (#320), 4644 (#323) - These essential Service Water System penetrations operate at a higher pressure than the containment accident pressure and are missile protected inside containment. Consequently, the line is not required to isolate. See UFSAR Table Note 17. Therefore, the change in valve position does not negatively impact the penetration or the containment isolation system.

3.3.2.6 The Trip on CIS column was changed from a "Yes" to a "No" for valve 745 (#124a). The Maximum Isolation Time column was also changed from "60" to "NA". These changes are justified per Reference 2.16.

3.3.2.7 Several penetrations had valves added to the table, deleted, or both. These are described below by penetration number.

(a) Penetration 103 - Valve 5129 was deleted from the table and replaced by a Blind Flange. This change enabled the elimination of the previous note of "No longer in use" that was associated with this penetration. The penetration now reflects the current configuration. The use of the Blind Flange is consistent with the previous locked-closed manual valve.

(b) Penetration 111 - Added valve 959. The addition of this valve to the table ensures that all valves receiving a containment isolation signal are listed. This valve was previously missing from the table, but credit was not taken for the valve during the SEP (see Reference 2.7). Consequently, this is not considered an actual isolation valve and is not tested per Appendix J.

(c) Penetration 112 - Valves 204A and 821 were deleted and replaced with valves 200A, 200B, and 202. Valve 427 was also added. The addition of these valves enables explicit compliance with GDC 55 versus the use of the two redundant isolation valves. These new valves are included in the current IST program (see Reference 2.19).

(d) 123 (bottom) - Added valve 1600A. See explanation for 3.3.2.7 (b) above.

(e) Penetration 141 - Deleted valve 851A and added valve 1813A. Valve 851A does not meet the selection criteria for 10CFR50 Appendix J, Section IIH, items 1 through 4. Consequently, the valve was deleted from the table. Valve 1813A was previously missing from the table. This valve is locked-closed with its breaker locked open.

(f) Penetration 142 - Deleted valve 851B and added valve 1813B. See explanation for 3.3.2.7 (e) above.

(g) Penetration 205 - Added valve 955. See explanation for 3.3.2.7 (b) above.

(h) Penetration 206a - Added valve 953. See explanation for 3.3.2.7 (b) above.

(i) Penetration 207a - Added valve 951. See explanation for 3.3.2.7 (b) above.

(j) Penetration 210 - Added valves 10214S1 and 10215S1. These valves were previously missing from the table, but receive an isolation signal.

3.3.2.8 Penetration 332b - Deleted entire penetration branch from the table. This penetration branch contains double isolation, fits the criteria as a test connection, and performs no active function. Therefore, there is no requirement to test the valves as containment isolation valves. Consequently, this penetration branch was removed from the table.

3.3.3 Several updates were made to the UFSAR table to ensure consistency between the UFSAR, Technical Specifications, and previous commitments made by RG&E. These changes are typically only clarifications. The significant changes are described below.

3.3.3.1 Notes 7 and 19 were added to ensure that consistency is maintained between Technical Specification Table 3.6-1 and the UFSAR Table. These notes mainly provide clarification and do not involve a technical change.

3.3.3.2 The Maximum Isolation Time of several valves was changed to a more conservative duration. That is, the time was changed from "NA" to either "3" seconds for solenoid valves, or "60" seconds for AOVs and MOVs. (See Table 3 of Attachment B for a detailed description of these changes on a penetration by penetration basis.) The UFSAR Table now identifies an isolation time for all valves receiving a containment isolation signal. Valves (and penetration #) in this category include: 1787 (#129), 10211S1 (#202), 10213S1 (#202), 966C (#205), 966B (#206a), 5735 (#206b), 966A (#207a), 5736 (#207b), 10214S (#210), 10215S1 (#210), 10205S1 (#304), 10209S1 (#304), 1597 (#305a), 1599 (#305b), and 8418 (#324).

3.3.3.3 The Maximum Isolation Time of several valves was changed to a less conservative duration. There are three categories of valves which meet this criteria (organized by justification):

(a) 749A (#127), 749B (#128) - These valves do not receive a containment isolation signal. Consequently, the Maximum Isolation Time was changed to "NA" since there is no need for a maximum isolation time.

(b) 5869 (#204) - This valve does not require an isolation time since the associated blind flange acts as the isolation boundary. See UFSAR Table Note 19. Consequently, the Maximum Isolation Time was changed to "NA" since there is no need for a maximum isolation time.

(c) 7970 (#132), 7971 (#132), 7478 (#309), and 7445 (#309) - The isolation time for these butterfly valves was changed from "2" seconds to "3" seconds. Technical Specification Table 3.6-1 allows five seconds with instrument delay. However, the Maximum Isolation Time column does not include instrument delay per Note "b". The instrument delay time for these valves is approximately 2 seconds. Consequently, the valve isolation time was changed to "3" seconds.

3.3.4 The UFSAR Figures related to containment penetrations (6.2-13 through 6.2-76) were updated to reflect the changes to Table 6.2-13. The UFSAR Figures now reflect the updated UFSAR Table 6.2-13 (i.e., the current plant configuration). Conseqeuntly, the basis for these changes is the same as that for the UFSAR Table 6.2-13 changes. The following UFSAR Section 6.2 Figures were revised: 13, 17, 18, 19, 22, 23, 24, 25, 31, 32, 33, 37, 38, 42, 43, 46, 47, 55, 56, 58, 64, 65, 67, 68, 73, 74, 75, and 76 (see Attachment C).

3.4 The marked-up UFSAR Section 6.2.4 is presented in Attachment C. The majority of changes to the UFSAR text are only clarifications or provide consistency with the revised UFSAR Table 6.2-13 and the Technical Specifications. GDC exemptions related to penetrations are now clearly identified with the basis (e.g., references) for their acceptability provided. The final resolution of previous committments made to the NRC related to the containment isolation system is also addressed. In addition, UFSAR Section 6.2.4 was divided into subsections based on the five penetration classes to enhance future reference capability. The basis for the majority of changes to UFSAR Section 6.2.4 is the same as those with respect to UFSAR Table 6.2-13. The significant changes to UFSAR Section 6.2.4 not previsously discussed in Section 3.3 of this Safety Analysis are presented below.

3.4.1 Section 6.2.4.4.2.2 - The discussion concerning line 140 was revised to show that only one motor-operated valve is provided for this penetration instead of the two previously listed. There are in-fact two motor-operated valves in this line; however, credit is only taken for one of these valves as an isolation barrier (see UFSAR Table 6.2-13 and Reference 2.7). Consequently, the discussion was modified to reflect only a single valve.

3.4.2 Section 6.2.4.4.4.2 - The discussion concerning line 111 was revised to show that only one motor-operated valve is provided for this penetration instead of the two previously listed. The basis for this change is the same as discussed in Section 3.4.1.

3.4.3 Section 6.2.4.4.5.2 - Additional discussion concerning penetration lines 125, 126, 127, and 128 is provided. The UFSAR previously stated that these lines "satisfy the explicit requirements of GDC 57". However, these lines are considered essential (Reference 2.4) and do not receive a containment isolation signal due to the potential for damaging the reactor coolant pumps following a spurious signal. Isolation capability is provided by Ginna Station procedures (Reference 2.21) which instruct operators to isolate these lines under certain loss of component cooling water scenarios. Consequently, the new discussion provides a more accurate representation of the system configuration.

3.5 The revised UFSAR Table 6.2-14 is presented in Attachment D. The previous table is being replaced in its entirety; consequently, only the updated table is provided. The previous table came from the original FSAR and was difficult to follow since it did not provide valve numbers, only descriptions of system configurations. The new table provides a listing of all air-operated valves for each penetration listed in UFSAR Table 6.2-13. The same information which previously existed on the table is retained (i.e., failure position of the valves following loss of air). In addition, it is identified for each valve whether it receives a containment isolation signal. The information for this table was provided by References 2.22 and 2.23. The basis for any changes to valve failure positions is provided in Section 3.3.

3.6 The marked-up UFSAR Table 6.2-15 is presented in Attachment E. The changes to this table are mainly clarifications which provide consistency with the revised UFSAR Table 6.2-13. All penetrations listed in UFSAR Table 6.2-13 are now specified in Table 6.2-15 along with their categorization of being essential or nonessential. No information is being deleted from the table.

3.7 A review of the design basis events analyzed in the Ginna Station UFSAR and the events requiring analysis as described in USNRC Reg. Guide 1.70 was performed. The events related to this UFSAR change are:

(a) Fires
(b) Seismic Events
(c) Radiological Release From a Subsystem or Component
(d) Decrease in Reactor Coolant Inventory
(e) Events Initiating a Safety Injection Signal

3.7.1 The changes as described in Sections 3.3 through 3.6 and Attachments A through E do not affect the capability of the containment isolation system to perform its function during a fire. The changes to the UFSAR are mainly minor clarifications and updates to reflect current plant conditions. There is no physical modification to Ginna Station as a result of these changes. No fire barriers are affected by these changes, nor is there any increase in area fire loadings.

3.7.2 The changes as described in Sections 3.3 through 3.6 and Attachments A through E do not affect the capability of the containment isolation system to perform its function during a seismic event. The changes to the UFSAR are mainly minor clarifications and updates to reflect current plant conditions. No changes are made with respect to the seismic design of the affected penetrations.

3.7.3 The changes as described in Sections 3.3 through 3.6 and Attachments A through E do not affect the capability of the containment isolation system to respond to a radiological release within containment. The containment isolation system was reviewed in depth during the SEP and 1988 IST submittal. The changes to the UFSAR are mainly clarifications and updates to reflect current plant conditions. There is no physical modification to Ginna Station as a result of these changes. Consequently, the containment isolation system is still within its design basis limits.

3.7.4 The changes as described in Sections 3.3 through 3.6 and Attachments A through E do not create the potential for the affected penetrations to cause a decrease in RCS inventory (i.e., a loss-of-coolant-accident). The containment isolation system was reviewed in depth during the SEP and 1988 IST submittal. The changes to the UFSAR are mainly clarifications and updates to reflect current plant conditions. No changes were made to capability of the parent systems (e.g., Residual Heat Removal) to perform their function. Consequently, the containment isolation system and associated parent systems remain within their design basis limits.

3.7.5 Events which initiate Safety Injection also result in the need for containment isolation. The changes to the UFSAR do not affect the capability of the containment isolation system to perform its function. All changes were reviewed to ensure continued compliance with the design basis for the containment isolation system and the Ginna Station Licensing Basis.

4.0 Preliminary Safety Evaluation

4.1 The proposed UFSAR changes will not increase the probability of occurrence of an accident previously evaluated in the UFSAR. The changes to the UFSAR are to correct typographical errors, provide additional clarification, and update tables and text to reflect actual plant conditions. All changes to UFSAR Table 6.2-13 considered "less conservative" are acceptable and do not increase the probability of occurrence as discussed in Sections 3.3.2.4, 3.3.2.5, 3.3.2.6, and 3.3.3.3. All additions and deletions to UFSAR Table 6.2-13 are also acceptable and do not increase the probability of occurrence as discussed in Sections 3.3.1.3, 3.3.2.1, 3.3.2.7, and 3.3.2.8. The changes to the UFSAR Figures, text, Table 6.2-14, and Table 6.2-15 as discussed in Sections 3.3.4, 3.4, 3.5, and 3.6 respectively, only provide additional clarification with respect to the revised UFSAR Table 6.2-13. Thus, there is no change in system function, nor a reduction in system reliability. The containment isolation and parent systems will remain within their design limits.

4.2 The proposed UFSAR changes will not increase the consequences of an accident previously evaluated in the UFSAR. The modification does not impact or increase the calculated radiological dose to the general public for any event evaluated in the UFSAR. All changes to UFSAR Table 6.2-13 considered "less conservative" are acceptable and do not increase the consequences of an accident as discussed in Sections 3.3.2.4, 3.3.2.5, 3.3.2.6, and 3.3.3.3. All additions and deletions to UFSAR Table 6.2-13 are also acceptable and do not increase the consequences of an accident as discussed in Sections 3.3.1.3, 3.3.2.1, 3.3.2.7, and 3.3.2.8. The changes to the UFSAR Figures, text, Table 6.2-14, and Table 6.2-15 as discussed in Sections 3.3.4, 3.4, 3.5, and 3.6 respectively, only provide additional clarification with respect to the revised UFSAR Table 6.2-13. Thus, the function and capability of the containment isolation system to isolate any radiological release within containment is not degraded.

4.3 The proposed UFSAR changes will not increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the UFSAR. All changes to UFSAR Table 6.2-13 considered "less conservative" are acceptable and do not increase the probability of occurrence as discussed in Sections 3.3.2.4, 3.3.2.5, 3.3.2.6, and 3.3.3.3. All additions and deletions to UFSAR Table 6.2-13 are also acceptable and do not increase the probability of occurrence as discussed in Sections 3.3.1.3, 3.3.2.1, 3.3.2.7, and 3.3.2.8. The changes to the UFSAR Figures, text, Table 6.2-14, and Table 6.2-15 as discussed in Sections 3.3.4, 3.4, 3.5, and 3.6 respectively, only provide additional clarification with respect to the revised UFSAR Table 6.2-13. Thus, the changes do not degrade the performance of the containment isolation system, nor the associated parent systems.

4.4 The proposed UFSAR changes will not increase the consequences of a malfunction of equipment important to safety previously evaluated in the UFSAR. The changes do not impact or increase the calculated radiological dose to the general public for any event evaluated in the UFSAR. All changes to UFSAR Table 6.2-13 considered "less conservative" are acceptable and do not increase the consequences of a malfunction of equipment as discussed in Sections 3.3.2.4, 3.3.2.5, 3.3.2.6, and 3.3.3.3. All additions and deletions to UFSAR Table 6.2-13 are also acceptable and do not increase the consequences of a malfunction of equipment as discussed in Sections 3.3.1.3, 3.3.2.1, 3.3.2.7, and 3.3.2.8. The changes to the UFSAR Figures, text, Table 6.2-14, and Table 6.2-15 as discussed in Sections 3.3.4, 3.4, 3.5, and 3.6 respectively, only provide additional clarification with respect to the revised UFSAR Table 6.2-13. Thus, the function and capability of the containment isolation system to isolate any radiological release from containment is not degraded.

4.5 The proposed UFSAR changes will not create the possibility of an accident of a different type than any previously evaluated in the UFSAR. These changes are mainly clarifications and updates to reflect current plant conditions. All changes to UFSAR Table 6.2-13 considered "less conservative" are acceptable and do not increase the consequences of a malfunction of equipment as discussed in Sections 3.3.2.4, 3.3.2.5, 3.3.2.6, and 3.3.3.3. All additions and deletions to UFSAR Table 6.2-13 are also acceptable and do not increase the consequences of a malfunction of equipment as discussed in Sections 3.3.1.3, 3.3.2.1, 3.3.2.7, and 3.3.2.8. The changes to the UFSAR Figures, text, Table 6.2-14, and Table 6.2-15 as discussed in Sections 3.3.4, 3.4, 3.5, and 3.6 respectively, only provide additional clarification with respect to the revised UFSAR Table 6.2-13. There are no adverse affects upon other systems, nor any new failure modes induced.

4.6 The proposed UFSAR changes will not create the possibility of a different type of malfunction of equipment important to safety than any previously evaluated in the UFSAR. The additions and deletions to UFSAR Table 6.2-13 are acceptable as discussed in Sections 3.3.1.3, 3.3.2.1, 3.3.2.7, and 3.3.2.8. The changes to UFSAR Table 6.2-14 are acceptable as discussed in Section 3.5. The changes to UFSAR Table 6.2-15 are acceptable as discussed in Section 3.6. The changes do not degrade the containment isolation or associated parent systems.

4.7 The proposed UFSAR changes will not reduce any margin of safety as defined in the basis of any technical specification. The functions and characteristics of the containment isolation system remains unchanged. However, changes are made to valve isolation times and the valves listed for specific penetrations. These changes are addressed in the Amendment Request to remove Table 3.6-1 from the Technical Specifications and reference the updated UFSAR Table 6.2-13 (Reference 2.24).

4.8 Based on the above analysis, it has been determined that:

(a) The margins of safety during normal operation and transient conditions anticipated during the life of the plant has not been reduced, and

(b) The adequacy of structures, systems, and components provided for the prevention of accidents and for the mitigation of the consequences of accidents have not been affected.

Attachment A

UFSAR Table 6.2-13

Table 6.2-13

CONTAINMENT PIPING PENETRATIONS AND ISOLATION VALVING

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At e: Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Steam generator inspection/ maintenance	2	NA	Blind flange	NA	NA	Inside Outside	C	O/C	C	NA	NA	NA	6.2-13	5	1, 2
Fuel transfer tube	29	NA	Blind flange	NA	NA	Inside	C	O/C	C	NA	NA	NA	6.2-13	5	2, 3
Charging line to B loop	100	370B	Check	NA	NA	Inside	O	C	C	NA	NA	NA	6.2-14	3B	4
Safety injection pump 1B discharge	101	870B 889B	Check Check	NA NA	NA NA	Outside Outside	C C	C C	O O	NA NA	NA NA	NA NA	6.2-15 6.2-15	3B 3B	4 4
Alternate charging to A cold leg	102	383B	Check	NA	NA	Inside	C	C	C	NA	NA	NA	6.2-16	3B	4
Construction fire service water	103	NA	Blind flange	NA	NA	Inside	C	C	C	NA	NA	NA	6.2-17	5	5
Containment spray pump 1A	105	862A	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-18	3B	4
Reactor coolant pump A seal water inlet	106	304A	Check	NA	NA	Inside	O	O	C	NA	NA	NA	6.2-19	3B	4
Pump A discharge to waste holdup tank	107	1723 1728	Diaphragm Diaphragm	Air Air	Status Status	Outside Outside	O O	O/C O/C	C C	FC FC	Yes Yes	60 60	6.2-20 6.2-20	2 2	

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Legend

AO	= Fails as is
AOV	= Air-operated valve
C	= Closed
CIS	= Containment isolation signal
CV	= Check valve
FC	= Fails closed
FO	= Fails open
LC	= Locked closed
MOV	= Motor-operated valve
MV	= Manual valve
O	= Open
O/C	= Open or closed
R/G	= Red/green light on main control board
Status	= White status light
SOV	= Solenoid-operated valve
Both	= R/G and Status

Table 6.2-13

CONTAINMENT PIPING PENETRATIONS AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At[e] Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Reactor coolant pump seal water return line and excess letdown to PCT	108	313	Gate	Motor	Both	Outside	O	O/C	C	AI	Yes	60	6.2-21	1	4, 6
Containment spray pump 1B	109	862B	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-22	3B	4
Reactor coolant pump B seal water inlet	110a (top)	304B	Check	NA	NA	Inside	O	O	C	NA	NA	NA	6.2-23	3B	4
Safety injection test line	110b (bottom)	879	Globe	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-15	1	4
Residual heat removal to B cold leg	111	720	Gate	Motor	R/C	Inside	C	O	C	AI	No	NA	6.2-24	3B	4, 7, 8
		959	Globe	Air	Status	Outside	C	O/C	C	FC	Yes	NA	6.2-24	3B	4, 7
Letdown to nonregenerative heat exchanger	112	200A	Globe	Air	R/C	Inside	O/C	C	C	FC	Yes	60	6.2-25	1	10
		200B	Globe	Air	R/C	Inside	O/C	C	C	FC	Yes	60	6.2-25	1	10
		202	Globe	Air	R/C	Inside	C	C	C	FC	Yes	60	6.2-25	1	10
		371	Globe	Air	Both	Outside	O	O	C	FC	Yes	60	6.2-25	1	
		427	Globe	Air	R/C	Inside	O	O/C	C	FO	Yes	NA	6.2-25	1	9
Safety injection pump 1A discharge	113	870A	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-15	3B	4
		889A	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-15	3B	4
Standby auxiliary feedwater line to steam generator 1A	119	9704A	Stop-check	Motor	R/C	Outside	C	C	O	AI	No	NA	6.2-26	4	11
		9705A	Check	NA	NA	Inside	C	C	O	NA	NA	NA	6.2-26	4	11
Nitrogen to accumulators	120a	846	Globe	Air	Both	Outside	C	O/C	C	FC	Yes	60	6.2-27	3A	
		8623	Check	NA	NA	Inside	O/C	O/C	C	NA	NA	NA	6.2-27	3A	
Pressurizer relief tank to gas analyzer	120b	539	Globe	Air	Status	Outside	C	O/C	C	FC	Yes	60	6.2-28	2	
		546	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-28	2	
Nitrogen to pressurizer relief tank	121a	528	Check	NA	NA	Inside	C	O/C	C	NA	NA	NA	6.2-29	3A	
		547	Globe	Manual	No	Outside	LC	O/C	LC	NA	NA	NA	6.2-29	3A	12
Makeup water to pressurizer relief tank	121b	508	Diaphragm	Air	Both	Outside	C	O/C	C	FC	Yes	60	6.2-30	3A	
		529	Check	NA	NA	Inside	O/C	O/C	C	NA	NA	NA	6.2-30	3A	

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Table 6.2-13

CONTAINMENT PIPING PENETRATIONS AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At[e] Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Containment pressure transmitter PT945	121c	PT945	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-31	2	13
		1819A	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-31	2	
Containment pressure transmitter PT946	121d	PT946	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-31	2	13
		1819B	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-31	2	
Standby auxiliary feedwater line to steam generator 1B	123 (top)	9704B	Stop-check	Motor	R/C	Outside	C	C	O	AI	No	NA	6.2-26	4	11
		9705B	Check	NA	NA	Inside	C	C	O	NA	NA	NA	6.2-26	4	11
Reactor coolant drain tank to gas analyzer line	123 (bottom)	1600A	Globe	Solenoid	No	Outside	O	O/C	C	FC	Yes	NA	6.2-32	2	9
		1655	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-32	2	
		1789	Diaphragm	Air	Status	Outside	O	O/C	C	FC	Yes	60	6.2-32	2	
Excess letdown heat exchanger cooling water supply & return	124a	743	Check	NA	NA	Inside	C	C	C	NA	NA	NA	6.2-33	4	
		745	Globe	Air	R/C	Outside	C	C	C	FC	No	NA	6.2-33	4	14
Postaccident air sample to C fan	124b	1569	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-34	5	
		1571	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-34	5	
		1572	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-34	5	
		1574	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-34	5	
Component cooling water from reactor coolant pump 1B	125	759B	Gate	Motor	R/C	Outside	O	C	O	AI	No	NA	6.2-35	4	4
Component cooling water from reactor coolant pump 1A	126	759A	Gate	Motor	R/C	Outside	O	C	O	AI	No	NA	6.2-36	4	4
Component cooling water to reactor coolant pump 1A	127	749A	Gate	Motor	R/C	Outside	O	C	O	AI	No	NA	6.2-37	4	
		750A	Check	NA	NA	Inside	O	C	O	NA	NA	NA	6.2-37	4	
Component cooling water to reactor coolant pump 1B	128	749B	Gate	Motor	R/C	Outside	O	C	O	AI	No	NA	6.2-38	4	
		750B	Check	NA	NA	Inside	O	C	O	NA	NA	NA	6.2-38	4	

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Table 6.2-13

CONTAINMENT PIPING PENETRATIONS AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At e: Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Reactor coolant drain tank and pressurizer relief tank to containment vent header	129	1713	Check	NA	NA	Outside	C	O/C	C	NA	NA	NA	6.2-39	3A	
		1786	Diaphragm	Air	Status	Outside	O	C	C	FC	Yes	60	6.2-39	3A	
		1787	Diaphragm	Air	Status	Outside	O	C	C	FC	Yes	60	6.2-39	3A	
		1793	Diaphragm	Manual	No	Outside	LC	O/C	LC	NA	NA	NA	6.2-39	3A	12
Component cooling water from reactor support cooling	130	814	Gate	Motor	Both	Outside	O	O	C	AI	Yes	60	6.2-40	4	
Component cooling water to reactor support cooling	131	813	Gate	Motor	Both	Outside	O	O	C	AI	Yes	60	6.2-40	4	
Containment mini-purge exhaust	132	7970	Butterfly	Air	Both	Inside	O/C	O/C	C	FC	Yes	3	6.2-41	5	
		7971	Butterfly	Air	Both	Outside	C	O/C	C	FC	Yes	3	6.2-41	5	
Residual heat removal pump suction from A hot leg	140	701	Gate	Motor	R/C	Inside	C	O	C	AI	No	NA	6.2-42	1	7, 8
Residual heat removal pump A suction from sump B	141	850A	Gate	Motor	R/C	Outside	C	C	O	AI	No	NA	6.2-42	5	15
		1813A	Gate	Motor	R/C	Outside	C	O/C	C	AI	No	NA	6.2-42	5	8
Residual heat removal pump B suction from sump B	142	850B	Gate	Motor	R/C	Outside	C	C	O	AI	No	NA	6.2-42	5	15
		1813B	Gate	Motor	R/C	Outside	C	O/C	C	AI	No	NA	6.2-42	5	8
Reactor coolant drain tank discharge line	143	1003A	Diaphragm	Air	Status	Outside	O	O/C	C	FC	Yes	60	6.2-43	2	
		1003B	Diaphragm	Air	Status	Outside	O	O/C	C	FC	Yes	60	6.2-43	2	
		1721	Diaphragm	Air	Status	Outside	O	O	C	FC	Yes	60	6.2-42	2	
Reactor compartment cooling units A and B	201 (top)	4757	Butterfly	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-44	4	16
	201 (bottom)	4636	Butterfly	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-45	4	17
B hydrogen recombiner (pilot and main)	202	1076B	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-46	5	
		1084B	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-46	5	
		1021151	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-46	5	18
		10213S1	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-46	5	18

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Table 6.2-13

CONTAINMENT PIPING PENETRATIONS AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At[e] Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Containment pressure transmitter PT947 and PT948	203a	PT947	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-47	2	13
		PT948	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-47	2	13
		1819C	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-47	2	
		1819D	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-47	2	
Postaccident air sample to D fan	203b	1563	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-48	5	
		1565	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-48	5	
		1566	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-48	5	
		1568	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-48	5	
Purge supply duct	204	NA	Blind flange	NA	NA	Inside	C	O	C	NA	NA	NA	6.2-49	5	2, 19
		5869	Butterfly	Air	Both	Outside	C	O/C	C	FC	Yes	NA	6.2-49	5	19
Loop B hot leg sample	205	955	Globe	Air	Status	Inside	C	C	C	FC	Yes	NA	6.2-50	1	9
		956D	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-50	1	
		966C	Globe	Air	Status	Outside	C	C	C	FC	Yes	60	6.2-50	1	
Pressurizer liquid space sample	206a (top)	953	Globe	Air	Status	Inside	C	C	C	FC	Yes	NA	6.2-51	1	9
		956E	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-51	1	
		966B	Globe	Air	Status	Outside	C	C	C	FC	Yes	60	6.2-51	1	
Steam generator A sample	206b (bottom)	5733	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-52	4	
		5735	Globe	Air	Status	Outside	O	C	C	FC	Yes	60	6.2-52	4	6
Pressurizer steam space sample	207a (top)	951	Globe	Air	Status	Inside	C	C	C	FC	Yes	NA	6.2-53	1	9
		956F	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-53	1	
		966A	Globe	Air	Status	Outside	C	C	C	FC	Yes	60	6.2-53	1	
Steam generator B sample	207b (bottom)	5734	Globe	Manual	No	Outside	O	C	O	NA	NA	NA	6.2-54	4	
		5736	Globe	Air	Status	Outside	O	C	C	FC	Yes	60	6.2-54	4	
Reactor compartment cooling units A and B	209 (top)	4635	Butterfly	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-44	4	16
	209 (bottom)	4758	Butterfly	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-45	4	17
Oxygen makeup to A & B recombiners	210	1080A	Globe	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-55	5	
		10214S	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-55	5	18, 9
		10214S1	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-55	5	18
		10215S	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-55	5	18, 9
		10215S1	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-55	5	18
Purge exhaust duct	300	NA	Blind flange	NA	NA	Inside	C	O	C	NA	NA	NA	6.2-56	5	2, 19
		5879	Butterfly	Air	Both	Outside	C	O/C	C	FC	Yes	NA	6.2-56	5	19
Auxiliary steam supply to containment	301	6151	Gate	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-57	4	5
		6165	Gate	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-57	4	5

Table 6.2-13

CONTAINMENT PIPING PENETRATIONS
AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At: Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Auxiliary steam	303	6152	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-57	4	5
condensate return		6175	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-57	4	5
A hydrogen	304	1076A	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-58	5	
recombiner (pilot		1084A	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-58	5	
and main)		10205S1	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-58	5	18
		10209S1	Globe	Solenoid	Status	Outside	C	C	C	FC	Yes	3	6.2-58	5	18
Containment air	305a (bottom)	1596	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-59	2	
sample out		1597	Diaphragm	Air	Both	Outside	O	O	C	FC	Yes	60	6.2-59	2	
Containment air	305b (top)	1598	Diaphragm	Air	Both	Outside	O	O	C	FC	Yes	60	6.2-60	3A	
sample inlet		1599	Diaphragm	Air	Both	Outside	O	O	C	FC	Yes	60	6.2-60	3A	
Containment air	305C	1554	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-61	5	
sample		1556	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-61	5	
postaccident		1557	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-61	5	
		1559	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-61	5	
		1560	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-61	5	
		1562	Diaphragm	Manual	No	Outside	LC	LC	LC	NA	NA	NA	6.2-61	5	
Fire service	307	9227	Gate	Air	Both	Outside	C	O	C	FC	Yes	60	6.2-62	5	
water		9229	Check	NA	NA	Inside	C	C	C	NA	NA	NA	6.2-62	5	
Service water from A fan cooler	308	4629	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	16
Mini-purge supply	309	7445	Butterfly	Air	Both	Outside	O/C	C	C	FC	Yes	3	6.2-64	5	
		7478	Butterfly	Air	Both	Inside	O/C	C	C	FC	Yes	3	6.2-64	5	
Service air to	310a (bottom)	7141	Gate	Manual	No	Outside	LC	O/C	LC	NA	NA	NA	6.2-65	3A	
containment		7226	Check	NA	NA	Inside	C	O/C	C	NA	NA	NA	6.2-65	3A	
Instrument air to	310b (top)	5392	Globe	Air	Both	Outside	O	O	C	FC	Yes	60	6.2-66	3A	
containment		5393	Check	NA	NA	Inside	O	O	C	NA	NA	NA	6.2-66	3A	
Service water from B fan cooler	311	4630	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	16
Service water to D fan cooler	312	4642	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	17
Leakage test	313	NA	Blind flange	NA	NA	Inside	C	C	C	NA	NA	NA	6.2-67	5	
depressurization		7444	Butterfly	Motor	Status	Outside	C	C	C	AI	Yes	NA	6.2-67	5	19
Service water from C fan cooler	315	4643	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	16
Service water to B fan cooler	316	4628	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	17

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Table 6.2-13

CONTAINMENT PIPING PENETRATIONS
AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At[e] Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Leakage test supply	317	NA	Blind flange	NA	NA	Inside	C	O	C	NA	NA	NA	6.2-68	5	
		7443	Butterfly	Motor	Status	Outside	C	O	C	AI	Yes	NA	6.2-68	5	19
Deadweight tester	318	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20
Service water to A fan cooler	319	4627	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	17
Service water to C fan cooler	320	4641	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	17
A steam generator blowdown	321	5701	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-69	4	
		5738	Globe	Air	Status	Outside	O	O/C	C	FC	Yes	60	6.2-69	4	
B steam generator blowdown	322	5702	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-70	4	
		5737	Globe	Air	Status	Outside	O	O/C	C	FC	Yes	60	6.2-70	4	
Service water from D fan cooler	323	4644	Butterfly	Manual	No	Outside	LO	O/C	LO	NA	NA	NA	6.2-63	4	16
Demineralized water to containment	324	8418	Globe	Air	Both	Outside	C	O/C	C	FC	Yes	60	6.2-71	5	
		8419	Check	NA	NA	Inside	C	O/C	C	NA	NA	NA	6.2-71	5	6
Containment pressure transmitters PT944, PT949, and PT950	332a	PT944	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-72	2	13
		PT949	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-72	2	13
		PT950	NA	NA	NA	Outside	NA	NA	NA	NA	NA	NA	6.2-72	2	13
		1819E	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-72	2	
		1819F	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-72	2	
		1819G	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-72	2	
Hydrogen monitor instrumentation lines	332c	921	Gate	Solenoid	Both	Outside	C	C	C	FC	Yes	3	6.2-73	5	21
		922	Gate	Solenoid	Both	Outside	C	C	C	FC	Yes	3	6.2-73	5	21
		923	Gate	Solenoid	Both	Outside	C	C	C	FC	Yes	3	6.2-73	5	21
		924	Gate	Solenoid	Both	Outside	C	C	C	FC	Yes	3	6.2-73	5	21
Main steam from A steam generator	401	3505A	Gate	Motor	R/G	Outside	C	C	O	AI	No	NA	6.2-74	4	11
		3507	Gate	Manual	No	Outside	O	C	O	NA	NA	NA	6.2-74	4	11
		3517	Swing check	Air	R/G	Outside	O	C	C	AI	No	NA	6.2-74	4	11
		3519	Check	NA	NA	Outside	O	C	C	NA	NA	NA	6.2-74	4	11
		3521	Gate	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-74	4	11
Main steam from B steam generator	402	3504A	Gate	Motor	R/G	Outside	C	C	O	AI	No	NA	6.2-74	4	11
		3506	Gate	Manual	No	Outside	O	C	O	NA	NA	NA	6.2-74	4	11
		3516	Swing check	Air	R/G	Outside	O	C	C	AI	No	NA	6.2-74	4	11
		3518	Check	NA	NA	Outside	O	C	C	NA	NA	NA	6.2-74	4	11
		3520	Gate	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-74	4	11

Table 6.2-13

CONTAINMENT PIPING PENETRATIONS
AND ISOLATION VALVING (Continued)

System	Penetration No.	Valve No.	Valve Type	Valve Operator Type	Position Indication In Control Room	Position Relative to Containment	Position At: Normal Operation	Cold Shutdown	Immediate Postaccident[a]	Power Failure	Trip on CIS	Maximum Isolation Time (sec)[b]	UFSAR Figure	Class[c]	Notes (See end of table)[d]
Feedwater line to A steam generator	403	3993	Check	NA	NA	Outside	O	C	C	NA	NA	NA	6.2-75	4	11
		3995	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-75	4	11
		4000C	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-75	4	11
		4003	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-75	4	11
		4005	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-75	4	11
		4011	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-75	4	11
Feedwater line to B steam generator	404	3992	Check	NA	NA	Outside	O	C	C	NA	NA	NA	6.2-75	4	11
		3994	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-75	4	11
		4000D	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-75	4	11
		4004	Check	NA	NA	Outside	C	C	O	NA	NA	NA	6.2-75	4	11
		4006	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-75	4	11
		4012	Globe	Manual	No	Outside	O	O	O	NA	NA	NA	6.2-75	4	11
Personnel hatch	1000	NA	NA	NA	NA	Inside Outside	C	O/C	C	NA	NA	NA	3.8-31	NA	2
Equipment hatch	2000	NA	NA	NA	NA	Inside Outside	C	O/C	C	NA	NA	NA	3.8-30	NA	2

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[a] Refers to position immediately following receipt of containment isolation signal and containment ventilation isolation signal.

[b] The maximum isolation time does not include diesel start time nor instrument delay time.

[c] Refers to classes defined in Section 6.2.4.4.

[d] Notes only used to supplement Section 6.2.4.4.

2. Locked closed containment isolation valves are considered OPERABLE if they are under administrative control and only opened for short periods of time for specific purposes ← MD7 2/26/91

Table 6.2-13

CONTAINMENT PIPING PENETRATIONS
AND ISOLATION VALVING (Continued)

Notes:

(1) Penetration number 2 was added as a result of EWR 4998 to facilitate steam generator maintenance activities during reduced inventory operation. This penetration is closed by a double-gasketed on both ends; however, only one of the two flanges is necessary for containment integrity purposes.

(2) This penetration is provided with redundant seals and is closed during normal operation.

(3) The end of the fuel transfer tube inside containment is closed by a double-gasketed blind flange, to prevent leakage of spent fuel pool water into the containment during plant operation. This flange also serves as protection against leakage from the containment following a loss-of-coolant accident.

(4) This is a closed system outside containment. Verification of this closed system as a containment isolation boundary is accomplished via inservice and/or shutdown leakage checks. This applies to the following systems: safety injection, containment spray, charging, residual heat removal, and component cooling water.

(5) This penetration was only utilized during initial plant construction and is maintained inactive.

(6) A second isolation barrier is provided by the volume control tank and connecting piping per letter from D. D. DiIanni, NRC, to R. W. Kober, RG&E, dated January 30, 1987. This barrier is not required to be tested → under 10CFR50, Appendix J.

(7) 10 CFR 50, Appendix J containment leakage testing is not required per → letter from D.M. Crutchfield, NRC, to J.E. Maier, RG&E, dated April 12, 1982. Also see L. D. White, Jr., letter to D. L. Ziemann, NRC, dated September 21, 1978.

(8) MOVs 1813A, 1813B, 720, and 701 are maintained closed at power with their breakers locked off.

(9) This valve receives a containment isolation signal; however, credit is not taken for this function since the valve is inside the missile barrier or outside the necessary class break boundary. Therefore, this valve is not subject to 10 CFR 50, Appendix J leakage testing, nor does it require a maximum isolation time. The containment isolation signal only enhances isolation capability.

(10) Containment isolation signals were added to AOVs 200A, 200B, and 202 since AOV 427 fails open on loss of power. The isolation signal for these three valves is relayed from AOV 427.

(11) The main steam, main feedwater, and standby auxiliary feedwater isolation valves are not considered containment isolation valves. The containment boundary is the steam generator secondary side and tubes. → and do not require 10CFR50 Appendix J testing.

(12) Manual valves 547 and 1793 are locked closed and leak tested to provide equivalent protection for GDC 56 and 57 (see UFSAR Section 6.2.4.4.1, Class 3A).

(13) The pressure transmitter assembly, by its design, provides a containment pressure boundary. The integrity of this boundary is verified by annual leakage tests.

(14) Operations is instructed to manually close AOV 745 following a containment isolation signal until an automatic signal is installed through the necessary modification.

(15) Sump lines are in operation and filled with fluid following an accident; therefore, 10 CFR 50, Appendix J leakage testing, is not required for this penetration. See L. D. White, Jr., letter to D. L. Ziemann, NRC, dated September 21, 1978 → and letter from D.M. Crutchfield, NRC, to J.E. Maier, RG&E, dated April 12, 1982.

(16) This manual valve is subject to an annual hydrostatic leakage test and is not subject to 10 CFR 50, Appendix J leakage testing.

(17) The service water system operates at a higher pressure than the containment accident pressure and is missile protected inside containment. Therefore, this manual valve is used for flow control only and is not subject to 10 CFR 50, Appendix J leakage testing. See letter from J. E. Maier, RG&E, to D. M. Crutchfield, NRC, dated August 30, 1982.

(18) This solenoid valve is maintained inactive in the closed position by removal of its dc control power.

(19) The flanges and associated double seals provide containment isolation and ensure that containment integrity is maintained for all modes of operation above cold shutdown. When the flanges are removed, cold shutdown containment integrity is provided by the valves. These valves do not require 10 CFR 50, Appendix J leakage testing, nor a maximum isolation time.

(20) This penetration is decommissioned and welded shut.

(21) Acceptable isolation capability is provided for instrument lines by two isolation boundaries outside containment. One of the boundaries outside containment is a Seismic Category I closed system which is subjected to Type C leakage testing under 10 CFR 50, Appendix J.

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Attachment B

UFSAR Table 6.2-13 Changes

Table 1 - Global Notes		
No.	Change	Effect
1.	The blanks or "-" within columns were replaced with "NA".	Typographical clarification only. No technical change.
2.	(1) The blanks or "-" for the Position At columns were replaced with the representative position; (2) The "No" listed under Position Indication in Control Room was replaced with "NA".	(1) (2) The valve position and "NA" are more representative of the penetration configuration. In addition, consistency is maintained within the table. No technical change.
3.	The "AI" or blank for the Power Failure column for manual valves was replaced with "NA".	The "NA" is more representative of the penetration configuration since a manual valve does not receive any motive power. No technical change.
4.	The blank or "No" for Trip On CIS column was replaced with "NA".	The "NA" is more representative of the penetration configuration. In addition, consistency is maintained within the table. No technical change.
5.	The blank or "No" for Maximum Isolation Time was replaced with "NA".	The "NA" is more representative of the penetration configuration. In addition, consistency is maintained within the table. No technical change.

Table 2 - Format and Structure Changes		
No.	Change	Effect
1.	Added "Cold" to Position At Shutdown column heading.	Minor clarification for consistency with Technical Specifications. No technical change.
2.	(1) Added "Immediate" to Position At Postaccident column heading; (2) Added Footnote "a".	(1) (2) Clarification of column since valve position can be potentially changed during post accident recovery operations. Column now provides clear definition of penetration configuration following receipt of a CIS.
3.	(1) Removed Fluid Type column from table; (2) Deleted definitions for "W" and "G" from table Legend.	(1) (2) Column did not provide any information relevant to table. Fluid type can be inferred from System column.
4.	Removed Temperature column and associated Footnote "c" from table.	Column did not provide any information relevant to table.
5.	Added definitions for "AOV", "CV", "MOV", "MV", and "SOV" to table Legend.	Correction of typographical omission. No technical change.
6.	(1) Modified Position Indication in Control Room column to reflect type of indication instead of "Yes" and "No"; (2) Added definition for "R/G" and "Status" to table Legend. "Both" indicates that a red/green light and status light exists.	(1) (2) The type of control room indication is more representative of the system configuration. This is a clarification only. No technical change.
7.	Moved Table Heading Footnotes "a", "b", "c", and "d" to first page of table.	Minor format change only. No technical change.

Table 2 - Format and Structure Changes		
No.	Change	Effect
8.	(1) Renamed Footnote "a" to "b"; (2) Added "nor instrument delay time" to end of note.	(1) (2) Minor clarification only. Note is now consistent with Standard Review Plan Section 6.2.4. No technical change.
9.	Renamed Footnote "b" to "c".	No technical change.
10.	Deleted "Line" from System column heading.	No technical change.
11.	Added Footnote "d" to Notes column.	Minor clarification only. The Notes column is now only used to supplement the UFSAR text which provides more information. No technical change.
12.	Added Footnote "e" to Notes column and Position At column heading.	Minor clarification only. The addition of this note provides consistency with 10CFR50 Appendix J criteria.

Table 3 - Penetration Changes		
No.	Change	Effect
1.	Penetration 2 - Added penetration and necessary information to the table.	This spare penetration was modified to provide access for steam generator inspection and maintenance cabling during refueling outages to enhance containment closure during midloop operations. No new valves were added.
2.	Penetration 29 - (1) Global Note 1; (2) Added Note 2.	(1) (2) No technical change.
3.	Penetration 100 - (1) Global Notes 1, 2, and 4; (2) Added Note 4; (3) Changed Position At Immediate Postaccident from "O/C" to "C".	(1) (2) No technical change. (3) Update for better representation of system configuration since the Charging System is isolated upon receipt of a SI signal.
4.	Penetration 101 - (1) Global Notes 1, 2, 4, and 5; (2) Added Note 4; (3) Added "3B" under Class for valve 889B; (4) Reordered penetration valves.	(1) (2) No technical change. (3) Correction of typographical omission. No technical change. (4) Valves now in numeric order. No technical change.
5.	Penetration 102 - (1) Global Notes 1, 2, 4, and 5; (2) Added Note 4.	(1) (2) No technical change.
6.	Penetration 103 - Deleted valve 5129 (entire line in table) and replaced with Blind Flange.	Replaced Note of "No longer in use" to reflect accurate configuration status of Blind Flange. The use of the Blind Flange is consistent with the previously listed locked-closed manual valve.

Table 3 - Penetration Changes		
No.	Change	Effect
7.	Penetration 105 - (1) Global Notes 1, 2, and 4; (2) Added Note 4.	(1) (2) No technical change.
8.	Penetration 106 - (1) Global Notes 1, 2, and 4; (2) Added Note 4; (3) Changed "supply" to "Inlet" under System.	(1) (2) No technical change. (3) Minor clarification only. No technical change.
9.	Penetration 107 - (1) Changed Position Indication In Control Room from "Yes" to "Status" for both valves; (2) Changed Position At Cold Shutdown from "O" to "O/C" for both valves.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration.
10.	Penetration 108 - (1) Added "and Excess Letdown to VCT" under System; (2) Changed Position Indication In Control Room from "Yes" to "Both"; (3) Changed Position At Cold Shutdown from "O" to "O/C"; (4) Added Note 4; (5) Added Note 6.	(1) Consistency with Technical Specification Table 3.6-1. (2) Minor clarification only. No technical change. (3) Update for better representation of system configuration since this line may or may not be used during cold shutdown conditions. (4) (5) No technical change.
11.	Penetration 109 - (1) Global Notes 1, 2, and 4; (2) Added Note 4.	(1) (2) No technical change.
12.	Penetration 110a - (1) Global Notes 1, 2, and 4; (2) Added Note. 4.	(1) (2) No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
13.	Penetration 110b - (1) Global Notes 3 and 4; (2) Added Note 4; (3) Changed Position At Cold Shutdown and Position At Immediate Postaccident from "C" to "LC".	(1) (2) No technical change. (3) Consistency with Ginna Administrative Control.
14.	Penetration 111 - (1) Added Note 7 to both valves; (2) Added Note 8 to valve 720; (3) Added Note 4 to both valves; (4) Changed Position Indication In Control Room from "Yes" to "R/G" for MOV 720; (5) Added valve 959 and necessary information.	(1) Consistency with Technical Specifications. (2) (3) No technical change. (4) Minor clarification only. No technical change. (5) Valve receives containment isolation signal and was previously missing from the table.
15.	Penetration 112 - (1) Deleted valves 204A and 821 (entire line in table) and replaced with valves 200A, 200B, and 202; (2) Added valve 427 and necessary information; (3) Changed Position Indication In Control Room from "Yes" to "Both" for valve 371; (4) Changed Position At Immediate Postaccident from "O" to "C" for valve 371.	(1) (2) Present configuration status; the three new valves enable explicit compliance with GDC 55 vs. the use of redundant outboard isolation valves. The 200A, 200B, 202, and 427 valves have been successfully tested. (3) Minor clarification only. No technical change. (4) Update for better representation of system configuration since letdown is isolated upon receipt of a SI signal.
16.	Penetration 113 - (1) Global Notes 1, 2, and 4; (2) Added Note 4 to both valves; (3) Reordered penetration valves.	(1) (2) No technical change. (3) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
17.	Penetration 119 - (1) Global Notes 1, 2, 4, and 5; (2) Changed Position Indication In Control Room from "No" to "R/G" for valve 9704A; (3) Reordered penetration valves.	(1) No technical change. (2) Minor clarification only. No technical change. (3) Valves now in numeric order. No technical change.
18.	Penetration 120a - (1) Global Notes 1, 2, and 4 for valve 8623; (2) Changed valve 846 from "Gate" to "Globe"; (3) Changed Position Indication In Control Room from "Yes" to "Both" for valve 846; (4) Changed Position At Normal Operation from "O/C" to "C" for valve 846; (5) Reordered penetration valves.	(1) No technical change. (2) Correction of typographical error. No technical change. (3) Minor clarification only. No technical change. (4) Update for better representation of system configuration. This valve remains closed unless the accumulator nitrogen blanket pressure decreases. (5) Valves now in numeric order. No technical change.
19.	Penetration 120b - (1) Changed Position Indication In Control Room from "Yes" to "Status" for valve 539; (2) Changed Position At Normal Operation from "O/C" to "C" for valve 539; (3) Global Notes 3 & 4 for valve 546.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration. (3) No technical change.
20.	Penetration 121a - (1) Global Notes 1, 2, and 4 for valve 528; (2) Changed valve 547 from "Diaphragm" to "Globe"; (3) Changed Position At Immediate Postaccident from "O" to "LC" for valve 547; (4) Changed Position At Normal Operation from "O" to "C" for valve 528; (5) Global Notes 3 and 4 for valve 547; (6) Deleted reference to "old" Note 9; (7) Added Note 12 to valve 547.	(1) No technical change. (2) Correction of typographical error. No technical change. (3) Consistency with Ginna Administrative Control. (4) Update for better representation of system configuration. No technical change. (5) No technical change. (6) Correction of typographical error. No technical change. (7) No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
21.	Penetration 121b - (1) Changed Position Indication In Control Room from "Yes" to "Both" for valve 508; (2) Changed Position At Normal Operation from "O/C" to "C" for valve 508; (3) Changed Position At Normal Operation from "C" to "O/C" for valve 529; (4) Global Notes 1, 2, and 4 for valve 529; (5) Reordered penetration valves.	(1) Minor clarification only. No technical change. (2) (3) Update for better representation of system configuration. (4) No technical change. (5) Valves now in numeric order. No technical change.
22.	Penetration 121c - (1) Global Note 1 for PT945; (2) Global Notes 3 and 4 for valve 1819A; (3) Added "Gate" under Valve Type for valve 1819A.	(1) (2) No technical change. (3) Correction of typographical omission. No technical change.
23.	Penetration 121d - (1) Global Note 1 for PT946; (2) Global Notes 3 and 4 for valve 1819B.	(1) (2) No technical change.
24.	Penetration 123 (bottom) - (1) Added "to" before "Gas Analyzer Line" under System; (2) Global Notes 3 and 4 for 1655; (3) Changed valve 1789 from "Globe" to "Diaphragm"; (4) Changed Position Indication In Control Room from "Yes" to "Status" for valve 1789; (5) Changed Position At Normal Operation from "O/C" to "O" for valve 1789; (6) Added valve 1600A; (7) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) No technical change. (3) Correction of typographical error. No technical change. (4) Minor clarification only. No technical change. (5) Update for better representation of system configuration since this line remains open. (6) Valve receives containment isolation signal and was previously missing from the table. (7) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
25.	Penetration 123 (top) - (1) Global Notes 1, 2, 4, and 5; (2) Changed Position Indication In Control Room from "No" to "R/G" for valve 9704B.	(1) No technical change. (2) Minor clarification only. No technical change.
26.	Penetration 124a - (1) Global Notes 1, 2, and 4 for valve 743; (2) Changed Position At Immediate Postaccident from "O" to "C" for valve 743; (3) Changed Position Indication In Control Room from "Yes" to "R/G" for valve 745; (4) Changed Trip on CIS from "Yes" to "No" for valve 745; (5) Changed Maximum Isolation Time from "60" to "NA" for valve 745; (6) Changed Position At Cold Shutdown from "O" to "C" for valve 745.	(1) No technical change. (2) Update for better representation of system configuration. Operations is instructed to manually isolate this line following receipt of a containment isolation signal. (3) Minor clarification only. No technical change. (4) (5) Correction of typographical error. See letter from R. Mecredy, RG&E, to A. Johnson, NRC, dated July 9, 1990. (6) Update for better representation of system configuration since excess letdown is not operational during cold shutdown conditions.
27.	Penetration 124b - (1) Added "to" before "C Fan" under System; (2) Added "Diaphragm" under Valve Type for all four valves; (3) Changed Position At Cold Shutdown from "C" to "LC" for all four valves; (4) Changed Position At Immediate Postaccident from "O/C" to "LC" for all four valves; (5) Global Notes 3 and 4.	(1) Minor clarification. No technical change. (2) Correction of typographical omission. No technical change. (3) (4) Consistency with Ginna Administrative Control. (5) No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
28.	Penetration 125 - (1) Changed Position Indication In Control Room from "Yes" to "R/G"; (2) Changed Position At Cold Shutdown from "O" to "C"; (3) Added Note 4.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration since RCPs are not operating during cold shutdown conditions. (3) No technical change.
29.	Penetration 126 - (1) Changed Position Indication In Control Room from "Yes" to "R/G"; (2) Changed Position At Cold Shutdown from "O" to "C"; (3) Added Note 4.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration since RCPs are not operating during cold shutdown conditions. (3) No technical change.
30.	Penetration 127 - (1) Changed Position Indication In Control Room from "Yes" to "R/B" for valve 749A; (2) Changed Position At Cold Shutdown from "O" to "C" for valve 749A; (3) Global Notes 1, 2, and 4 for valve 750A; (4) Changed Maximum Isolation Time from "60" to "NA" for valve 749A.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration since RCPs are not operating during cold shutdown conditions. (3) No technical change. (4) Correction of typographical error. No technical change.
31.	Penetration 128 - (1) Changed Position Indication In Control Room from "Yes" to "R/B" for valve 749B; (2) Changed Position At Cold Shutdown from "O" to "C" for valve 749B; (3) Global Notes 1, 2, and 4 for valve 750B; (4) Changed Maximum Isolation Time from "60" to "NA" for valve 749B.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration since RCPs are not operating during cold shutdown conditions. (3) No technical change. (4) Correction of typographical error. No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
32.	Penetration 129 - (1) Changed Maximum Isolation Time from "NA" to "60" for valve 1787; (2) Changed Position Indication in Control Room from "Yes" to "Status" for valves 1786 and 1787; (3) Changed Position at Cold Shutdown from "O" to "C" for valves 1786 and 1787; (4) Global Notes 1, 2, and 4 for valve 1713; (5) Global Notes 2, 3, and 4 for valve 1793; (6) Deleted "MOV 1793 used for long-term isolation" under Notes and replaced with Note 12; (7) Added "NA" under Trip on CIS for valve 1793; (8) Added "Outside" under Position Relative To Containment for valve 1793; (9) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Minor clarification only. No technical change. (3) Update for better representation of system configuration. (4) (5) No technical change. (6) Minor clarification. No technical change. (7) Correction of typographical omission. No technical change. (8) Correction of typographical omission. No technical change. (9) Valves now in numeric order. No technical change.
33.	Penetration 130 - (1) Changed Position Indication In Control Room from "Yes" to "Both"; (2) Corrected associated valve number to 814.	(1) Minor clarification only. No technical change. (2) Correction of typographical error. No technical change.
34.	Penetration 131 - (1) Changed Position Indication In Control Room from "Yes" to "Both"; (2) Corrected associated valve number to 813.	(1) Minor clarification only. No technical change. (2) Correction of typographical error. No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
35.	Penetration 132 - (1) Changed Maximum Isolation Time from "2" to "3" for both valves; (2) Changed Position At Normal Operation from "O/C" to "C" for valve 7971; (3) Changed Position At Cold Shutdown from "C" to "O/C" for both valves; (4) Changed Position Indication In Control Room from "Yes" to "Both" for both valves.	(1) Consistency with Technical Specifications. Valve design allows closure as rapid as 2 (two) seconds. Minimum closure time required by Technical Specifications is 5 (five) seconds with instrument delay. (2) (3) Update for better representation of system configuration. Mini-Purge system only designed for use during shutdown conditions. (4) Minor clarification only. No technical change.
36.	Penetration 140 - (1) Added Note 6; (2) Added Note 7; (3) Changed Position Indication in Control Room from "Yes" to "R/G".	(1) Consistency with Technical Specification Table 3.6-1 Note 20. (2) No technical change. (3) Minor clarification only. No technical change.
37.	Penetration 141 - (1) Deleted valve 851A (entire line in table); (2) Added valve 1813A and necessary information; (3) Changed Position Indication In Control Room from "Yes" to "R/G" for valve 850A; (4) Added Note 8 to valve 1813A.	(1) Valve 851A does not meet the selection criteria of 10CFR50 Appendix J, Section IIH, items 1 through 4. Therefore, valve was deleted from table. (2) Valve 1813A was previously missing from table. (3) Minor clarification only. No technical change. (4) No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
38.	Penetration 142 - (1) Deleted valve 851B (entire line in table); (2) Added valve 1813B and necessary information; (3) Changed Position Indication In Control Room from "Yes" to "R/G" for valve 850B; (4) Added Note 8 to valve 1813B.	(1) Valve 851B does not meet the selection criteria of 10CFR50 Appendix J, Section IIH, items 1 through 4. Therefore, valve was deleted from table. (2) Valve 1813B was previously missing from table. (3) Minor clarification only. No technical change. (4) No technical change.
39.	Penetration 143 - (1) Changed Position Indication In Control Room from "Yes" to "Status" for all three valves; (2) Changed Position At Normal Operation from "O/C" to "O" for valves 1003A and 1003B; (3) Reordered penetration valves.	(1) Minor clarification only. No technical change. (2) Update for better representation of system configuration. (3) Valves now in numeric order. No technical change.
40.	Penetration 201top - Global Notes 3 and 4.	No technical change.
41.	Penetration 201bottom - Global Notes 3 and 4.	No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
42.	Penetration 202 - (1) Changed valves 1076B and 1084B from "Globe" to "Diaphragm"; (2) Changed Position At Normal Operation, Cold Shutdown, Immediate Postaccident from "C" to "LC" for valves 1076B and 1084B; (3) Global Notes 3 and 4 for valves 1076B and 1084B; (4) Added "No" under Position Indication in Control Room for valves 1076B and 1084B; (5) Changed Valve No. for IV-3B and IV-5B to 10211S1 and 10213S1, respectively; (6) Added "Status" under Position Indication in Control Room for valves 10211S1 & 10213S1; (7) Changed Position At Power Failure from "-" to "FC" for valves 10211S1 and 10213S1; (8) Changed Trip on CIS from "No" to "Yes" for valves 10211S1 and 10213S1; (9) Changed Maximum Isolation Time from "NA" to "3" for 10211S1 and 10213S1; (10) Reordered penetration valves.	(1) Correction of typographical error. No technical change. (2) Consistency with Ginna Administrative Control. (3) No technical change. (4) Correction of typographical omission. No technical change. (5) Update to new valve number only. No technical change. (6) Correction of typographical omission. No technical change. (7) (8) Update for better representation of system configuration. Valves receive containment isolation signal. (9) Correction of typographical error. No technical change. (10) Valves now in numeric order. No technical change.
43.	Penetration 203a - (1) Included separate lines in table for valves 1819C and 1819D; (2) Added "Outside" to Position Relative to Containment for PT947 and PT948; (3) Added "Globe" under Valve Type for valves 1819C and 1819D; (4) Global Note 1 for PT947 and PT948; (5) Global Notes 3 and 4 for valves 1819C and 1819D.	(1) Minor clarification - there are two valves. No technical change. (2) (3) Correction of typographical omission. No technical change. (4) (5) No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
44.	Penetration 203b - (1) Global Notes 3 and 4; (2) Added "Diaphragm" under Valve Type for all four valves; (3) Changed Position At Cold Shutdown and Position At Immediate Postaccident from "C" to "LC" for all four valves.	(1) No technical change. (2) Correction of typographical omission. No technical change. (3) Consistency with Ginna Administrative Control.
45.	Penetration 204 - (1) Added Note 2 to Blind Flange; (2) Global Note 1 for Blind Flange; (3) Changed Position Indication in Control Room from "Yes" to "Both" for valve 5869; (4) Changed Position At Normal Operation from "O/C" to "C" for valve 5869; (5) Changed Position At Cold Shutdown from "O" to "O/C" for 5869; (6) Changed Maximum Isolation Time from "5" to "NA" for valve 5869; (7) Added Note 19.	(1) (2) No technical change. (3) Minor clarification only. No technical change. (4) (5) Update for better representation of system configuration. Penetration only used during cold shutdown conditions. Mini-purge system now used in place of purge system. (6) The Blind Flange acts as the isolation boundary. Therefore, no isolation time is required for the valve. (7) No technical change.
46.	Penetration 205 - (1) Changed Maximum Isolation Time from "NA" to "60" for valve 966C; (2) Added valve 955 and necessary information; (3) Changed Position Indication in Control Room from "Yes" to "Status" for valve 966C; (4) Changed Position At Normal Operation and Position At Cold Shutdown from "O/C" to "C" for valve 966C; (5) Global Notes 3 and 4 for valve 956D; (6) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Valve receives containment isolation signal and was previously missing from the table. (3) Minor clarification only. No technical change. (4) Update for better representation of system configuration. Sampling system normally isolated. (5) No technical change. (6) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
47.	Penetration 206a - (1) Changed Maximum Isolation Time from "NA" to "60" for valve 966B; (2) Added valve 953 and necessary information; (3) Changed Position Indication in Control Room from "Yes" to "Status" for valve 966B; (4) Changed Position At Normal Operation and Position At Cold Shutdown from "O/C" to "C" for valve 966B; (5) Global Notes 3 and 4 for valve 956E; (6) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Valve receives containment isolation signal and was previously missing from the table. (3) Minor clarification only. No technical change. (4) Update for better representation of system configuration. Sampling system normally isolated. (5) No technical change. (6) Valves now in numeric order. No technical change.
48.	Penetration 206b - (1) Changed Maximum Isolation Time from "NA" to "60" for valve 5735; (2) Changed Position Indication in Control Room from "Yes" to "Status" for valve 5735; (3) Changed Position At Normal Operation from "O/C" to "O" for valve 5735; (4) Changed Position At Cold Shutdown from "O/C" to "C" for valve 5735; (5) Global Notes 3, 4, and 5 for valve 5733; (6) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Minor clarification only. No technical change. (3) (4) Update for better representation of system configuration. (5) No technical change. (6) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
49.	Penetration 207a - (1) Changed Maximum Isolation Time from "NA" to "60" for valve 966A; (2) Added valve 951 and necessary information; (3) Changed Position Indication in Control Room from "Yes" to "Status" for valve 966A; (4) Changed Position At Normal Operation and Position At Cold Shutdown from "O/C" to "C" for valve 966A; (5) Global Notes 3 and 4 for valve 956F; (6) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Valve receives containment isolation signal and was previously missing from the table. (3) Minor clarification only. No technical change. (4) Update for better representation of system configuration. Sampling system normally isolated. (5) No technical change. (6) Valves now in numeric order. No technical change.
50.	Penetration 207b - (1) Changed Maximum Isolation Time from "NA" to "60" for valve 5736; (2) Changed Position Indication in Control Room from "Yes" to "Status" for valve 5736; (3) Changed Position At Normal Operation from "O/C" to "O" for valve 5736; (4) Changed Position At Cold Shutdown from "O/C" to "C" for valve 5736; (5) Global Notes 3 and 4 for 5734; (6) Reordered penetration valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Minor clarification only. No technical change. (3) (4) Update for better representation of system configuration. (5) No technical change. (6) Valves now in numeric order. No technical change.
51.	Penetration 209top - (1) Global Notes 3 and 4; (2) Reordered penetration valves.	(1) No technical change. (2) Valve order now consistent with other penetrations. No technical change.
52.	Penetration 209bottom - (1) Global Notes 3 and 4; (2) Reordered penetration valves.	(1) No technical change. (2) Valve order now consistent with other penetrations. No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
53.	Penetration 210 - (1) Added "A & B" before "Recombiners" under System; (2) Added Position Indication in Control Room to "Status" for all solenoid valves; (3) Added "Yes" under Trip on CIS for all solenoid valves; (4) Added valves 10214S1 and 10215S and necessary information; (5) Changed Position At Power Failure from "-" to "FC" for all solenoid valves; (6) Changed Position At Normal Operation, Cold Shutdown, Immediate Postaccident from "C" to "LC" for 1080A; (7) Global Notes 3 and 4 for valve 1080A; (8) Changed Valve No. for IV-2A and IV-2B to 10214S and 10215S1, respectively; (9) Added Note 18 to solenoid valves; (10) Changed Maximum Isolation Time from "NA" to "3" for all solenoid valves.	(1) Consistency with Technical Specification Table 3.6-1. (2) Minor clarification only. No technical change. (3) Correction of typographical omission. No technical change. (4) Valve receive containment isolation signal and was previously missing from the table. (5) Update for better representation of system configuration. Valves receive containment isolation signal. (6) Consistency with Ginna Administrative Control. (7) No technical change. (8) Update to new valve number only. No technical change. (9) No technical change. (10) Correction of typographical error. No technical change.
54.	Penetration 300 - (1) Added Note 19 for both valve and flange; (2) Added Note 2 to Blind Flange; (3) Global Note 1 for Blind Flange; (4) Changed Position At Normal Operation from "O/C" to "C" for valve 5879; (5) Changed Position At Cold Shutdown from "O" to "O/C" for valve 5879;	(1) No technical change. (2) Consistency with Technical Specifications. No technical change. (3)(4) Update for better representation of system configuration. Penetration only used during cold shutdown conditions. Mini-purge system now used in place of purge system.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
55.	Penetration 301 - (1) Global Notes 3 and 4; (2) Changed Position At Cold Shutdown and Position At Immediate Postaccident from "O" to "LC" for both valves; (3) Added Note 5 to both valves; (4) Changed both valves from "Globe" to "Gate".	(1) No technical change. (2) Consistency with Ginna Administrative Control. (3) No technical change. (4) Correction of typographical error. No technical change.
56.	Penetration 303 - (1) Global Notes 3 and 4; (2) Changed Position At Cold Shutdown and Position At Immediate Postaccident from "O" to "LC" for both valves; (3) Added Note 5 to both valves; (4) Reordered penetration valves.	(1) No technical change. (2) Consistency with Ginna Administrative Control. (3) No technical change. (4) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
57.	Penetration 304 - (1) Changed valves 1076A and 1084A from "Solenoid" to "Diaphragm"; (2) Changed Position At Normal Operation, Cold Shutdown, and Immediate Postaccident from "C" to "LC" for valves 1076A and 1084A; (3) Added "No" under Position Indication In Control Room for valves 1076A and 1084A; (4) Global Notes 3 and 4 for valves 1076A and 1084A; (5) Changed Valve No. for IV-3A and IV-5A to 10205S1 and 10209S1, respectively; (6) Added "Status" under Position Indication in Control Room for valves 10205S1 & 10209S1; (7) Changed Position At Power Failure from "-" to "FC" for valves 10205S1 and 10209S1; (8) Changed Trip on CIS from "No" to "Yes" for valve 10205S1 and 10209S1; (9) Added Note 17 for valves 10205S1 and 10209S1; (10) Changed Maximum Isolation Time from "NA" to "3" for valves 10205S1 and 10209S1; (11) Reordered penetration valves.	(1) Correction of typographical error. No technical change. (2) Consistency with Ginna Administrative Control. (3) Correction of typographical omission. No technical change. (4) No technical change. (5) Update to new valve number only. No technical change. (6) Minor clarification only. No technical change. (7) (8) Update for better representation of system configuration. Valves receive containment isolation signal. (9) No technical change. (10) Correction of typographical error. No technical change. (11) Valves now in numeric order. No technical change.
58.	Penetration 305a (bottom) - (1) Changed System to "Containment Air Sample Out"; (2) Changed Maximum Isolation Time from "NA" to "60" for valve 1597; (3) Changed valve 1596 from "Diaphragm" to "Globe"; (4) Global Notes 3 and 4 for valve 1597; (5) Changed Position Indication in Control Room from "Yes" to "Both" for valve 1597; (6) Reordered penetration valves.	(1) Consistency with UFSAR Drawing Title. No technical change. (2) Consistency with Technical Specification Table 3.6-1. (3) Correction of typographical error. No technical change. (4) No technical change. (5) Minor clarification only. No technical change. (6) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
59.	Penetration 305b (top) - (1) Changed System to "Containment Air Sample Inlet"; (2) Changed Maximum Isolation Time from "NA" to "60" for valve 1599; (3) Changed Position Indication in Control Room from "Yes" to "Both" for valves 1598 and 1599; (4) Reordered penetration valves.	(1) Consistency with UFSAR Drawing Title. (2) Consistency with Technical Specification Table 3.6-1. (3) Minor clarification only. No technical change. (4) Valves now in numeric order. No technical change.
60.	Penetration 305c - (1) Changed System to "Containment Air Sample Postaccident"; (2) Added "Diaphragm" under Valve Type for all six valves; (3) Changed Position At Cold Shutdown and Position At Immediate Postaccident from "C" to "LC" for all six valves; (4) Global Notes 3 and 4; (5) Reordered penetration valves.	(1) Consistency with UFSAR Drawing Title. (2) Correction of typographical omission. No technical change. (3) Consistency with Ginna Administrative Control. (4) No technical change. (5) Valves now in numeric order. No technical change.
61.	Penetration 307 - (1) Switched Valve No. for valves 9227 and 9229; (2) Added "Gate" under Valve Operator Type for valve 9227; (3) Global Notes 1, 2, and 4 for valve 9229; (4) Changed Position Indication in Control Room from "Yes" to "Both" for valve 9227.	(1) Correction of typographical error. No technical change. (2) Correction of typographical omission. No technical change. (3) No technical change. (4) Minor clarification only. No technical change.
62.	Penetration 308 - (1) Changed Valve No. to 4629; (2) Global Notes 3 and 4; (3) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (4) Changed Position At Cold Shutdown from "O" to "O/C" (5) Added Note 17.	(1) Correction of typographical error. No technical change. (2) No technical change. (3) Consistency with Ginna Administrative Control. (4) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown. (5) No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
63.	Penetration 309 - (1) Changed Maximum Isolation Time from "2" to "3" for both valves; (2) Changed Position Indication in Control Room from "Yes" to "Both" for both valves; (3) Reordered penetration valves.	(1) Consistency with Technical Specifications. Valve design allows closure as rapid as 2 (two) seconds. Minimum closure time required by Technical Specifications is 5 (five) seconds. (2) Minor clarification only. No technical change. (3) Valves now in numeric order. No technical change.
64.	Penetration 310a - (1) Changed valve 7141 from "Diaphragm" to "Gate"; (2) Changed Position At Immediate Postaccident from "C" to "LC" for valve 7141; (3) Global Notes 3 and 4 for valve 7141; (4) Global Notes 1, 2, and 4 for valve 7226; (5) Reordered penetration valves.	(1) Correction of typographical error. No technical change. (2) Consistency with Ginna Administrative Control. (3) (4) No technical change. (5) Valves now in numeric order. No technical change.
65.	Penetration 310b - (1) Changed valve 5392 from "Diaphragm" to "Globe"; (2) Changed Position Indication in Control Room from "Yes" to "Both" for valve 5392; (3) Changed Position At Cold Shutdown from "C" to "O" for valve 5393; (4) Global Notes 1, 2, and 4 for 5393; (5) Added "O" under Position At Cold Shutdown for valve 5392; (6) Added "C" under Position At Immediate Postaccident for valve 5392; (7) Changed Position at Power Failure from "-" to "FC" for valve 5392; (8) Reordered penetration valves.	(1) Correction of typographical error. No technical change. (2) Minor clarification only. No technical change. (3) Update for better representation of system configuration since IA is used during cold shutdown conditions. (4) No technical change. (5) (6) (7) Update for better representation of system configuration. Valve receives containment isolation signal. (8) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
66.	Penetration 311 - (1) Changed Position At Cold Shutdown from "O" to "O/C"; (2) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (3) Global Notes 3 and 4.	(1) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions. (2) Consistency with Ginna Administrative Control. (3) No technical change.
67.	Penetration 312 - (1) Changed Position At Cold Shutdown from "O" to "O/C"; (2) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (3) Global Notes 3 and 4.	(1) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions. (2) Consistency with Ginna Administrative Control. (3) No technical change.
68.	Penetration 313 - (1) Added "Blind" before "Flange" under Valve Type; (2) Global Notes 1, 2, and 4 for Blind Flange; (3) Changed Position Indication in Control Room from "Yes" to "Status" for valve 7444; (4) Changed Trip on CIS from "No" to "Yes" for valve 7444; (5) Added Note 19.	(1) Correction of typographical omission. No technical change. (2) No technical change. (3) Minor clarification only. No technical change. (4) Correction of typographical error. No technical change. (5) No technical change.
69.	Penetration 315 - (1) Changed Position At Cold Shutdown from "O" to "O/C"; (2) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (3) Global Notes 3 and 4.	(1) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions. (2) Consistency with Ginna Administrative Control. (3) No technical change.

Table 3 - Penetration Changes		
No.	**Change**	**Effect**
70.	Penetration 316 - (1) Changed Position At Cold Shutdown from "O" to "O/C"; (2) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (3) Global Notes 3 and 4.	(1) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions. (2) Consistency with Ginna Administrative Control. (3) No technical change.
71.	Penetration 317 - (1) Added "Blind" before "Flange" under Valve Type; (2) Global Notes 1, 2, and 4 for Blind Flange; (3) Changed Position Indication in Control Room from "Yes" to "Status" for valve 7443; (4) Changed Trip on CIS from "No" to "Yes" for valve 7443; (5) Changed Position At Cold Shutdown from "C" to "O" for valve 7443; (6) Added Note 19.	(1) Correction of typographical omission. No technical change. (2) No technical change. (3) Minor clarification only. No technical change. (4) Correction of typographical error. No technical change. (5) Update for better representation of system configuration. Penetration used during cold shutdown. (6) No technical change.
72.	Penetration 318 - (1) Global Note 1; (2) Deleted "Decommissioned, welded shut" from Notes and replaced it with Note 20.	(1) (2) No technical change.
73.	Penetration 319 - (1) Changed Valve No. to "4627"; (2) Global Notes 3 and 4; (3) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (4) Changed Position At Cold Shutdown from "O" to "O/C".	(1) Correction of typographical error. No technical change. (2) No technical change. (3) Consistency with Ginna Administrative Control. (4) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions.

Table 3 - Penetration Changes		
No.	Change	Effect
74.	Penetration 320 - (1) Global Notes 3 and 4; (2) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (3) Changed Position At Cold Shutdown from "O" to "O/C".	(1) No technical change. (2) Consistency with Ginna Administrative Control. (3) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions.
75.	Penetration 321 - (1) Global Notes 3 and 4 for valve 5701; (2) Changed Position Indication in Control Room from "Yes" to "Status" for valve 5738; (3) Changed Position At Cold Shutdown from "C" to "O/C" for valve 5738; (4) Reordered penetration valves.	(1) No technical change. (2) Minor clarification only. No technical change. (3) Update for better representation of system configuration. (4) Valves now in numeric order. No technical change.
76.	Penetration 322 - (1) Global Notes 3 and 4 for valve 5702. (2) Changed Position Indication in Control Room from "Yes" to "Status" for valve 5737; (3) Changed Position At Cold Shutdown from "C" to "O/C" for valve 5737; (4) Reordered penetration valves.	(1) No technical change. (2) Minor clarification only. No technical change. (3) Update for better representation of system configuration. (4) Valves now in numeric order. No technical change.
77.	Penetration 323 - (1) Global Notes 3 and 4; (2) Changed Position At Normal Operation and Position At Immediate Postaccident from "O" to "LO"; (3) Changed Position At Cold Shutdown from "O" to "O/C".	(1) No technical change. (2) Consistency with Ginna Administrative Control. (3) Update for better representation of system configuration since fan coolers may be isolated for maintenance during cold shutdown conditions.

Table 3 - Penetration Changes		
No.	Change	Effect
78.	Penetration 324 - (1) Changed valve 8418 from "Diaphragm" to "Globe"; (2) Changed Position At Cold Shutdown from "O" to "O/C" for valve 8418; (3) Changed Position Indication in Control from "Yes" to "Both" for valve 8418; (4) Global Notes 1, 2, and 4; (5) Changed Maximum Isolation Time from "NA" to "60" for valve 8418; (6) Reordered penetration valves.	(1) Correction of typographical error. No technical change. (2) Update for better representation of system configuration. (3) Minor clarification only. No technical change. (4) No technical change. (5) Correction of typographical error. No technical change. (6) Valves now in numeric order. No technical change.
79.	Penetration 332a - (1) Global Note 1 for pressure transmitters; (2) Added "Globe" under Valve Type for the three manual valves; (3) Global Note 3 for the manual valves; (4) Reordered penetration valves.	(1) No technical change. (2) Correction of typographical omission. No technical change. (3) No technical change. (4) Valves now in numeric order. No technical change.
80.	Penetration 332b - Deleted entire penetration from table.	Penetration has double isolation and meets the criteria for a test connection. Therefore, this penetration is not required to be tested per 10CFR50 Appendix J and does not belong on the table.
81.	Penetration 332c - (1) Added "6.2-74" under UFSAR Figure for all valves other than 922. (2) Changed Position Indication in Control Room from "Yes" to "Both" for all four valves; (3) Changed Position At Immediate Postaccident from "O/C" to "C" for all valves.	(1) Correction of typographical omission. No technical change. (2) Minor clarification only. No technical change. (3) Update for better representation of system configuration. System isolated upon receipt of containment isolation signal.

Table 3 - Penetration Changes		
No.	Change	Effect
82.	Penetration 401 - (1) Added Note 11 to all valves other than 3517; (2) Changed Valve Type to "Swing Check" for valve 3517; (3) Changed Position Indication in Control Room from "Yes" to "R/G" for valves 3505A and 3517; (4) Global Notes 1, 2, 3, 4, and 5; (5) Reordered penetration valves.	(1) Correction of typographical omission. No technical change. (2) Correction of typographical error. No technical change. (3) Minor clarification only. No technical change. (4) No technical change. (5) Valves now in numeric order. No technical change.
83.	Penetration 402 - (1) Added Note 11 to all valves other than 3516 and 3518; (2) Changed Valve Type to "Swing Check" for valve 3516; (3) Changed Position Indication in Control Room from "Yes" to "R/G" for valves 3504A and 3516; (4) Global Notes 1, 2, 3, 4, and 5; (5) Reordered penetration valves.	(1) Correction of typographical omission. No technical change. (2) Correction of typographical error. No technical change. (3) Minor clarification only. No technical change. (4) No technical change. (5) Valves now in numeric order. No technical change.
84.	Penetration 403 - (1) Global Notes 1, 2, 3, 4, and 5; (2) Changed UFSAR Figure from "6.2-75" to "6.2-76" for valve 3995; (3) Added "6.2-76" under UFSAR Figure for all valves after valve 3995; (4) Added Note 11 to all valves other than valve 3995; (5) Added "4" under Class for all valves other than 3995; (6) Reordered penetration valves.	(1) No technical change. (2) Correction of typographical error. No technical change. (3) (4) (5) Correction of typographical omission. No technical change. (6) Valves now in numeric order. No technical change.
85.	Penetration 404 - (1) Global Notes 1, 2, 3, 4, and 5; (2) Changed UFSAR Figure from "6.2-75" to "6.2-76" for valve 3994; (3) Added Note 9 to all valves other than 4000D; (4) Reordered penetration valves.	(1) No technical change. (2) Correction of typographical error. No technical change. (3) Correction of typographical omission. No technical change. (4) Valves now in numeric order. No technical change.

Table 3 - Penetration Changes		
No.	Change	Effect
86.	Penetration 1000 - (1) Global Notes 1, 2, 4, and 5; (2) Added "Both" to Position Relative to Containment; (3) Added "3.8-31" to UFSAR Figure.	(1) No technical change. (2) (3) Correction of typographical omission. No technical change.
87.	Penetration 2000 - (1) Global Notes 1, 2, 4, and 5; (2) Added "Both" to Position Relative to Containment; (3) Added "3.8-30" to UFSAR Figure.	(1) No technical change. (2) (3) Correction of typographical omission. No technical change.

Table 4 - Note Changes		
No.	Change	Effect
1.	(1) Deleted last sentence of "old" Note 1 and moved it to "new" Note 2; (2) Renumbered remaining "old" Note 1 as Note 3.	(1) (2) The deleted sentence of the note is still applied to necessary penetrations. No technical change.
2.	Deleted "old" Note 2.	Note was only a duplication of the UFSAR text. See "new" Note 4. No technical change.
3.	Deleted "old" Note 3.	Note was only a duplication of the UFSAR text. See "new" Note 4. No technical change.
4.	(1) Deleted first two sentences of "old" Note 4; (2) Modified last sentence to reflect system configuration and testing requirements; (3) Renumbered "old" Note 4 as Note 6.	(1) These two sentences only duplicated UFSAR text. No technical change. (2) Sentence now accurately reflects wording of the January 30, 1987 letter. (3) No technical change.
5.	Deleted "old" Note 5.	Note was only a duplication of the UFSAR text. See "new" Note 4. No technical change.
6.	Deleted "old" Note 6.	Note was only a duplication of the UFSAR text. See "new" Note 4. No technical change.
7.	Deleted "old" Note 7.	Note was only a duplication of the UFSAR text. No technical change.
8.	Deleted "old" Note 8.	Note was only a duplication of the UFSAR text. No technical change.

Table 4 - Note Changes		
No.	Change	Effect
9.	(1) Modified "old" Note 9; (2) Renumbered "old" Note 9 as Note 13.	(1) (2) Minor clarification only. Note now describes in detail the use of the pressure transmitter as a boundary. No technical change.
10.	Deleted "old" Note 10.	Note was only a duplication of the UFSAR text. See "new" Note 4. No technical change.
11.	Deleted "old" Note 11.	Note was only a duplication of the UFSAR text. See "new" Note 4. No technical change.
12.	(1) Modified "old" Note 12; (2) Renumbered to "new" Note 15; (3) Provided new reference letter.	(1) (2) Minor clarification only. No technical change. (3) New reference letter provided as a result of Reference 2.25. No technical change.
13.	Deleted "old" Note 13.	Note was only a duplication of the UFSAR text. No technical change.
14.	(1) Deleted last two sentences of "old" Note 14 and moved it to "new" Note 16; (2) Modified remaining "old" Note 14; (3) Renumbered "old" Note 14 as Note 17.	(1) The deleted sentence of the note is still applied to necessary penetrations. No technical change. (2) (3) Minor clarification of note only. No technical change.
15.	Deleted "old" Note 15.	Note was only a duplication of the UFSAR text. No technical change.
16.	Deleted "old" Note 16.	Note is incorrect and no longer applicable.

Table 4 - Note Changes		
No.	Change	Effect
17.	(1) Modified "old" Note 17; (2) Renumbered "old" note 17 as Note 21.	(1) (2) Minor clarification of note only. No technical change.
18.	(1) Modified "old" Note 18; (2) Renumbered "old" Note 10 as Note 11; (3) Provided new reference letter.	(1) (2) Minor clarification of note only. No technical change. (3) New reference letter provided as a result of Reference 2.25. No technical change.
19.	Added Note 1.	Note provides clarification on use of the penetration. See letter from R. Mecredy, RG&E, to A. Johnson, NRC, dated March 13, 1990.
20.	Added Note 2.	Note provides generic description of penetration seals. Note originally part of "old" Note 1. No technical change.
21.	Added Note 4.	Minor clarification only. Note originally part of "old" Notes 2, 3, 5, 6, 10, and 11. Note now used on a global basis. No technical change.
22.	Added Note 5.	Minor clarification only. Note provides additional information related to penetration's use. No technical change.
23.	Added Note 7.	Note provides consistency with Technical Specification Table 3.6-1 Note 20. New reference letter provided as a result of Reference 2.25. No technical change.

Table 4 - Note Changes		
No.	Change	Effect
24.	Added Note 8.	Minor clarification only. Note provides additional information related to MOV breaker status. No technical change.
25.	Added Note 9.	Minor clarification only. Note provides additional information related to function of the valve. No technical change.
26.	Added Note 10.	Minor clarification only. Note provides detailed description of penetration valves. No technical change.
27.	Added Note 12.	Minor clarification only. No technical change.
28.	Added Note 14.	Note provides additional information related to penetration. See letter from R. Mecredy, RG&E, to A. Johnson, NRC, dated July 9, 1990.
29.	Added Note 16.	Note provides clarification of leakage test requirements. Note originally part of "old" Note 14. No technical change.
30.	Added Note 18.	Minor clarification only. Note provides additional information related to solenoid status. No technical change.

Table 4 - Note Changes		
No.	Change	Effect
31.	Added Note 19.	Note provides consistency with Technical Specification Table 3.6-1 Note 22 and notes related to penetrations 313 and 317. No technical change.
32.	Added Note 20.	Minor clarification only. Note provides additional information related to penetration's use. No technical change.

6.2.4.4.2 Class 1 Penetrations (Outgoing Lines, Reactor Coolant System) 6/501

6.2.4.4.2.1 Applicable Lines. Normally operating outgoing lines connected to the reactor coolant system are provided with at least one automatically operated trip valve and manual isolation valves in series located outside the containment. General Design Criterion 55, which applies to Class 1 lines, specifies that one valve should be located inside the containment and one valve should be located outside the containment, with the valves being either locked closed or being automatic isolation valves. Furthermore, a simple check valve outside containment may not be used as an automatic isolation valve. The following lines are included in this class: 108, 110b, 112, 140, 205, 206a, and 207a. 6/501

6.2.4.4.2.2 Class 1 Penetration Evaluation. The containment isolation provisions for line 140 (residual heat removal system letdown line) differ from the explicit requirements of GDC 55 from the stand-point of valve location. A single motor-operated valve is provided inside the containment; there is no containment isolation valve in the line outside the containment. However, the closed, safety-grade system outside the containment (residual heat removal system) is a suitable isolation barrier in lieu of a valve adjacent to the containment and GDC 55 permits isolation provisions that differ from the explicit requirements, provided the basis for acceptability is defined. Therefore, the isolation provisions for line 140 satisfy GDC 55. 6/501

Also, each of these lines contains an air-operated valve outside the missile barrier.

The isolation provisions for lines 205, 206a, and 207a differ from the explicit requirements of GDC 55 from the standpoint of valve location and actuation. Each of these lines is provided with an air-operated valve and one manual valve located in series outside the containment. Locating both containment isolation valves outside containment was considered acceptable if the criteria used in the design of the piping between the containment and the first valve are sufficiently conservative to provide adequate assurance of integrity. 4/478 037

~~For line 112, valves 200A, 200B, and 202 are provided with an automatic isolation signal, which was found acceptable to the NRC (Reference 11). In lines 205, 206a, and 207a,~~ the controls for the air-operated valves inside the missile barrier were modified to fail closed when the instrument air to the

The valves also receive a containment isolation signal.

containment is automatically isolated and remain closed on reset of containment isolation. The ~~modification~~ configuration was found acceptable by the NRC (Reference 10). | 4/600

The containment isolation provisions for lines 108 and 110b differ from the explicit requirements of GDC 55 from the standpoint of the number of isolation valves. There is no containment isolation valve in these lines inside the containment. Therefore, an automatic isolation valve for line 108 and a locked-closed manual valve for line 110b would be required inside the containment to meet current criteria.

(Reactor Coolant Pump Seal water return and excess letdown line),

For line 108, it was concluded that installing a second automatic isolation valve is not required. ~~Line 108 is the reactor coolant pump seal water return and excess letdown line~~. The line is a 3-inch line and ~~it~~ has an automatic, leak-tested, motor-operated valve outside containment, ~~and~~ Also, the line terminates in the volume control tank, which has a design pressure higher than the containment accident pressure (Reference 12). | 3/334 | 4/600

→ This configuration was found acceptable by the NRC

Backfitting was not recommended for line 110b because: by the NRC

1. The penetration is isolated further upstream from the cold leg by check valves which are periodically leak tested.

2. The penetration is isolated from the hot legs by two check valves and a closed motor-operated valve.

3. During safety injection the line is pressurized by the safety injection system and because the line is connected vertically to the reactor coolant system, a water seal would exist after injection.

4. The line is of small diameter (3/4-in.).

considered in support of the SEP

Additionally, from a risk standpoint, the probabilistic risk assessment ranked this issue of low importance and estimated the impact of the resolution to be low (Reference 10).

Penetration 112 explicitly meets GDC 55 (Reference 11).

6.2.4.4.3 Class 2 (Outgoing Lines) | 6/501

6.2.4.4.3.1 Applicable Lines. Normally operating outgoing lines not connected to the reactor coolant system and not protected against missiles throughout | 6/501

their length inside the containment are provided with at least one automatically operated trip valve or one remotely operated stop valve located outside the containment.

General Design Criterion 56 applies to Class 2 penetration lines and specifies that one valve should be located inside the containment and one valve should be located outside the containment with the valves being either locked closed or being automatic isolation valves. Furthermore, a simple check valve outside the containment may not be used as an automatic isolation valve. The following lines are included in this class: 107, 120b, 121c, 121d, 123 (bottom), 129, 143, 203a, 305a, and 332a. | 3/605

6.2.4.4.3.2 Class 2 Evaluation. The containment isolation provisions for lines 107, 121c, 121d, 143, 203a, and 332a differ from the explicit requirements of GDC 56 from the standpoint of valve location. All of these lines have isolation valves located outside the containment. ~~This is acceptable, however, based on the discussion under Class 1.~~ | 6/501

It is not practical for lines 107 (sump discharge line) and 143 (reactor coolant drain tank discharge line) to have an isolation valve located inside the containment because the valve may be submerged as a result of a loss-of-coolant accident. Therefore, ~~The~~ valving arrangement for these lines with both valves located outside the containment is acceptable. Standard Review Plan 6.2.4, Item II.3, has provided guidance in this concern. (Reference 10)

Lines 121c, 121d, 203a, and 332a are small sensing lines for the containment pressure transmitters and are open to the containment atmosphere; they were installed as a requirement of the TMI Lessons Learned. The pressure transmitters form a closed boundary outside the containment. A manual valve is also provided in each line for double-barrier isolation capability. ~~However, to be an effective isolation valve, the manual valve should be a remote manual power-operated valve. With this change, and~~ In light of the postaccident monitoring function of these lines, the isolation barriers ~~would~~ satisfy GDC 56 on some other defined basis. (Reference ANSI ANS-56.2, 1984) | 3/600

The containment isolation provisions for lines 120b, 123 (bottom), and 305a differ from the explicit requirements of GDC 56 from the standpoint of valve | 3/605

location and actuation. Each of these lines is provided with an air-operated valve and a manual valve in series outside the containment. ~~Locating both isolation valves outside the containment may be acceptable based on the discussion under Class 1 for lines 112, 205, 206a, and 207a. The local manual valve in these lines would have to be replaced with an automatic isolation valve to meet current criteria.~~ 3/605

Backfitting to meet explicit valve location requirements was not recommended by the NRC for these lines for the following reasons: (Reference 10)

1. As a plant design basis, the piping between the containment and the containment isolation valves is at least equal to containment design pressure. Isolation valves are similarly rated.

2. Piping runs between the containment penetrations and the containment isolation valves have been kept as short as possible and are Seismic Category I.

3. All piping penetrations are solidly anchored to the containment wall. External guides, stops, increased pipe thickness, or other means are provided, where required, to limit motion and moments to prevent ruptures by making the penetration the strongest part of the system. In addition, all penetrations and anchorages are designed for forces and moments that might result from postulated pipe ruptures.

4. ~~All~~ piping penetrations, ~~except the main steam lines and the feedwater lines,~~ are located in areas that are protected from tornado missiles. ~~The main steam and feedwater lines can resist postulated tornado missiles without loss of required safety function.~~

Backfitting to meet explicit valve actuation requirements was not recommended by the NRC for the following reasons: (Reference 10)

1. These lines are small (3/8 in. and 1 in.).

2. The valves are located near the containment wall.

3. The piping and valves are designed as Seismic Category I.

4. These valves are small, air-operated, fail-closed valves and have had no previous history of failure to close at Ginna Station.

Additionally, from a risk standpoint, the SEP pipe rupture analysis ranked this issue of low importance and estimated the impact of the resolution to be low. Consequently, these lines are acceptable.

6.2.4.4.4 Class 3 (Incoming Lines) 6/501

Two subclasses are identified for Class 3 penetration lines. General Design Criteria 55 or 56 apply to Class 3 lines, depending on the line function:

6.2.4.4.4.1 Class 3A Penetrations. Incoming lines connected to open systems outside the containment are provided with one of the following arrangements: (1) a check valve located inside containment and a remote-operated valve or closed manual valve located outside the containment, (2) both a check valve and a remote-operated valve or closed manual valve located outside the containment, or (3) two remote-operated valves located outside containment. The following penetration lines are included in this subclass: 120a, 121a, 121b, 129, 305b, 310a, and 310b. 6/501 3/600

The containment isolation provisions for ~~both~~ lines 121a and 129 differ from the explicit requirements of GDC 56 from the standpoint of valve type. A ~~check~~ locked-close manual valve, both of which are leak tested, check valve and a ~~pressure control valve~~ provide for containment isolation. ~~For the pressure control valve to be an acceptable isolation valve, it must~~ satisfy the requirements for an automatic isolation valve. The function of both pressure control valves 441 and 1014 is to maintain the downstream pressure at a constant 0.5 psig. If the downstream pressure is elevated above ~~0.5 psig~~ (e.g., in the event of an accident), both pressure control valves will automatically close. However, if the downstream pressure is less than 0.5 psig, both pressure control valves may open in an attempt to raise the downstream piping pressure. In light of this, the performance characteristics of the valve controls do not satisfy the requirements for an automatic isolation valve. Consequently, the NRC concluded that lines 121a and 129 should be modified to meet current criteria (Reference 9). For lines 121a and current criteria (Reference 9). For lines 121a and 129, RG&E agreed ~~to lock close manual valves 547 and 1793, respectively, and leak test them.~~ This provides two ~~barriers outside~~ isolation barriers containment, which does not satisfy GDC 56 3/600

and 57, but provides equivalent protection. This configuration ~~administrative backfitting~~ was found acceptable by the NRC (Reference 10). 3/600

The containment isolation provisions for lines 120a, 121b, 310a, and 310a, and 310b satisfy the explicit requirements of GDC 56 and are acceptable. 3/605

The containment isolation provisions for line 305b differ from the explicit requirements of GDC 56 from the standpoint of valve location. This line has two automatic air-operated isolation valves located outside containment. This is acceptable based on the location discussion for ~~of~~ Class 1 lines ~~1125~~ 205, 206a, and 207a (Reference 10) 3/458 3/032

6.2.4.4.4.2 Class 3B Penetrations. Incoming lines connected to closed systems outside containment are provided with at least one check valve or normally closed isolation valve located inside containment, a check valve located outside containment, or two remote-operated valves inside containment. ~~The~~ The following lines are included in this subclass: 100, 101, 102, 105, 106, 109, 110a, 111, and 113. 6/501 3/600

The containment isolation provisions for line 111, the residual heat removal supply line, differ from the explicit requirements of GDC 55 from the standpoint of both valve location and actuation. The valving arrangement for this line is the same as for line 140, with a single ~~two~~ motor-operated valves located inside the containment that is ~~are~~ remotely controlled from the control room. There is no isolation valve outside the containment except for 459 which is on a branch flowpath. Since the system outside the containment is a closed, safety-grade system, it constitutes an appropriate isolation barrier in lieu of a valve in the line outside the containment. Also, the line has a postaccident safety function and automatic isolation of the line is not appropriate. Therefore, the valve location and provisions for line 111 satisfy GDC 55 on some other defined basis (Reference 10).

The containment isolation provisions for lines 100, 102, 106, and 110a, the charging lines, differ from the explicit requirements of GDC 55 from the standpoint of valve number. A simple check valve in each line, inside containment, is identified as the containment isolation valve. These lines are connected to the chemical and volume control system outside the containment. Since The charging system does not have a required postaccident safety function,

~~Therefore, the containment isolation provisions for these lines would have to be upgraded to meet GDC 55 requirements; i.e., the~~ these lines would have to be automatically isolated to meet GDC 55 requirements.

~~For lines 100, 102, 106, and 110,~~ Backfitting was not recommended by the NRC for these lines ~~(Reference 10)~~ (Reference 10) because: 3/600

1. The piping system is designed to operate at 2250 psi, significantly above the containment design pressure.

2. The piping is Seismic Category I.

3. The charging pumps are positive displacement pumps and, therefore, leakage back through the pumps is expected to be minimal.

The containment isolation provisions for lines 101 and 113, safety injection system, differ from the explicit requirements of GDC 55 from the standpoint of both valve location and actuation. Each safety injection line is provided with a check valve outside containment. Additionally, each safety injection line is provided with two parallel motor-operated valves inside the containment that are remotely controlled from the control room. Since the safety injection system outside the containment is a closed, safety-grade system, double barrier isolation capability is provided. Consequently, GDC 55 is met on some other defined basis (Reference 10). 3/600

The containment isolation provisions for lines 105 and 109, the containment spray pump discharge lines, differ from the explicit requirements of GDC 56 from the standpoint of valve number and type. A simple check valve is provided in each line outside containment, which is not an acceptable automatic isolation valve per current criteria. Although these lines have a postaccident safety function, they are open to the containment atmosphere and, therefore, the isolation provisions should satisfy GDC 56 on some other defined basis. 3/600

~~Specifically, the check valves should be located inside the containment and remote-manual isolation valves should be provided outside the containment outside the containment in order to meet current criteria.~~ 2/100

* Since GDC 56 permits the use of check valves inside containment as containment isolation valves

Backfitting for these lines was not recommended (Reference 10). ~~The basis for basis for accepting the valve outside is the same as that given for Class 2~~ 3/600

* It [illegible] switch the inside check valves permitted by previous guidance.

~~lines 120b, 123 (bottom), and 305a discussed above. The valves were replaced with n-stamped, Seismic Category I, ASME III, Class 2 valves.~~ 3/605

6.2.4.4.5 Class 4 Penetrations (Closed System, Missile Protected) 6/501

6.2.4.4.5.1 Applicable Lines. Normally operating incoming and outgoing lines, which are connected to a closed system inside the containment and protected against missiles throughout their length, are provided with at least one manual valve, locked closed valve, remote manual valve, or automatic isolation valve outside ~~automatic isolation valve~~ outside containment. 6/501 3/600

General Design Criterion 57 applies to Class 4 lines. The following lines are included in this class: 119, 123 (top), 124a, 125, 126, 127, 128, 130, 131, 201, 206b, 207b, 209, 301, 303, 308, 311, 312, 315, 316, 319, 320, 321, 322, 323, 401, 402, 403, and 404. 3/605

This criterion specifies the isolation provisions for closed systems inside the containment that are neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere. For these closed systems to qualify as ~~bona fide~~ containment isolation barriers, they must be safety-grade design since the containment isolation system is an engineered safety feature. Further guidance is provided by Standard Review Plan 6.2.4 in this regard. Closed systems must, in part, be protected against missiles and pipe whip, designated Seismic Category I, and classified Safety Class 2. Furthermore, GDC 57 specifies that a locked closed, remote manual, or automatic isolation valve must be provided outside the containment and that a simple check valve may not be used as the automatic isolation valve.

6.2.4.4.5.2 Class 4 Evaluation. The containment isolation provisions for lines 201, 209, 308, 311, 312, 315, 316, 319, 320, and 323 differ from the explicit requirements of GDC 57 from the standpoint of valve actuation. All of these lines are equipped with local manual isolation valves outside the containment. These lines are served by the service water system, ~~For lines 308, 311, 312, 315, 316, 319, 320, and 323, which serve the containment fan cooler system (an engineered safety features heat removal system), the manual isolation valves should be upgraded to power-operated, remote manual valves. Furthermore, to meet current criteria the closed portions of the system inside~~ 6/501

the containment that are served by lines 201, 209, 301, and 303 should be of safety-grade design to justify the applicability of GDC 57. If GDC 57 cannot be applied, GDC 56 will govern; i.e., automatic isolation valves should be provided both inside and outside the containment. In any event, the manual valves in lines 201, 209, 301, and 303 should be automatic isolation valves since the lines are nonessential, in order to meet current criteria (Reference 9). | 3/600

The NRC recommended that in lines 201, 209, 308, 311, 312, 315, 316, 319, 320, and 323 the existing manual valves should be changed to remote manual. However, since the probabilistic risk assessment determined that the issue is of low significance, an alternative modification was proposed. Because these valves would only be needed for containment isolation if there was a significant breach of the fan cooler system, and the isolation valves were accessible following a design-basis loss-of-coolant accident, RG&E proposed to upgrade the existing valves, or install other manual valves and limit their leakage rate. This could be established separately for the system and need not be related to 10 CFR 50, Appendix J_x limits. The NRC agreed with the proposal and concluded that a leakage limit should be based on the manufacturer's design specifications and accepted standards for the valve type and size (Reference 10). | 3/600

The valves include 4635, 4636, 4757, and 4758 for lines 201 and 209, which carry service water to and from the reactor compartment coolers, and 4627, 4628, 4629, 4630, 4641, 4642, 4643, and 4644 for lines 308, 311, 312, 315, 320, and 323, which carry service water to and from the containment fan coolers. The valves have been upgraded. The valves supplying service water to the coolers are manual, lever-operated butterfly valves, which are fully open during normal operation. The service water return valves are manual, gear-operated butterfly valves, which can be throttled as required to regulate service water returning from the coolers. | 2/1012 | 2/1009

Insert

For lines 301 and 303, RG&E agreed to lock close manual valves 6152 and 6165 and leak test them. This provides two barriers outside the containment, which does not satisfy GDC 56, but provides equivalent protection. This administrative backfitting was found acceptable (Reference 10). | 3/600 | Figure 6.2-57 | 3/600

Penetration lines 401 and 402 are the main steam lines. Each line is provided with a main steam stop valve that is motor operated. The main steam blowdown

New IP

Penetration lines 125, 126, 127, and 128 are the component cooling water lines to and from the reactor coolant pump motors. These lines are considered essential and do not receive an automatic containment isolation signal because of the potential for damaging the reactor coolant pumps following a spurious containment isolation signal.

branch lines 321 and 322 are provided with air-operated isolation valves. 3/605
These valves are available to automatically or remote manually isolate the main steam lines. Therefore, the isolation provisions satisfy GDC 57 → (Reference 9).

Penetration lines 403 and 404 are the feedwater lines. Each line is isolated by a manual valve and a check valve in series. Additionally, each feedwater line has two 3-in. auxiliary feedwater lines joining it downstream of the manual valve ~~and is isolated with a manual valve and a check valve in series.~~ Under accident 5/102 702
conditions, the auxiliary feedwater system is automatically initiated. The isolation provisions of lines 403 and 404 differ from the explicit requirements of GDC 57 from the standpoint of valve type. Since the check valve in the feedwater lines outside the containment is not an appropriate automatic isolation valve, the manual valve outside the containment would have to be upgraded to a remote manual isolation valve. Backfitting for lines 403 and 404 was not recommended for the same reasons discussed under valve location for Class 2 lines 120b, 123 (bottom), and 305a (Reference 10). Additionally, the feedwater lines can resist postulated tornado missles without loss of required safety function. 5/702

~~Penetrations 119 and 123 (top) are the standby auxiliary feedwater lines to the steam generators. Each line is isolated with a motor-operated stop-check valve located outside containment and has a check valve inside containment. The motor-operated valves are available to remote manually isolate the lines.~~ 3/605

Containment isolation provisions for penetration lines 119, 123 (top), 124a, ~~125, 126, 127, 128,~~ 130, 131, 206b, 207b, 321, and 322 satisfy the ~~explicit~~ requirements of GDC 57.

6.2.4.4.6 Class 5 Penetrations (Special Service) 6/501

6.2.4.4.6.1 Applicable Lines. Lines that penetrate the containment and which 6/501
may be opened to the containment atmosphere, but which are normally closed during reactor operation, are provided with either two isolation valves in series, one isolation valve and one blind flange, ~~or two blind flanges.~~ Normally one 6/067
of these devices is located inside and the other is located outside the 3/600
~~is located outside the~~ containment.

General Design Criterion 56 applies to Class 5 penetration lines. The following lines are included in this class: ~~21,~~ 29, 103, 124b, 132, 141, 142, 6/067
202, 203b, 204, 210, 300, 304, 305c, 307, 309, 313, 317, 324, ~~332b~~ and 332c. 3/052

Since the penetration contains two double gasketed flanges, only one is required for isolation purposes.

6.2.4.4.6.2 Class 5 Evaluation. The penetration lines listed below differ from the explicit requirements of GDC 56 from the standpoint of isolation barrier type: line having blind flanges inside ~~and outside the containment~~ (29, 103, 204, 300, 313, and 317) ~~, and lines having pipes or test connections capped inside the containment (103 and 332b)~~. | 6/501 | 6/049 | 3/021

A blind flange inside or outside the containment is an acceptable isolation barrier in lieu of an isolation valve, if it is leak testable. ~~Line 29, the steam generator inspection and maintenance cabling access, is isolated by a double-gasketed, leak-testable flange both inside and outside containment.~~ Line 29, the fuel transfer tube, is isolated by a double-gasketed resilient seal flange inside the containment that is leak testable ~~, and a manual (locked closed) valve outside containment.~~ Line 313, leak test depressurization, and 317, leak test supply, are equipped with leak testable blind flanges inside the containment and a motor-operated valve outside the containment. Lines 204 and 300, purge supply and purge exhaust respectively, are equipped with leak testable blind flanges inside containment and air-operated valves outside containment. | 6/049 | 3/021 | 2/100

Line 103, the construction fire service water line, which is no longer in use, has a ~~pipe cap~~ blind flange inside the containment ~~, a locked closed valve outside the containment, and a welded cap outside. The isolation provisions for line 332b, leak test instrumentation line, consist of a locked closed manual valve outside the containment and a tubing cap inside the containment which are both subject to local leakage testing. Therefore, GDC 56 is met on some other defined basis (Standard Review Plan 6.2.4, Item II.6) for these lines~~.

The containment isolation provisions for lines 141 and 142, containment sump recirculation system, differ from the explicit requirements of GDC 56 from the standpoint of valve actuation, due to their postaccident safety function, a single ~~Remote manual~~ motor-operated valve is used for each line ~~This criterion permits such deviations if the basis for acceptability is defined. Therefore~~, therefore the valve actuation provisions are acceptable and meet GDC 56 on some other defined basis (Standard Review Plan 6.2.4, Item II.3).

Containment isolation provisions for lines 124b, 202, 203b, 210, 304, and 305c differ from the explicit requirements of GDC 56 from the standpoint of valve

location. All of these lines have two isolation valves in series located outside the containment. This is acceptable, however, based on the discussion under Class 1 for lines ~~111~~, 205, 206a, and 207a (Reference 9) | 3/600 | 3/021

Containment isolation provisions for lines 332c differ from the explicit requirements of GDC 56 from the standpoint of isolation barrier type. The isolation provisions for lines 332c, hydrogen monitor instrumentation lines, consist of a normally closed solenoid-operated valve and a closed system outside containment that is Seismic Category I and designed to withstand maximum containment accident pressure. The lines are 3/8-in. (O.D.) stainless steel tubing. GDC 56 is met on some other defined basis (Standard Review Plan 6.2.4, Item II.6) for these lines. (Reference 10) | 3/052 608

Containment isolation provisions for lines 132, 307, 309, and 324 satisfy the explicit requirements for GDC 56 and are acceptable. | 3/021

End of changes

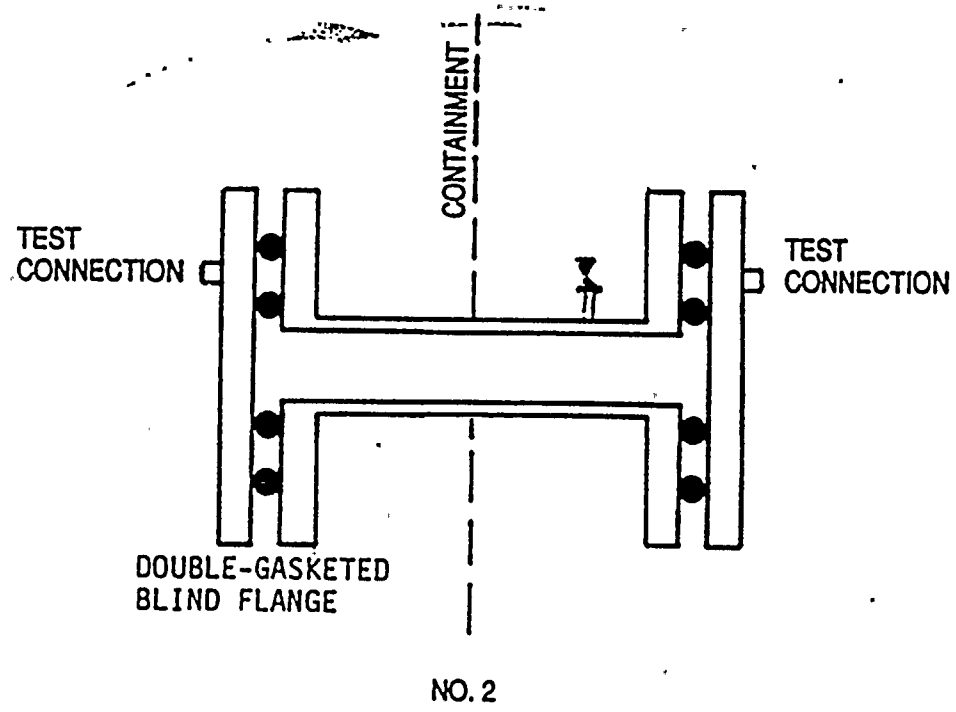
6.2.4.4.7 Special Cases | 6/501

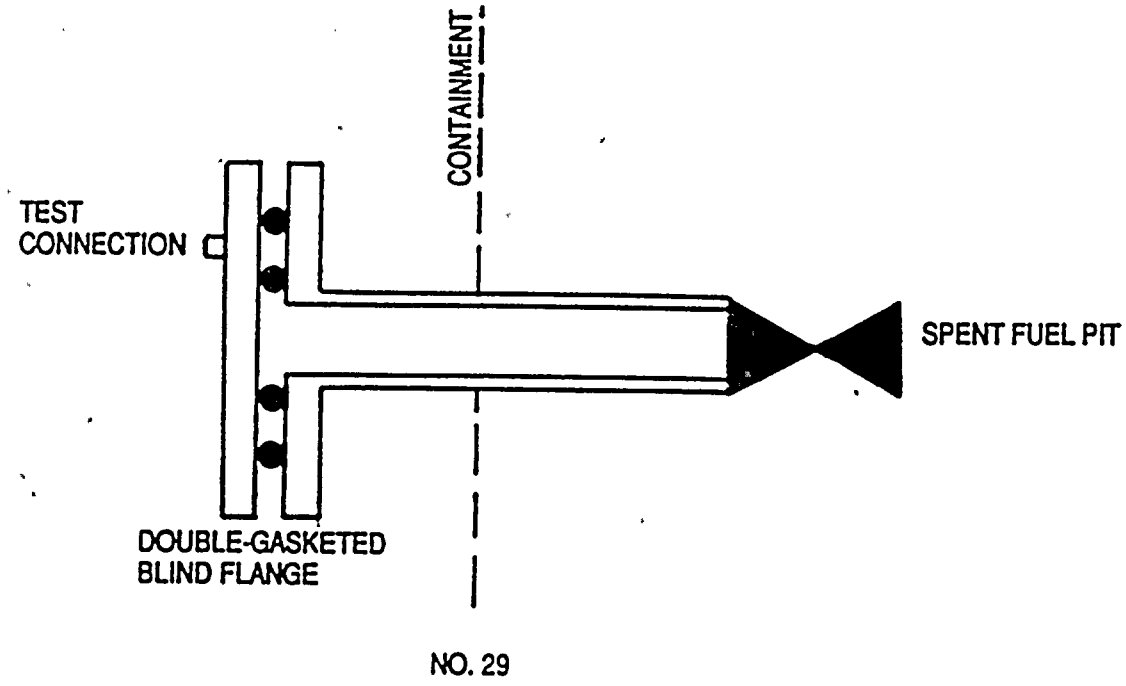
The containment penetrations No. 1000, personnel hatch, and No. 2000, equipment hatch, are not covered by the penetration classes discussed above, but are evaluated under containment isolation provisions. These penetrations are described in Section 3.8.1.5 and shown in Figures 3.8-30 and 3.8-31. These openings are provided with redundant closures and/or seals, and are closed during normal operation. They are also leak testable.

6.2.4.4.8 Instrumentation and Controls Evaluation | 6/501

The instrumentation and control aspects of the override of the containment purge valve isolation and other engineered safety feature actuation signals were also reviewed by the NRC against current review guidelines. The evaluation concluded[13] that the electrical, instrumentation, and control aspects of the override of engineered safety features actuation signals are acceptable, except for a lack of adequate physical protection for some of the engineered safety features reset push buttons. | 4/600

The review resulted in two design modifications. One was to remove the blocking mechanisms that existed in the actuation and reset logic of the containment





6/049

ROCHESTER GAS AND ELECTRIC CORPORATION
R. E. GINNA NUCLEAR POWER PLANT
UPDATED FINAL SAFETY ANALYSIS REPORT

Figure 6.2-13
S/G Inspection/Maintenance,
Penetration No. 2
Fuel Transfer Tube, Penetration No. 29

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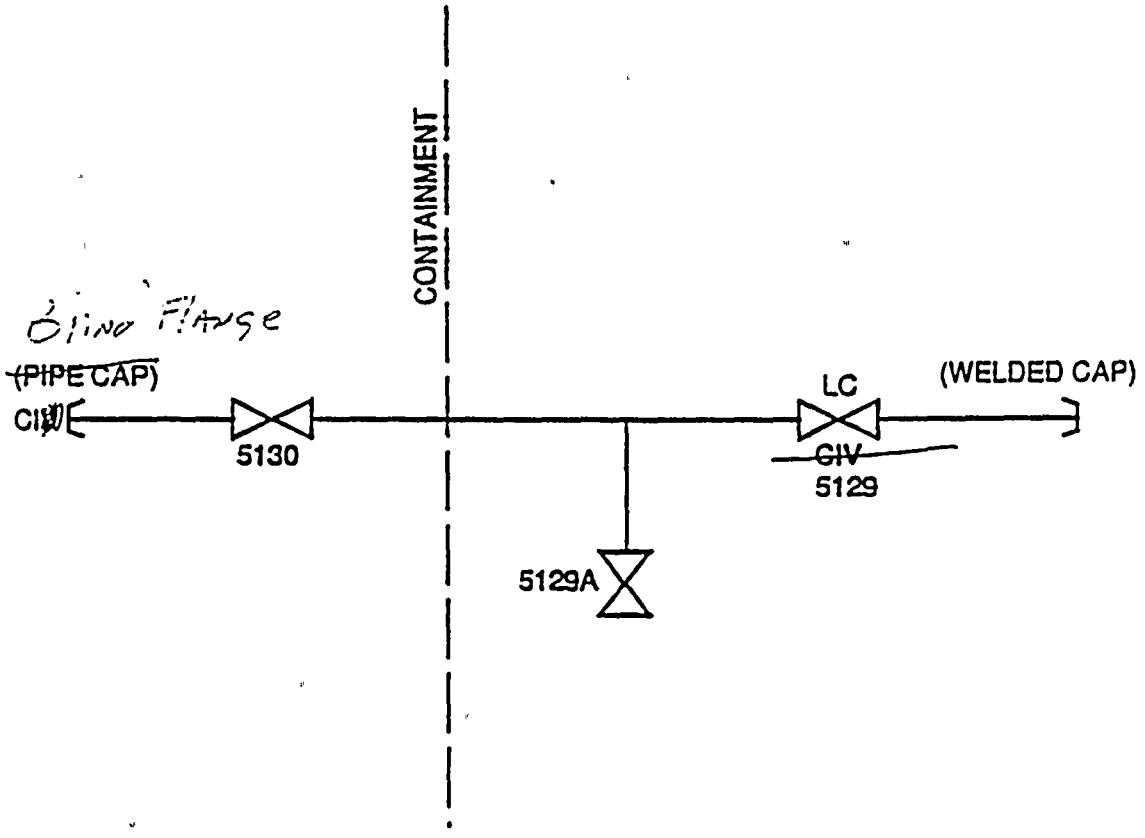

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Figure 6.2-17

Construction Fire Service Water
Penetration No. 103

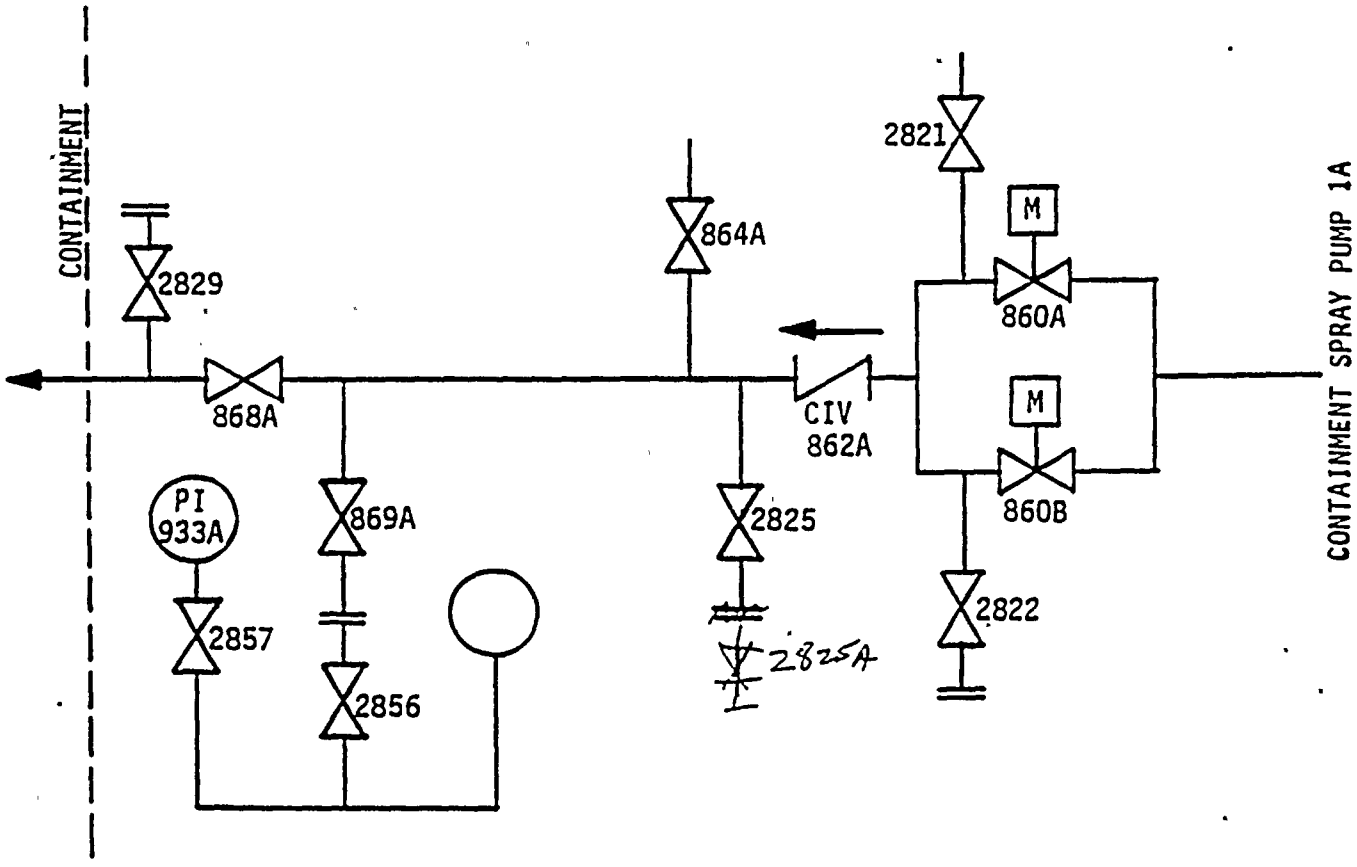

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Figure 6.2-18

Containment Spray Pump 1A
Penetration No. 105

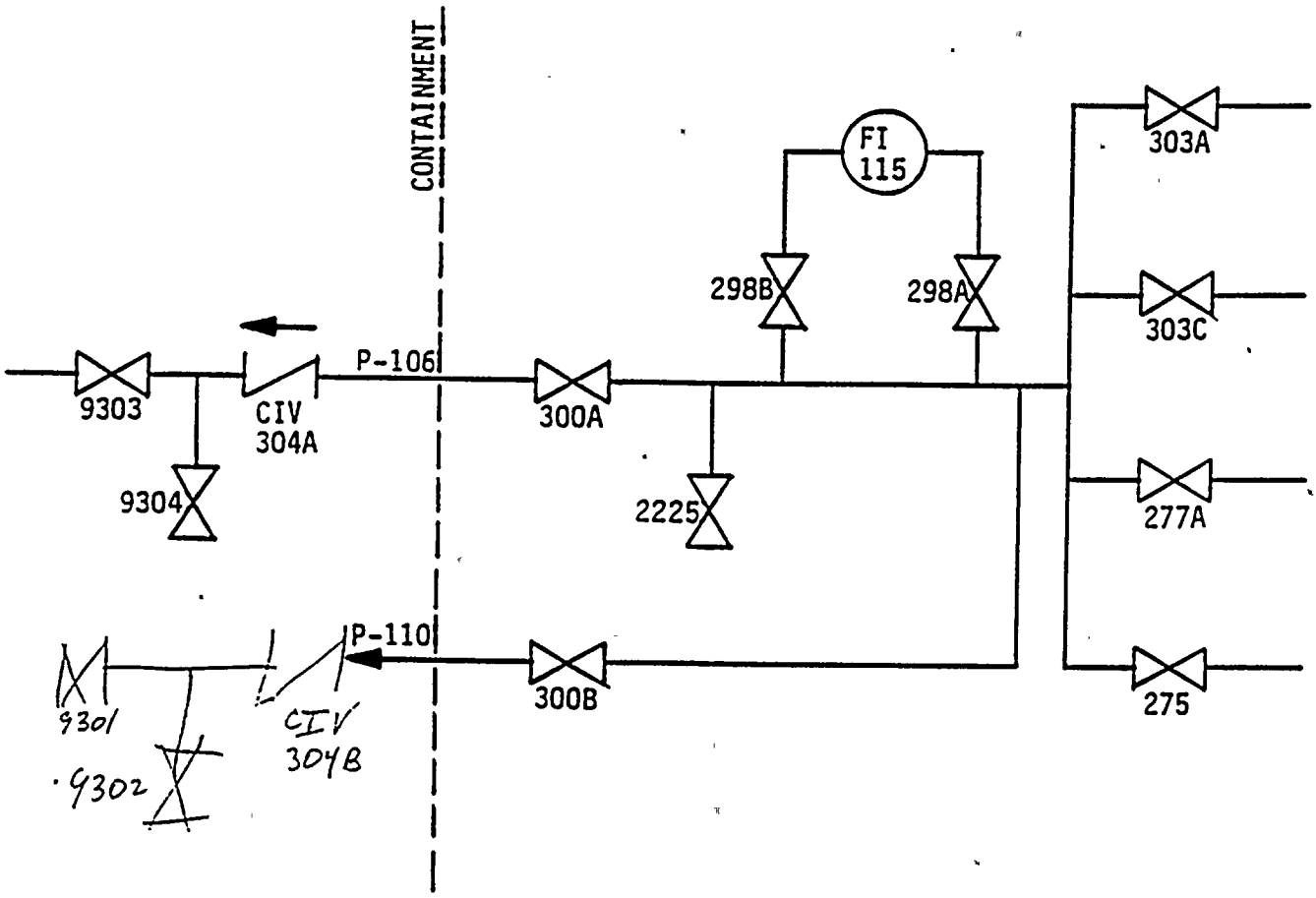

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Figure 6.2-19

Reactor Coolant Pump "A" Seal Water Line Penetration No. 106

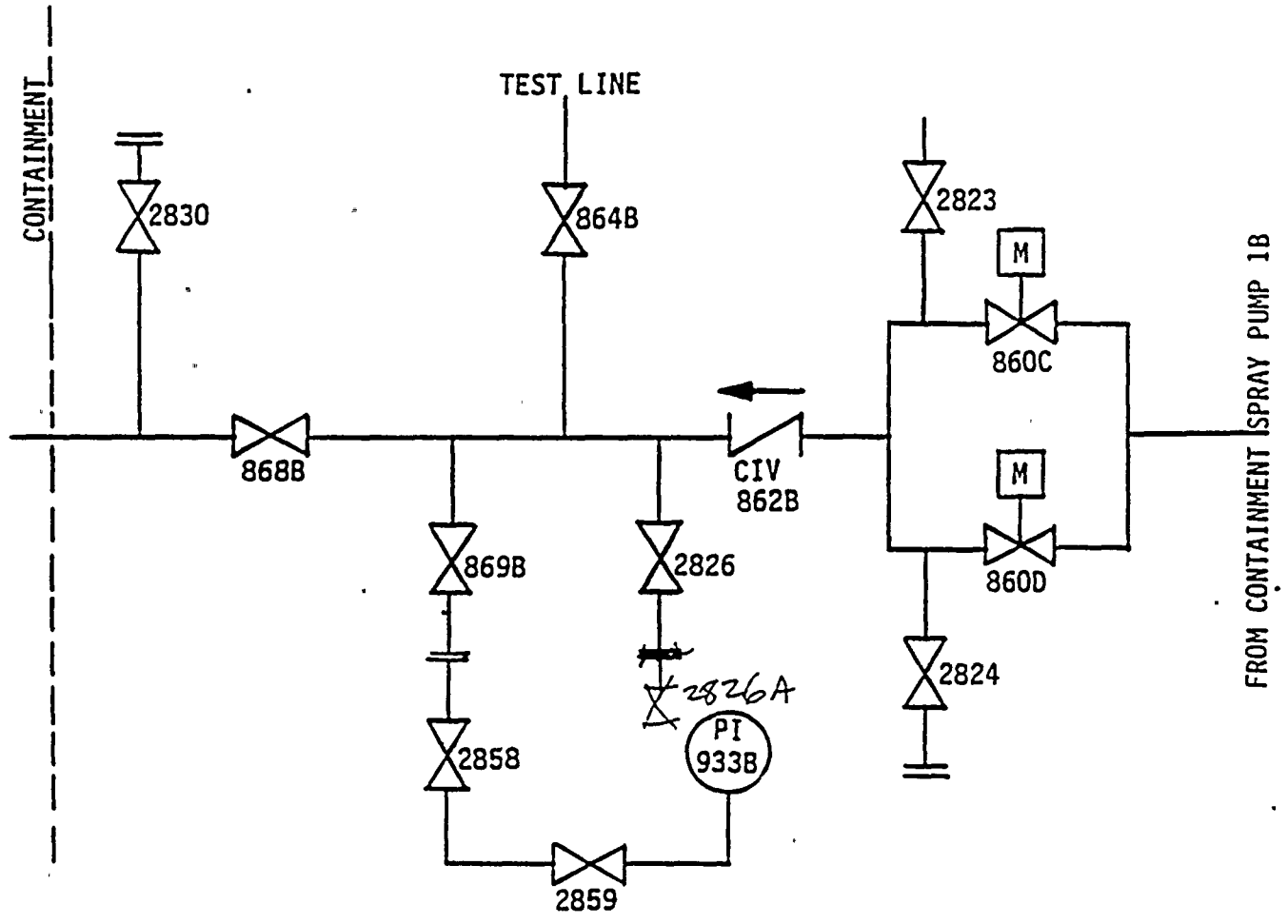

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Figure 6.2-22

Containment Spray Pump 1B
Penetration No. 109

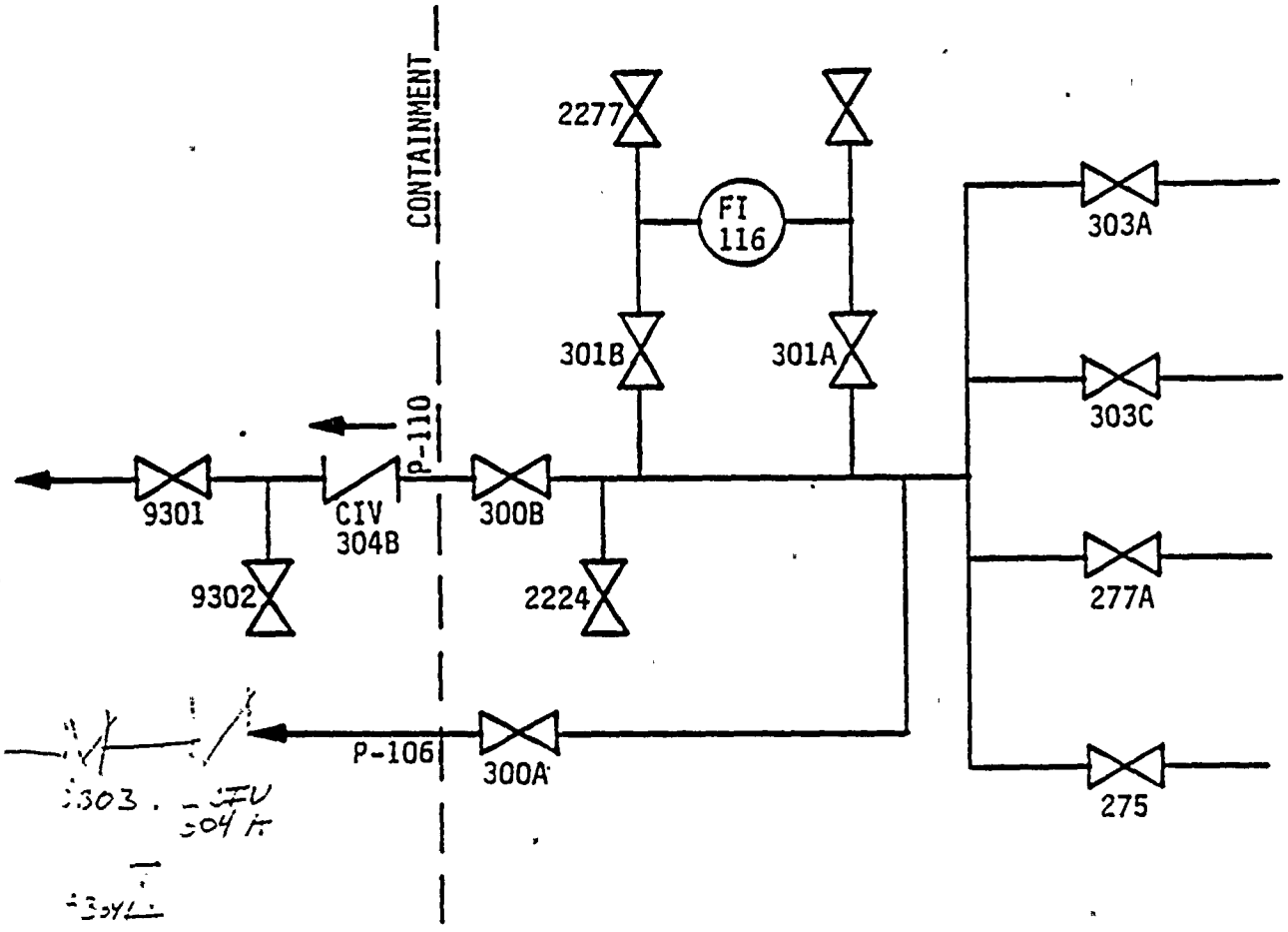

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Figure 6.2-23

Reactor Coolant Pump "B" Seal Water Inlet, Penetration No. 110a (Top)

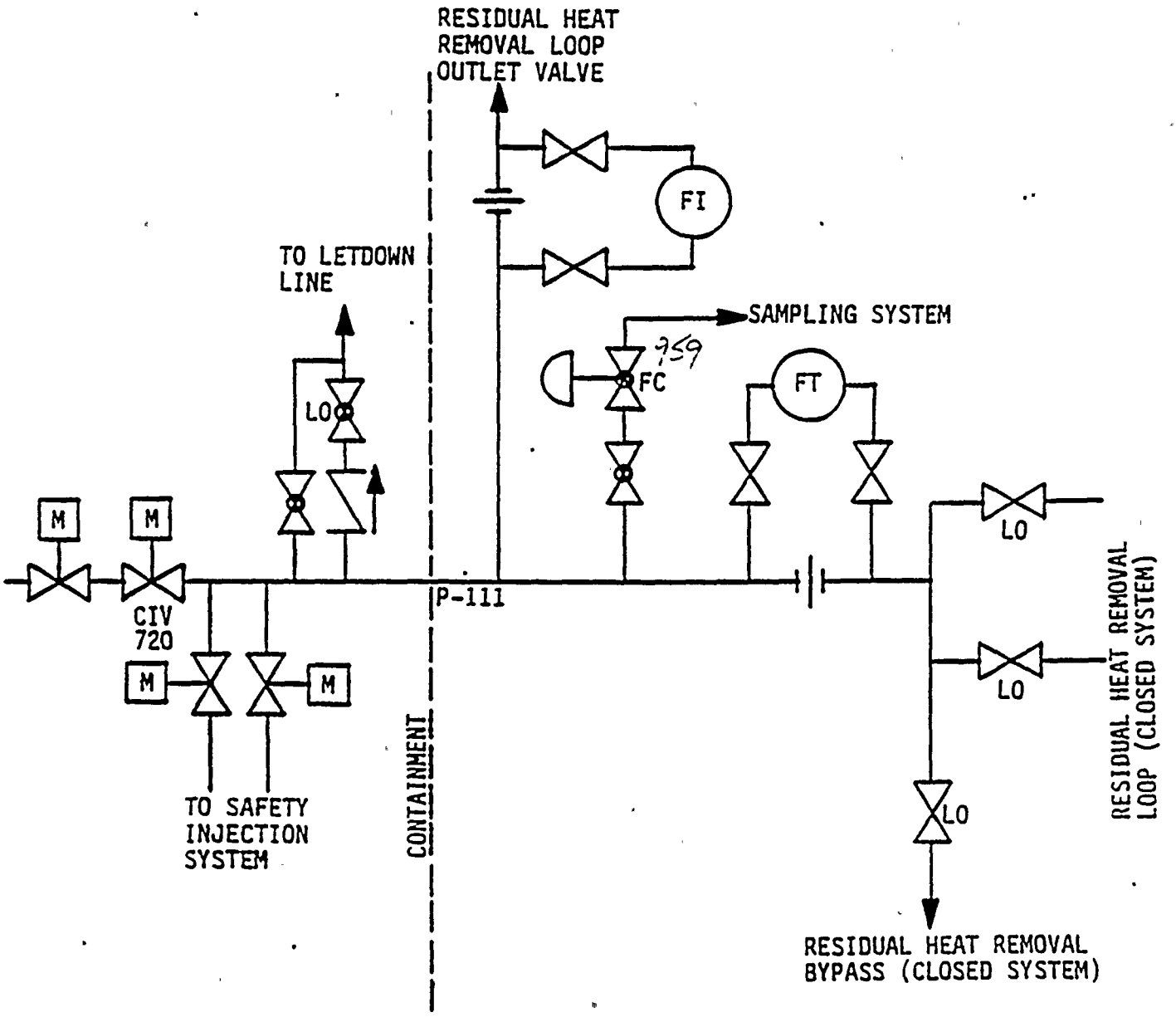

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Figure 6.2-24

Residual Heat Removal to "B"
Cold Leg, Penetration No. 111

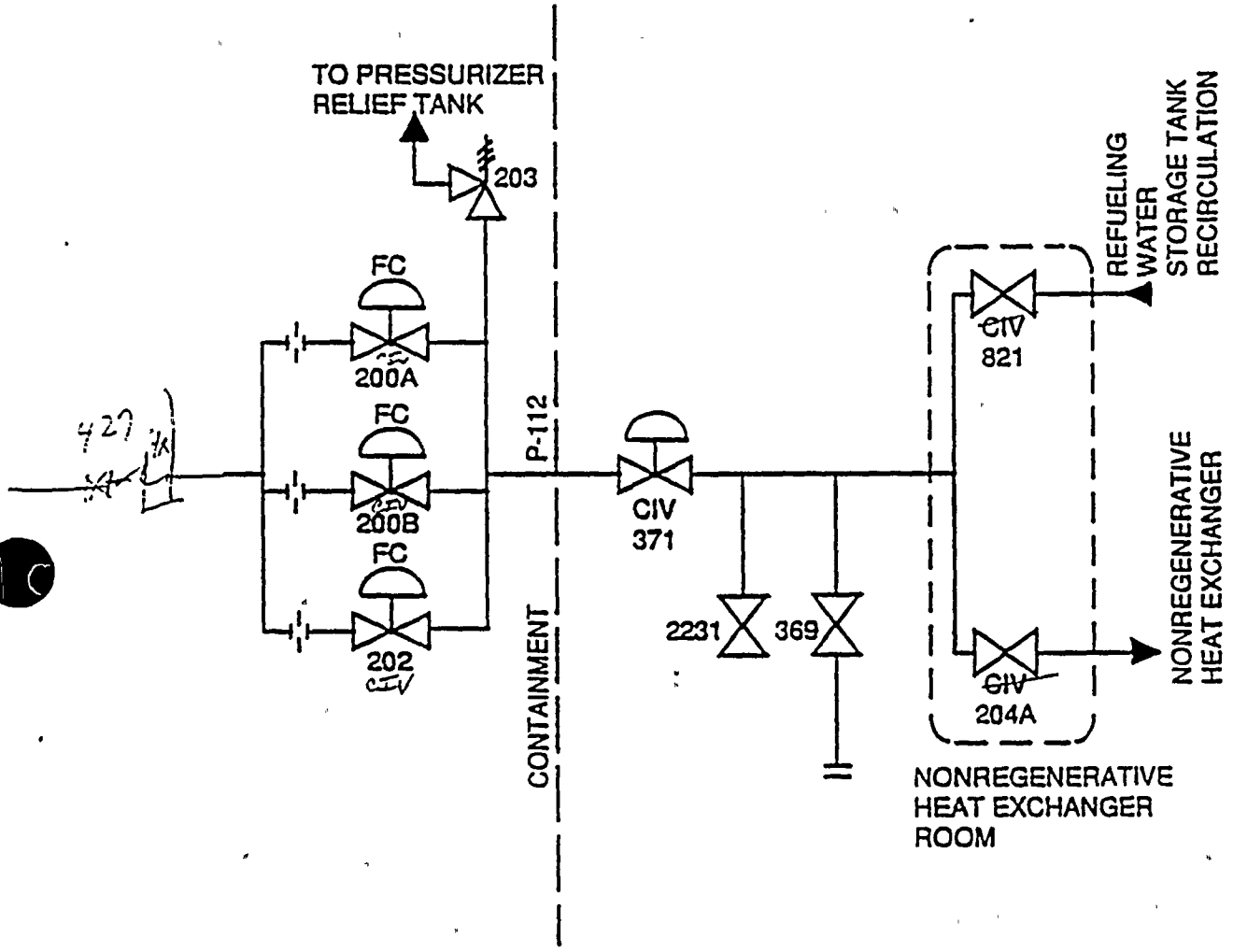

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Figure 6.2-25

Letdown to Nonregenerative Heat Exchanger, Penetration No. 112

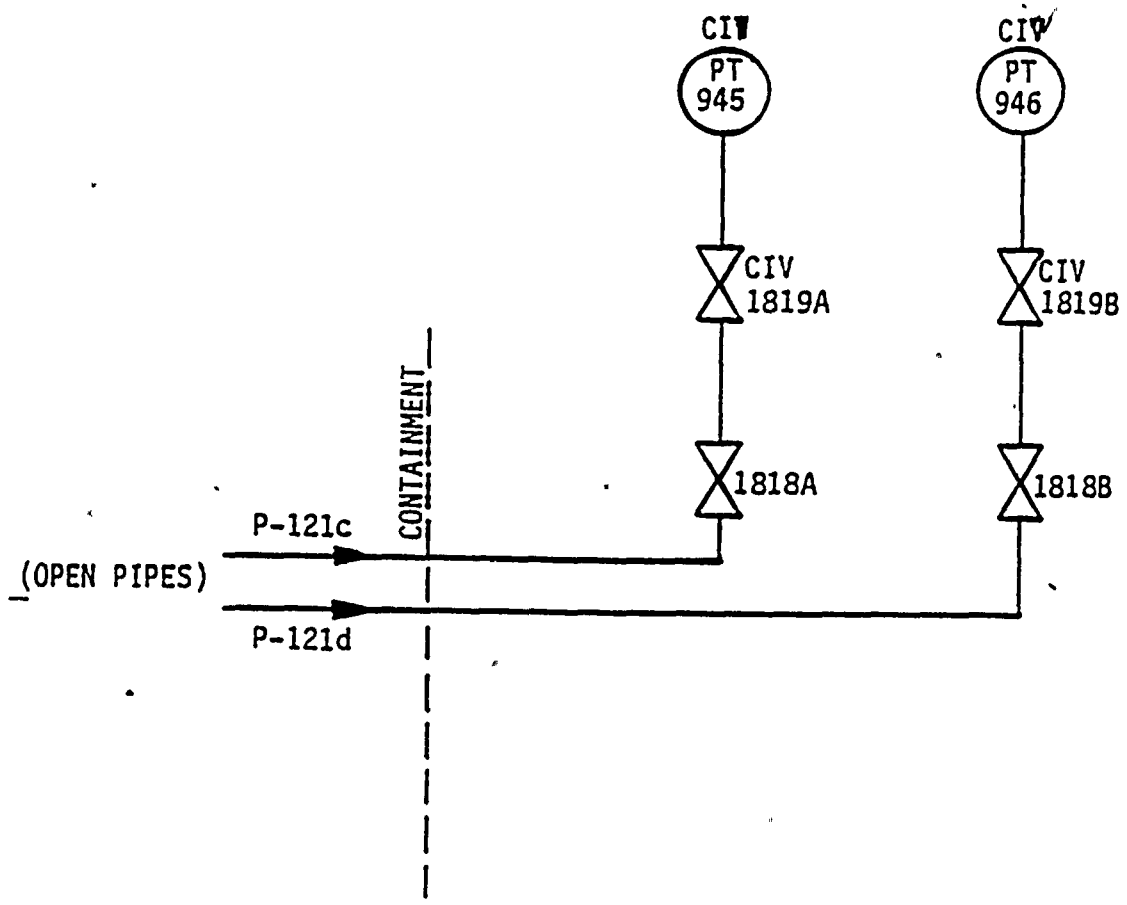

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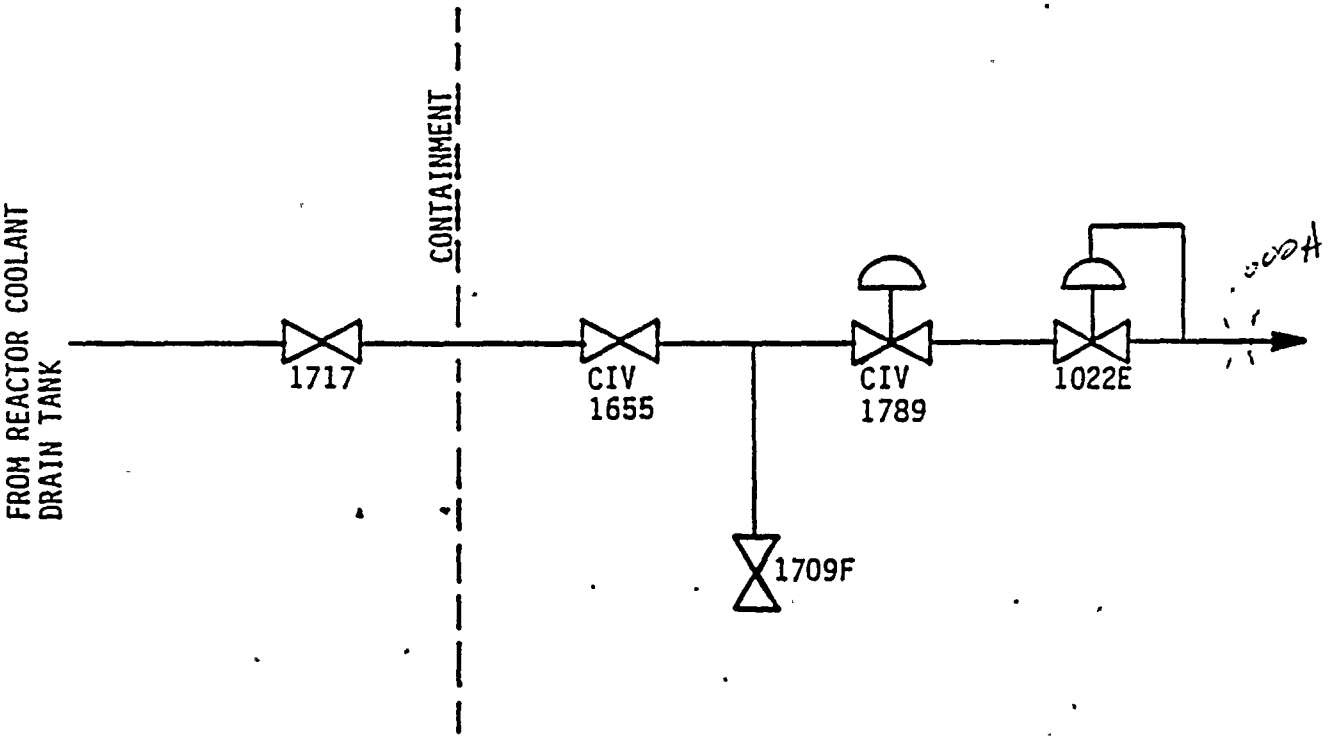
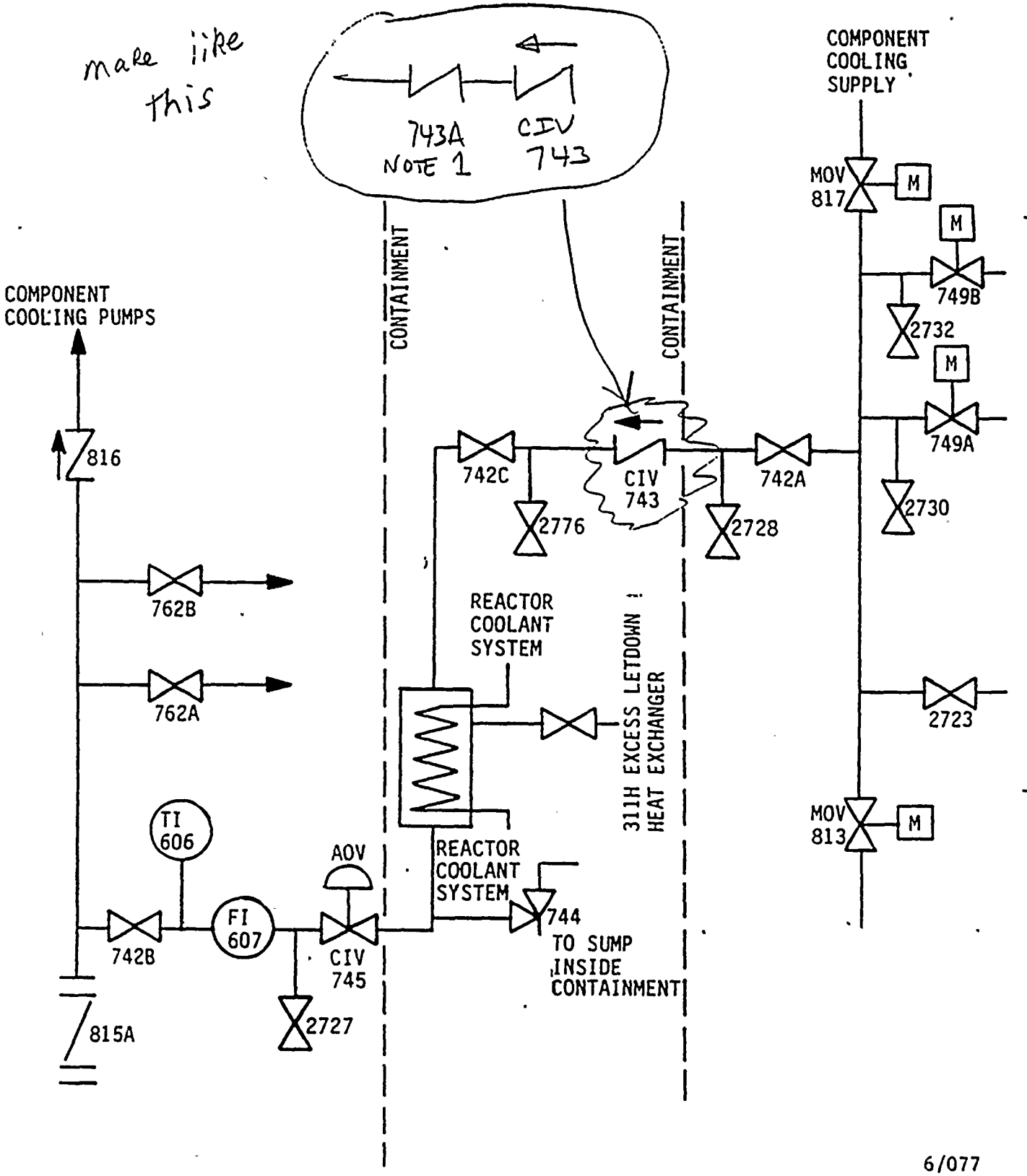
Figure 6.2-31
Containment Pressure Sensing Transmitters, Penetration Nos. 121c and 121d



ROCHESTER GAS AND ELECTRIC CORPORATION R.E. GINNA NUCLEAR POWER PLANT UPDATED FINAL SAFETY ANALYSIS REPORT
Figure 6.2-32 Reactor Coolant Drain Tank Gas Analyzer, Penetration No. 123 (Bottom)

make like this



NOTE 1: VALVE INTERNALS HAVE BEEN PERMANENTLY REMOVED

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Figure 6.2-33

Excess Letdown Heat Exchanger
Cooling Water (Supply & Return),
Penetration No. 124a

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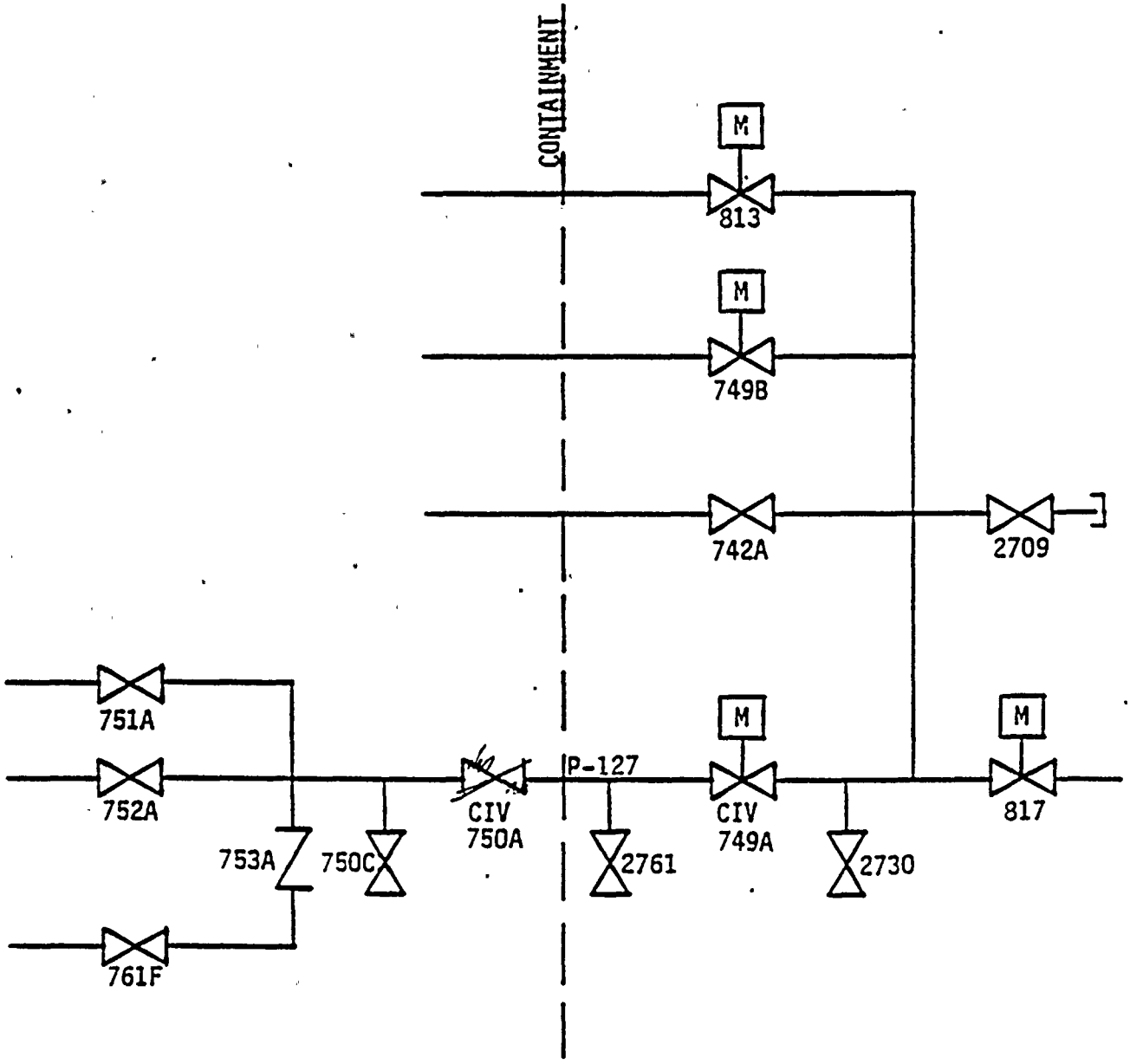

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Figure 6.2-37

Component Cooling Water to Reactor Coolant Pump 1A, Penetration No. 127

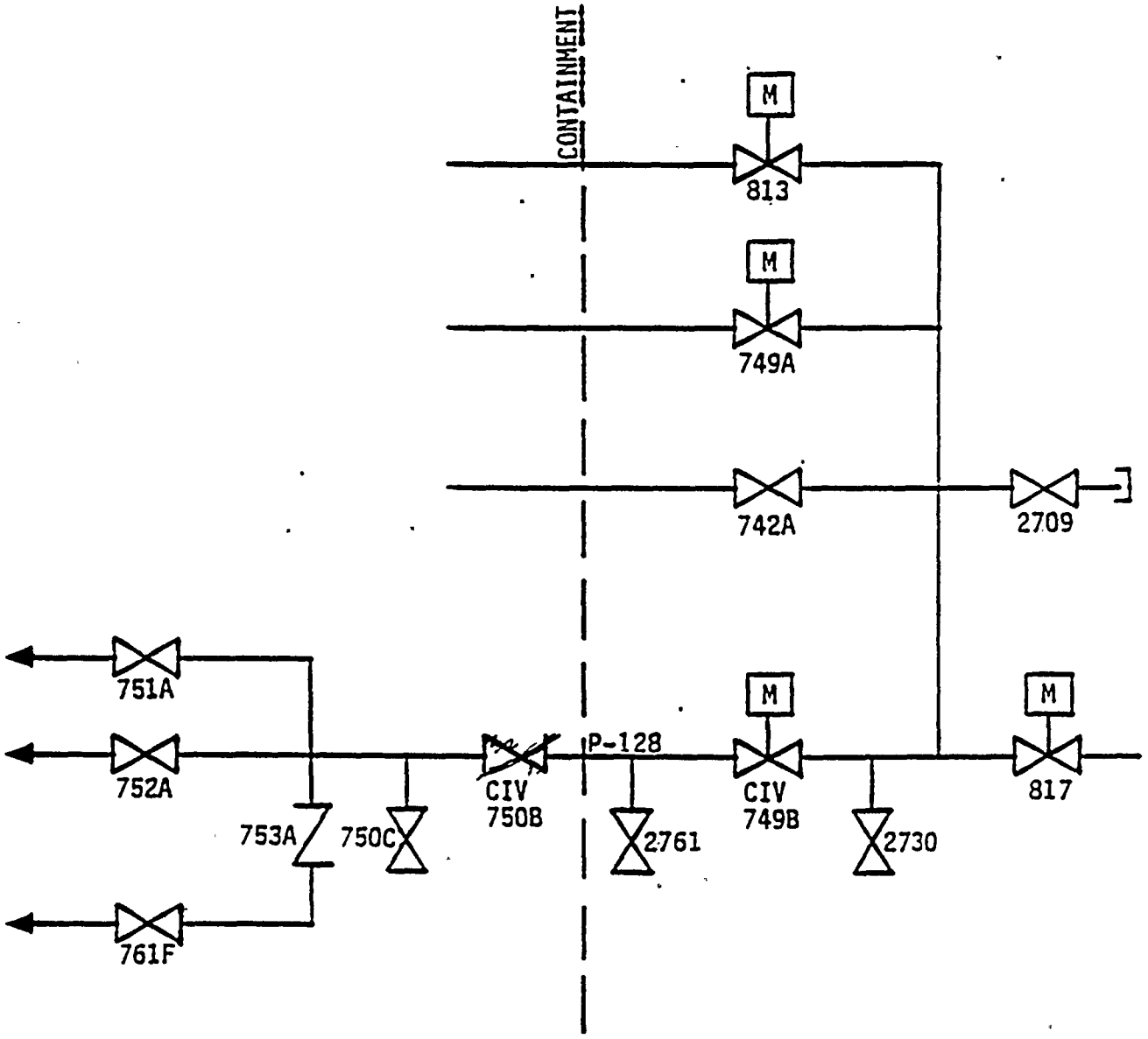

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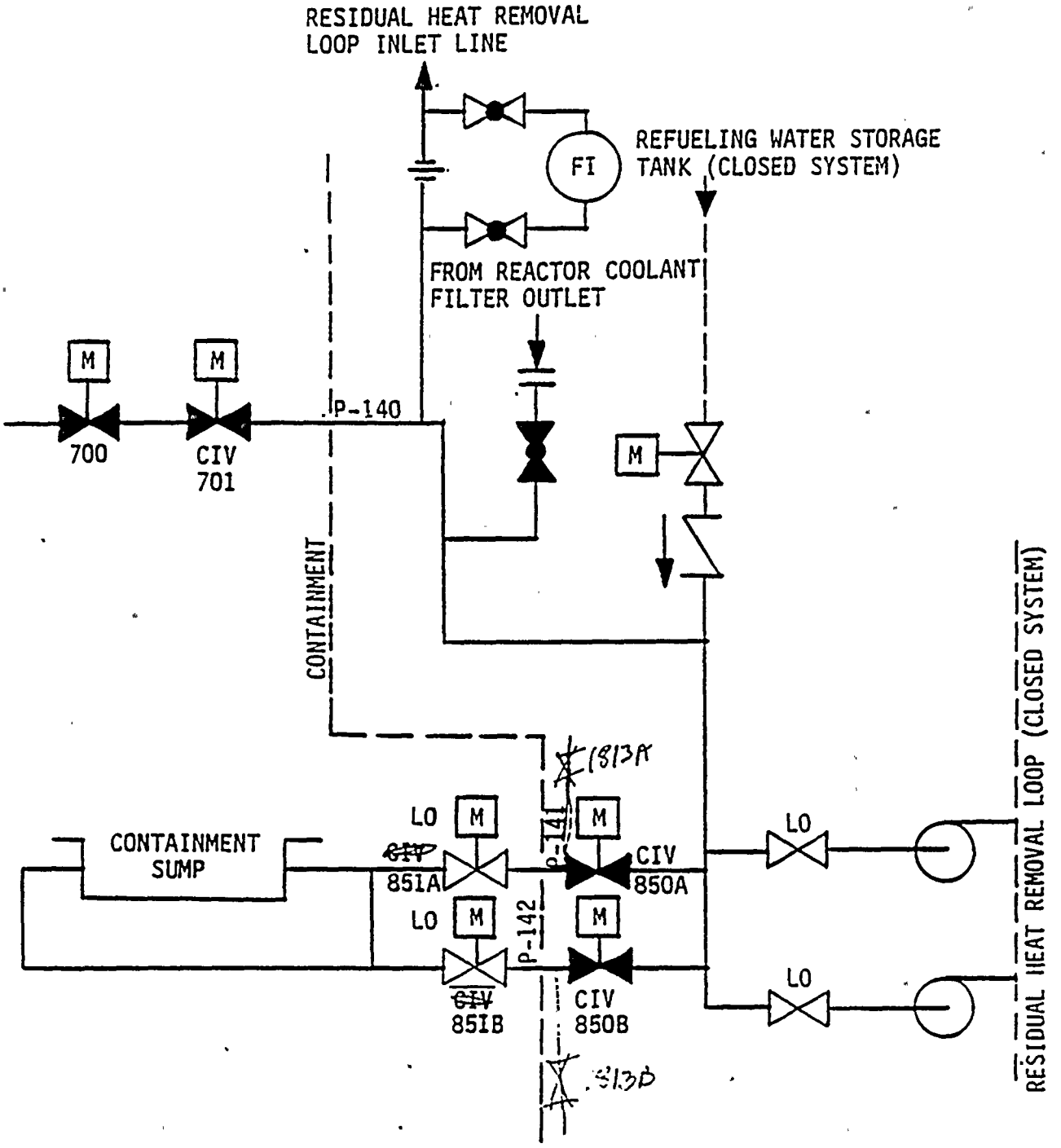
Figure 6.2-38

Component Cooling Water to Reactor Coolant Pump 1B, Penetration No. 128



ROCHESTER GAS AND ELECTRIC CORPORATION R.E. GINNA NUCLEAR POWER PLANT UPDATED FINAL SAFETY ANALYSIS REPORT
Figure 6.2-42 Residual Heat Removal Pump Suctions Penetration Nos. 140, 141, 142

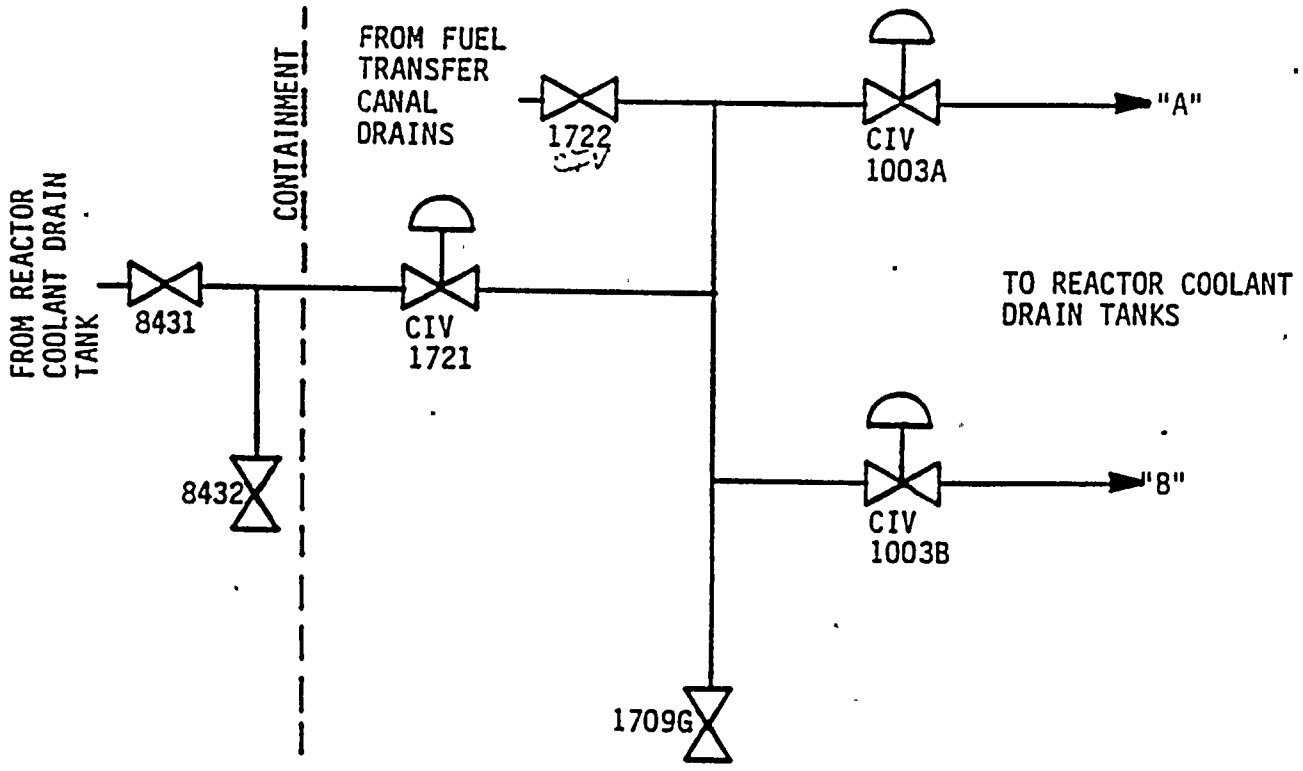


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Figure 6.2-43 Reactor Coolant Drain Tank Discharge Penetration No. 143

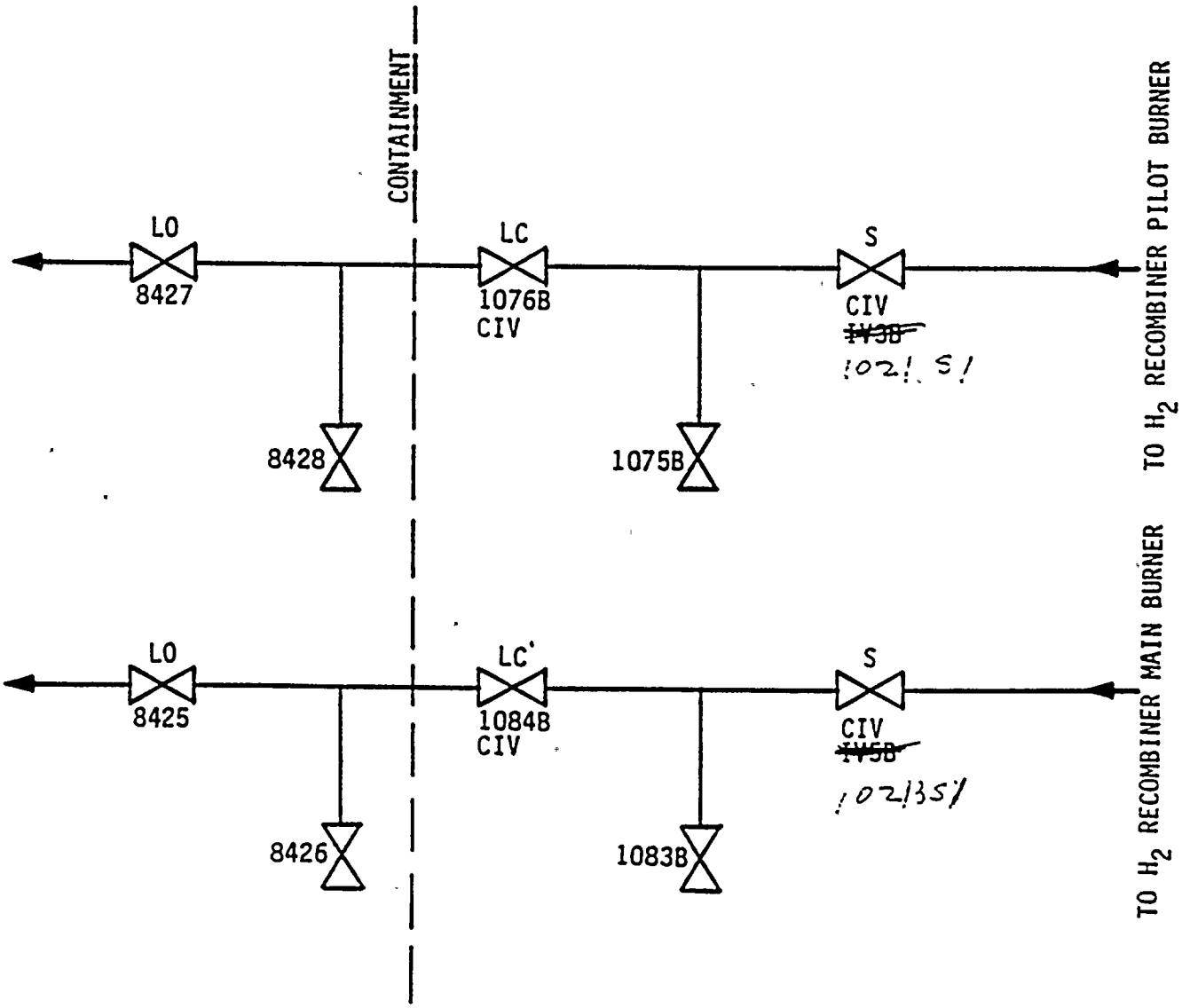

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Figure 6.2-46

"B" Hydrogen Recombiner
(Pilot and Main), Penetration No. 202

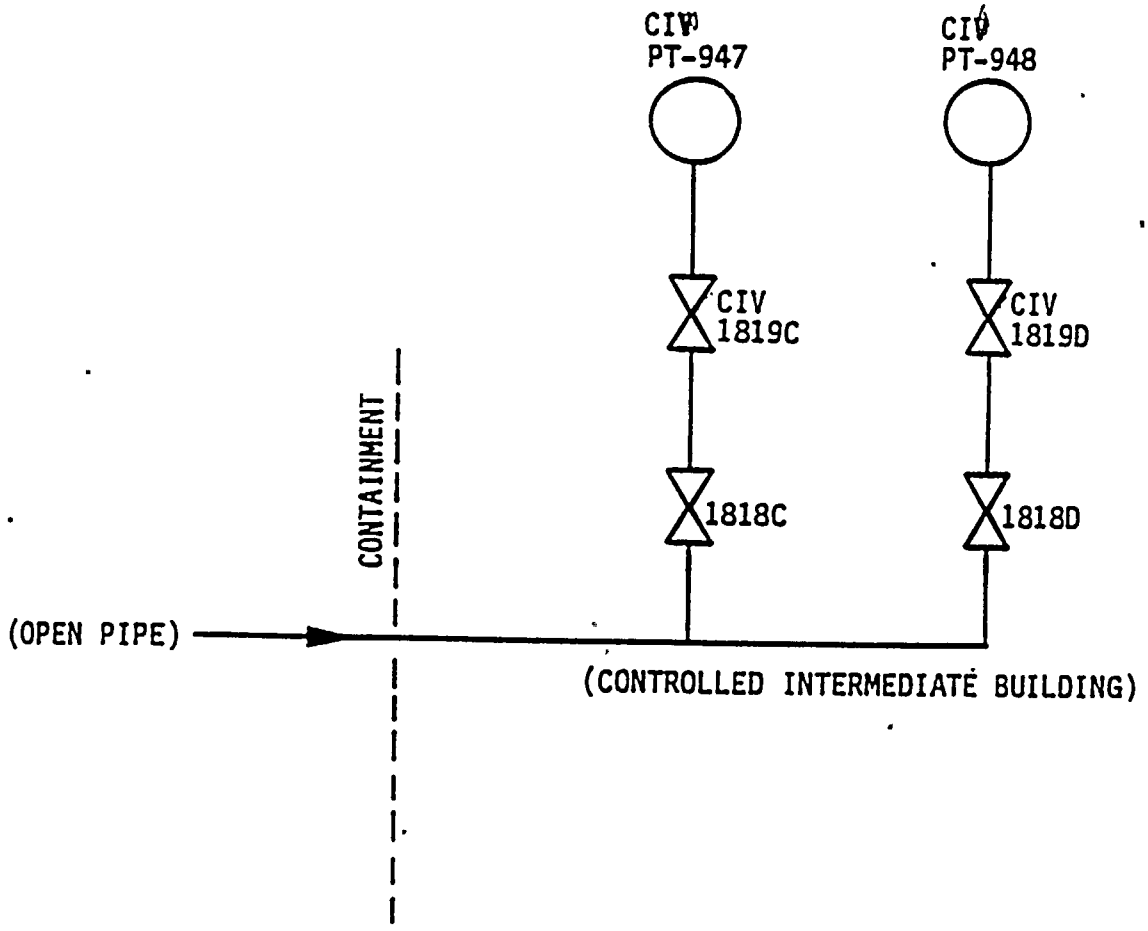

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Figure 6.2-47

Containment Pressure Sensing Transmitters, Penetration No. 203a

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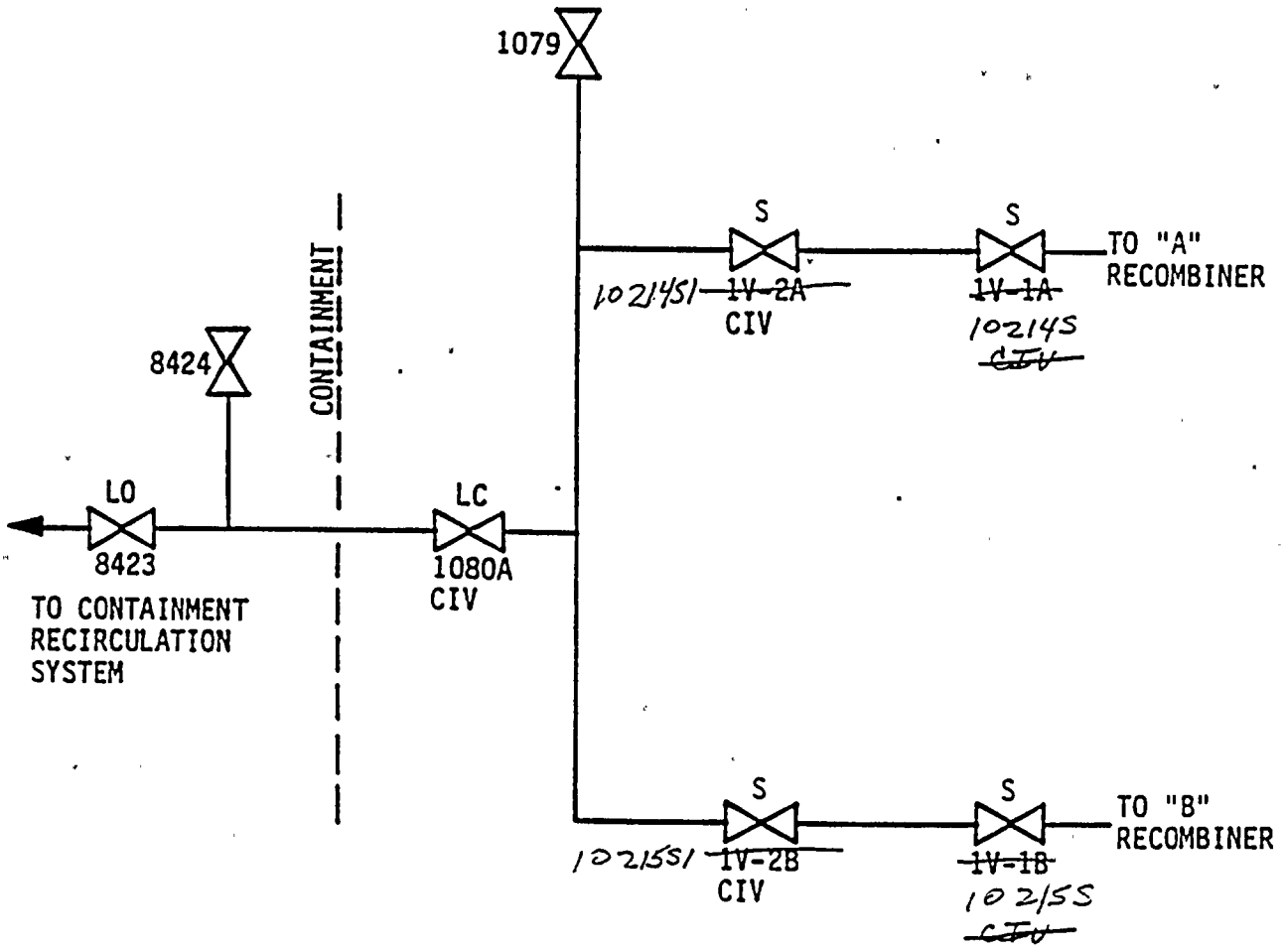

ROCHESTER GAS AND ELECTRIC CORPORATION R.E. GINNA NUCLEAR POWER PLANT UPDATED FINAL SAFETY ANALYSIS REPORT
Figure 6.2-55 "A" and "B" Hydrogen Recombiner Oxygen Makeup, Penetration No. 210

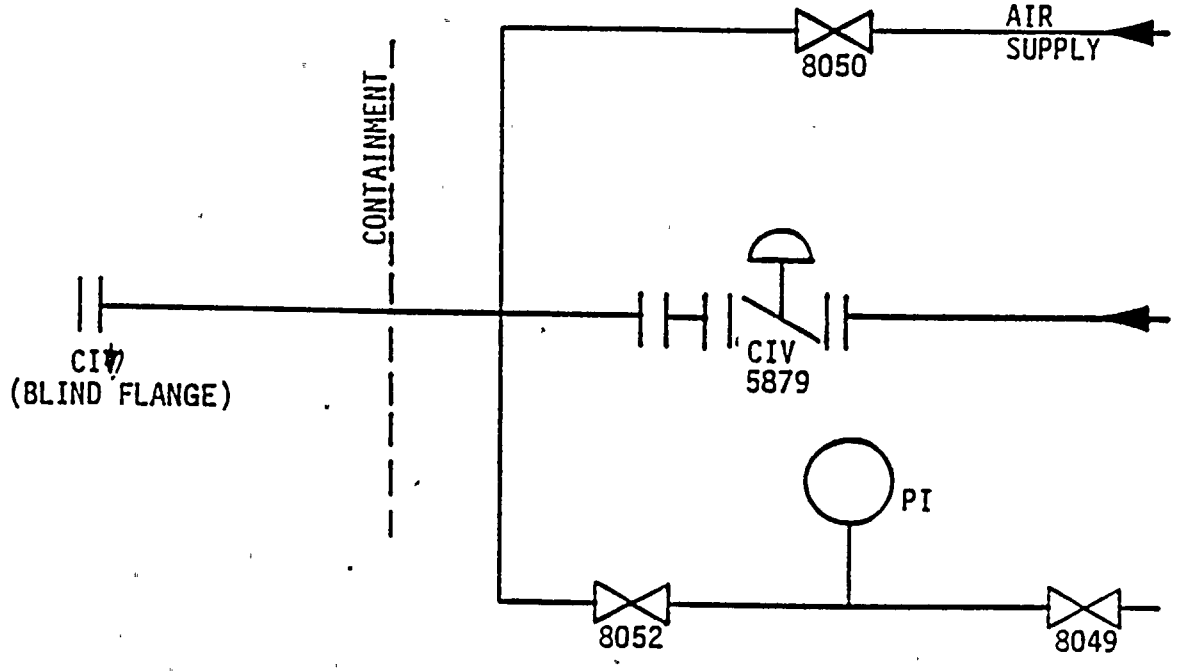

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Figure 6.2-56

Purge Exhaust
Penetration No. 300

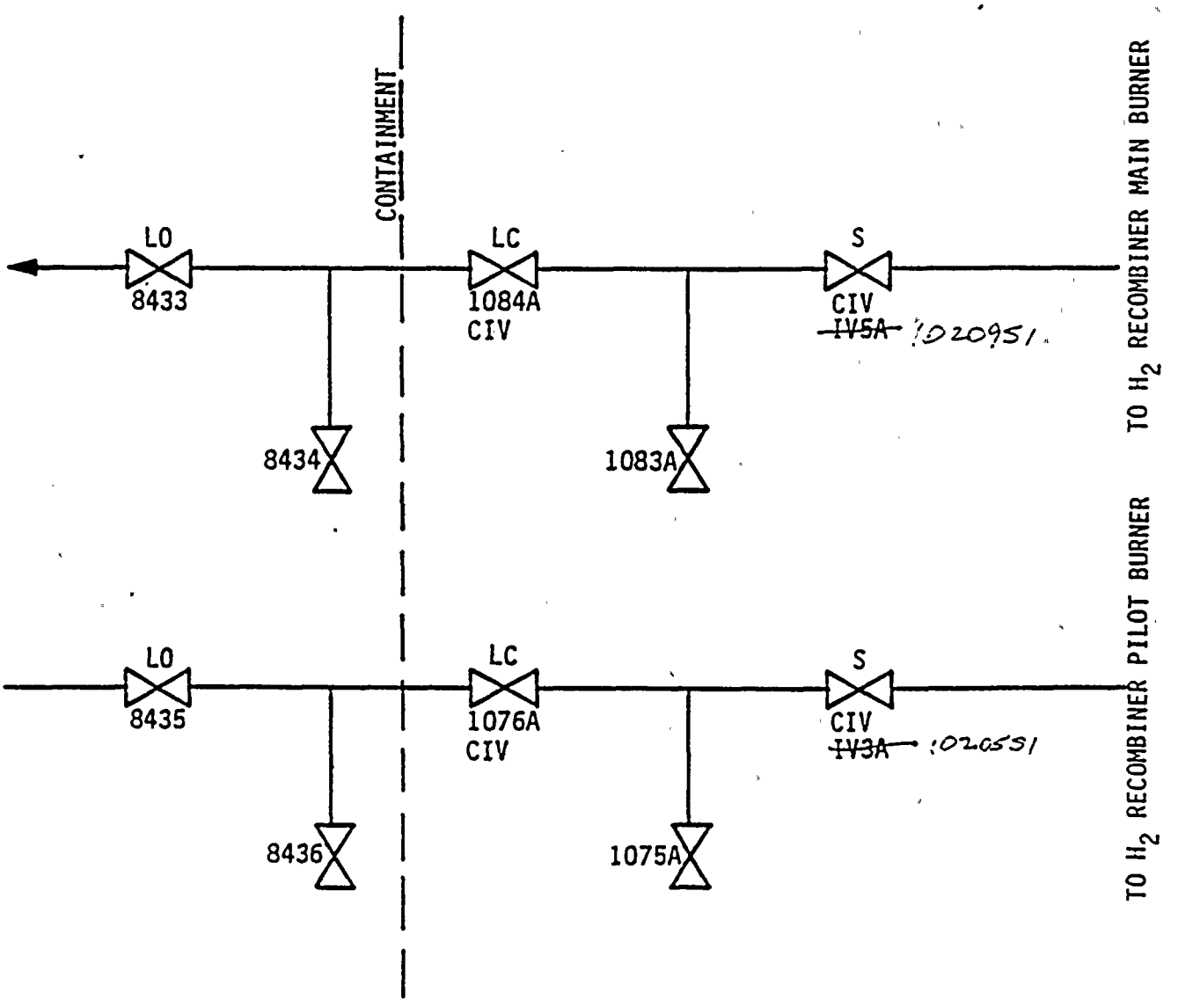

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Figure 6.2-58

"A" Hydrogen Recombiner
(Pilot and Main), Penetration No. 304

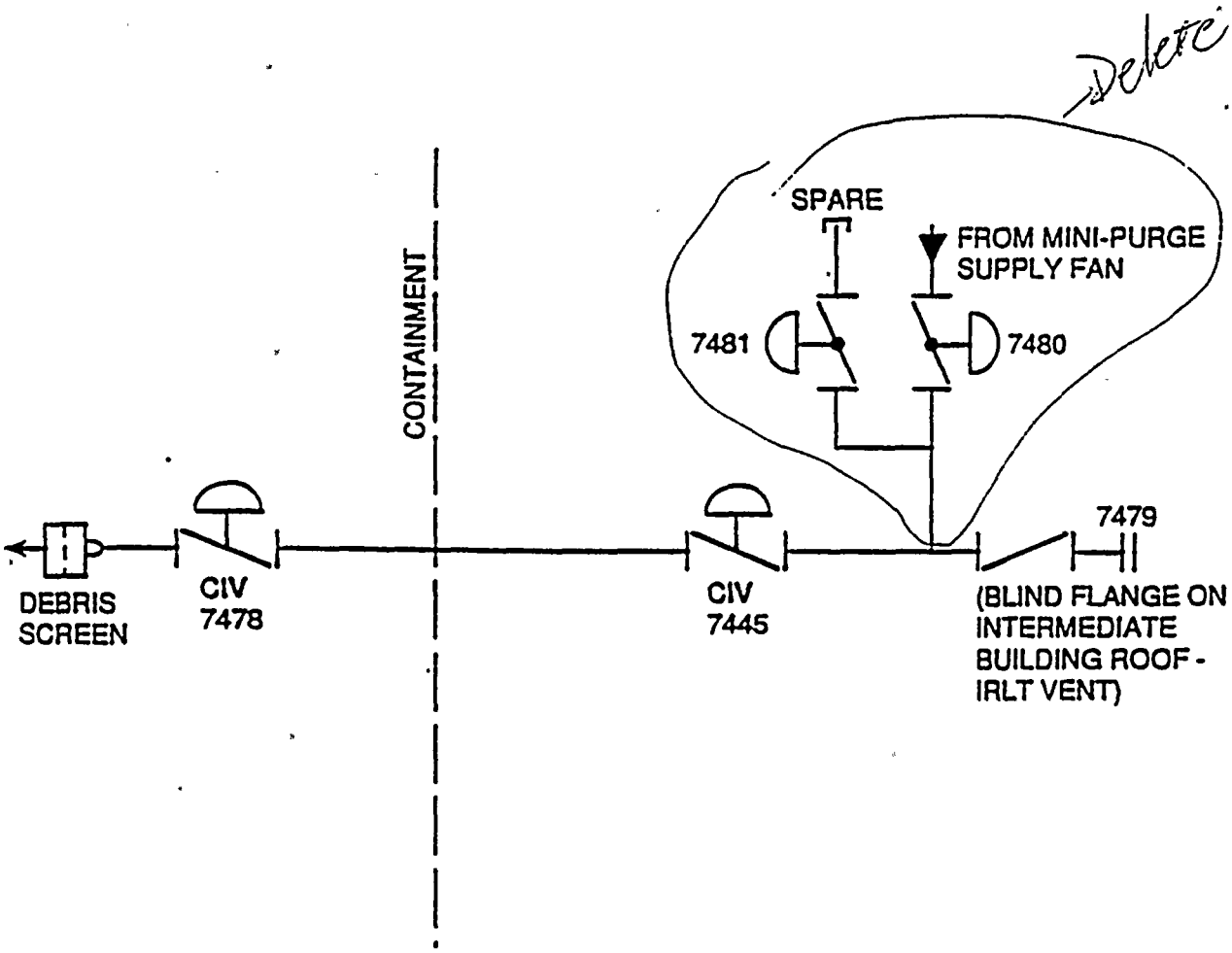

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Figure 6.2-64

Containment Mini-Purge - Supply Penetration No. 309

REV 4 12/88

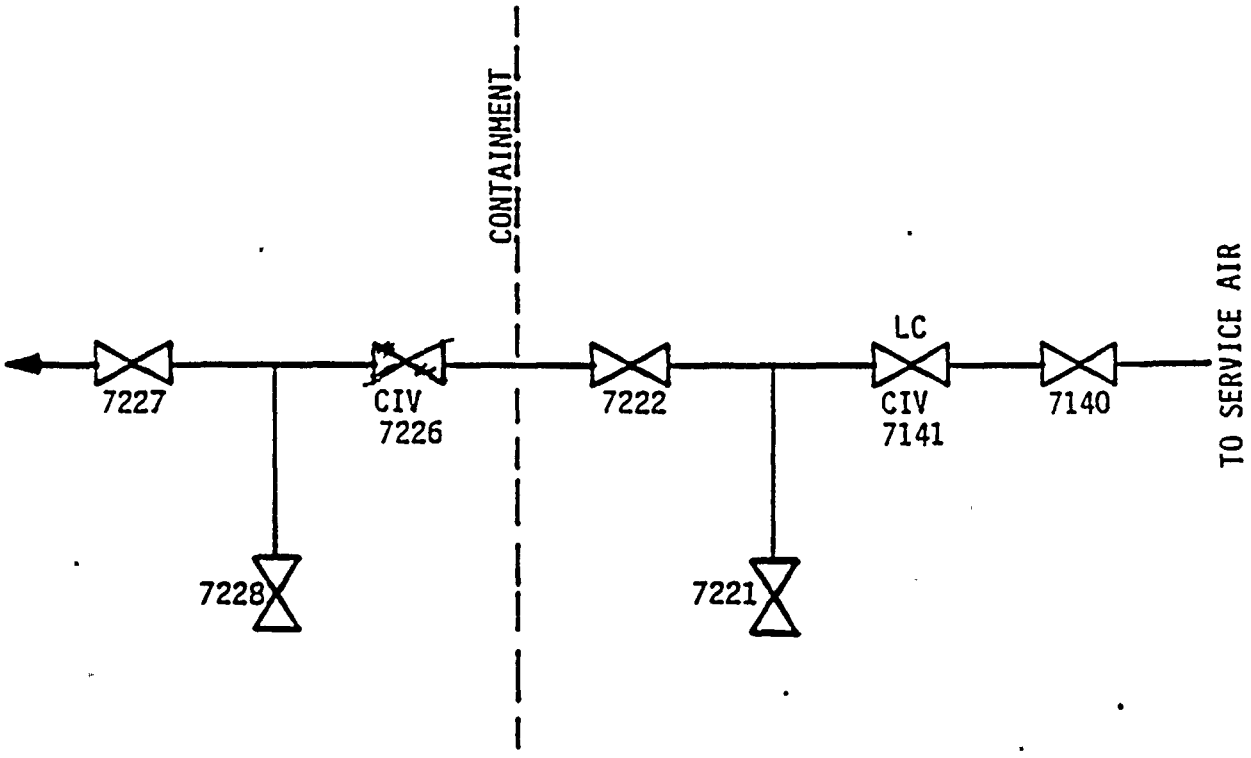

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Figure 6.2-65

Service Air
Penetration No. 310a (Bottom)

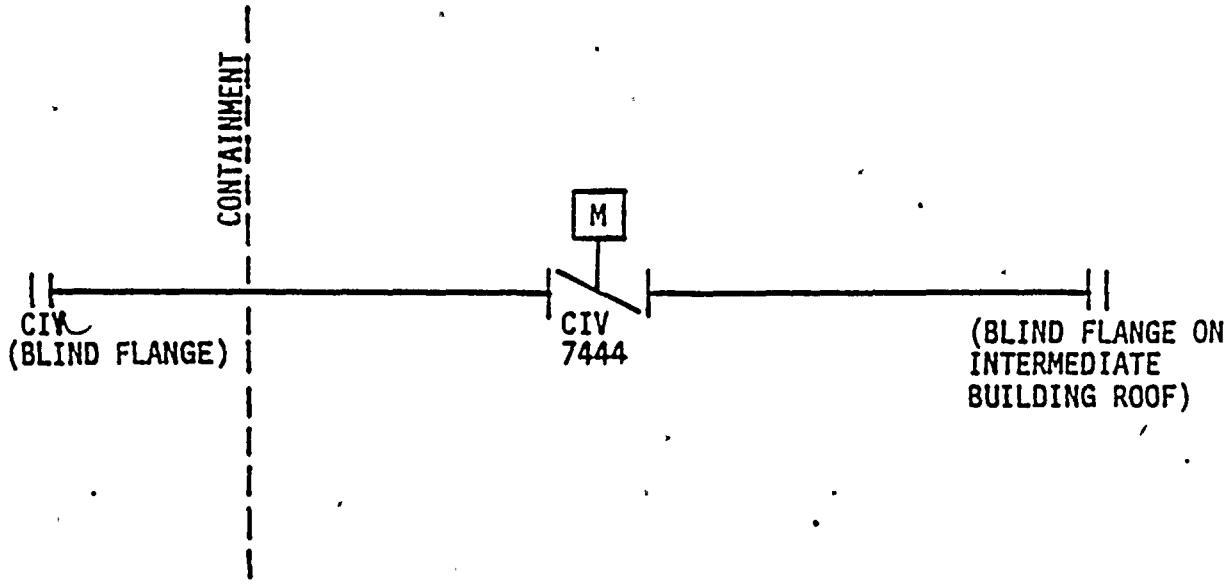

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Figure 6.2-67

Leakage Test - Depressurization
Penetration No. 313

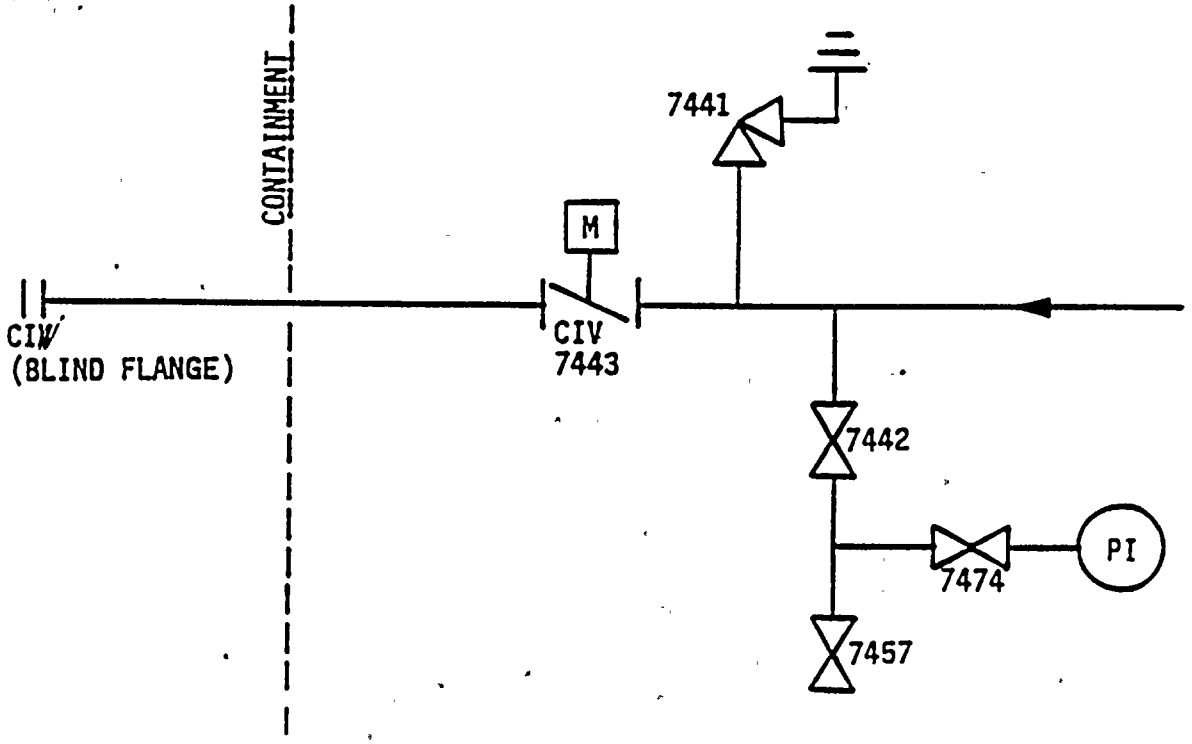

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Figure 6.2-68

Leakage Test-Supply Header
Penetration No. 317

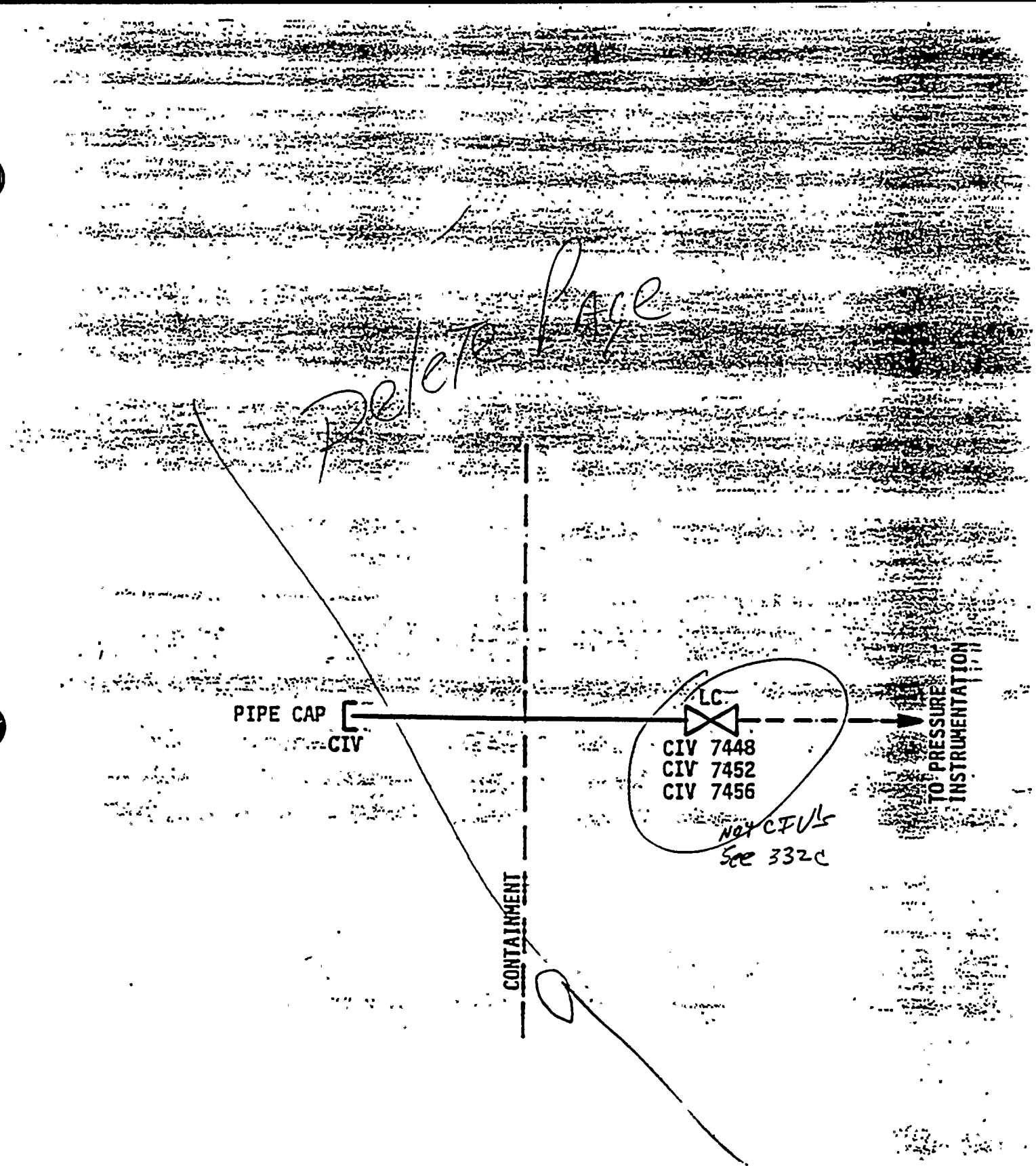

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Figure 6.2-73
Leak Test Instrumentation
Lines, Penetration No. 332b.

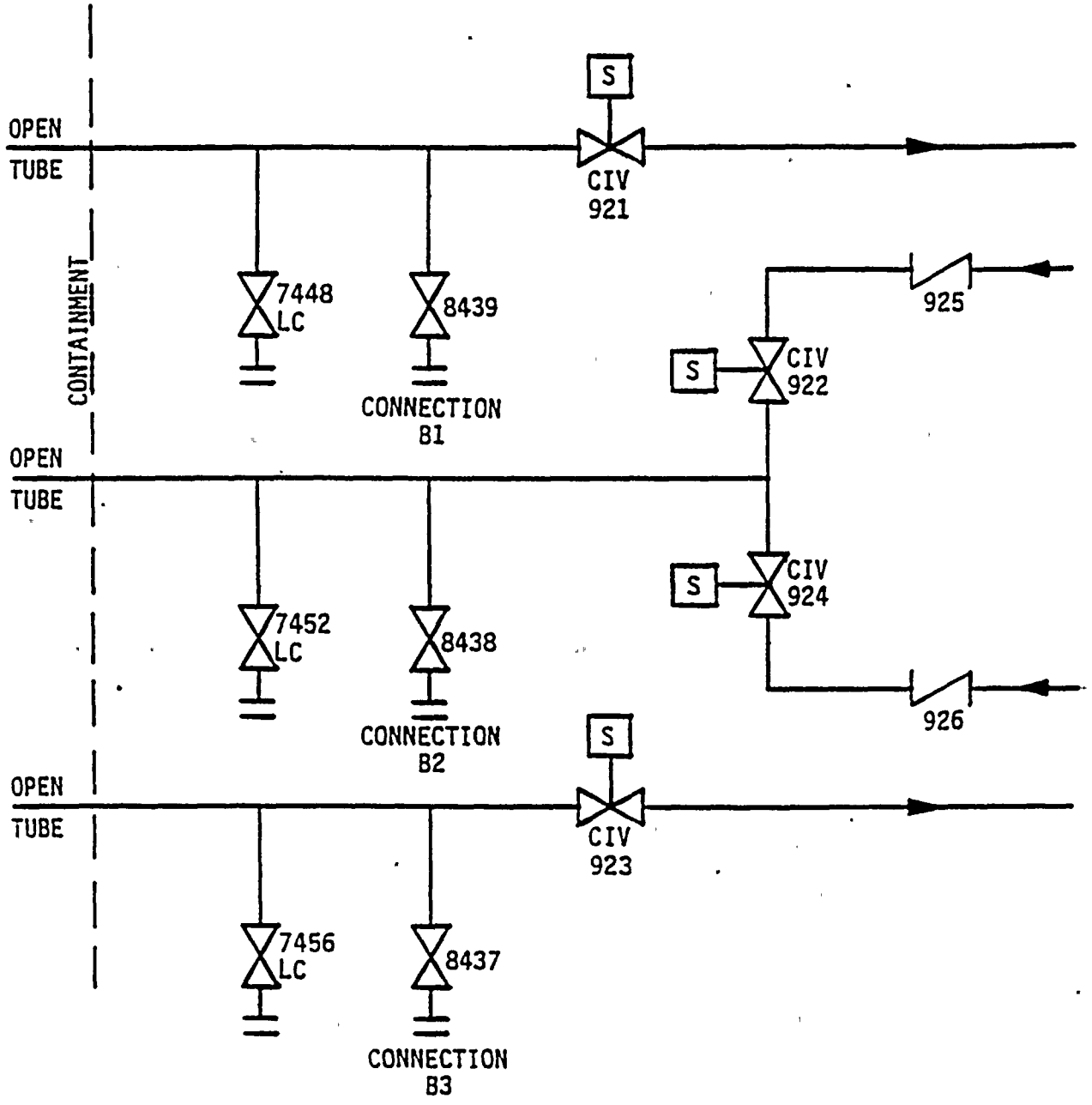

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Figure 6.2-~~34~~ 73

H_2 Monitor Instrumentation Lines
Penetration No. 332c

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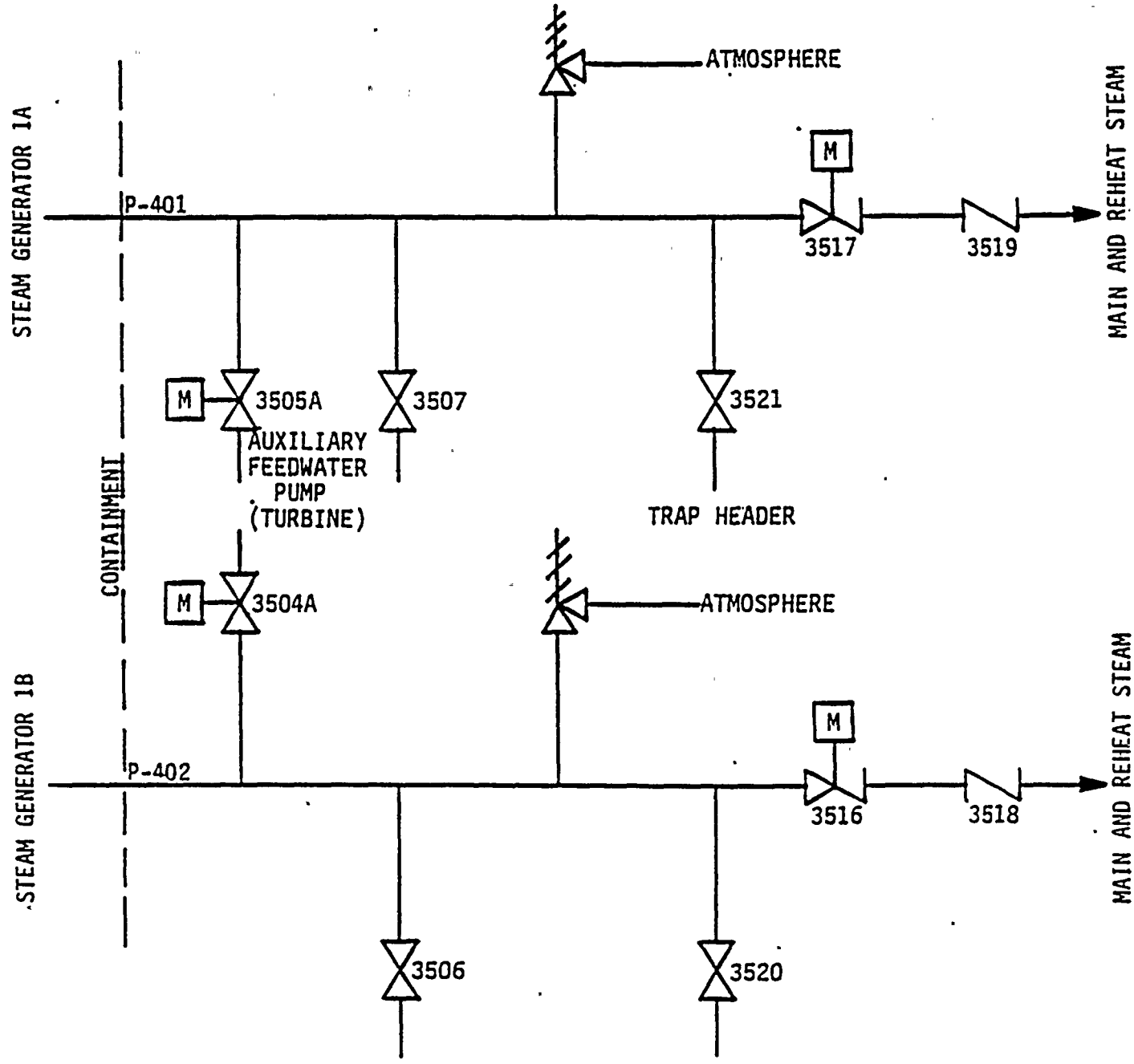

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Figure 6.2-~~38~~ 74

Main Steam Lines
Penetration Nos. 401 and 402

REV 3 12/87

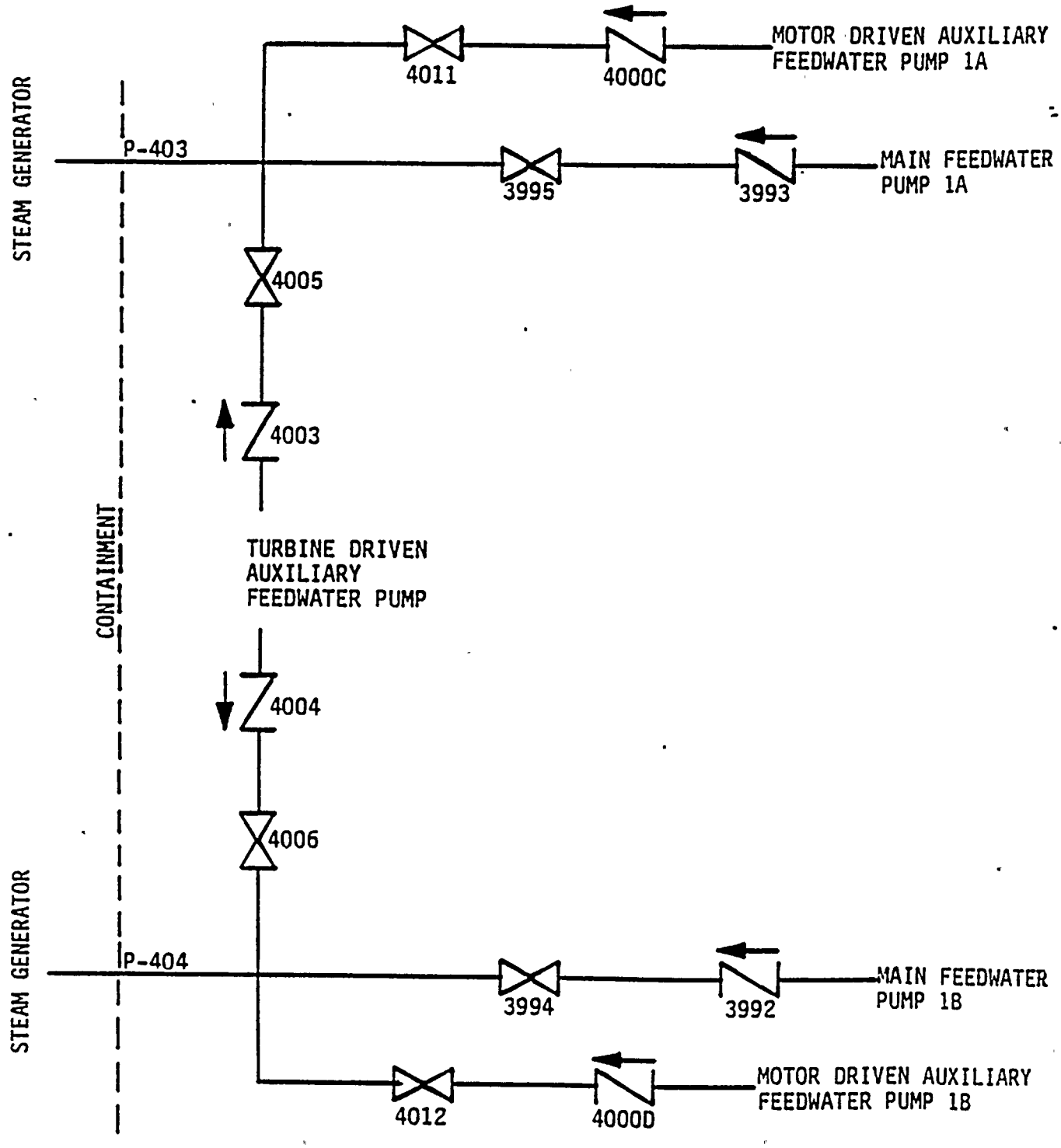

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Figure 6.2-~~76~~ 75

Feedwater Lines, Penetration Nos. 403 and 404

REV 3 12/87

Attachment D

UFSAR Table 6.2-14

Table 6.2-14

EFFECT OF LOSS OF AIR SUPPLY TO AIR-OPERATED VALVES

Penetration No.	System	Valve No.	Receive CIS	Position Following Loss of Air
107	Sump A Discharge to Waste Holdup Tank	1723 1728	Yes Yes	Fails closed Fails closed
111	Residual Heat Removal to B Cold Leg	959	Yes	Fails closed
112	Letdown to Nonregenerative Heat Exchanger	200A 200B 202 371 427	Yes Yes Yes Yes Yes	Fails closed Fails closed Fails closed Fails closed Fails open[a]
120a	Nitrogen to Accumulators	846	Yes	Fails closed
120b	Pressurizer Relief Tank to Gas Analyzer	539	Yes	Fails closed
121b	Makeup Water to Pressurizer Relief Tank	508	Yes	Fails closed
123 (bottom)	Reactor Coolant Drain Tank to Gas Analyzer Line	1789	Yes	Fails closed
124a	Excess Letdown Heat Exchanger Cooling Water Supply & Return	745	No[b]	Fails closed
129	Reactor Coolant Drain Tank and Pressurizer Relief Tank to Containment Vent Header	1786 1787	Yes Yes	Fails closed Fails closed
132	Containment Mini-Purge Exhaust	7970 7971	Yes Yes	Fails closed Fails closed
143	Reactor Coolant Drain Tank Discharge Line	1003A 1003B	Yes Yes	Fails closed Fails closed
204	Purge Supply Duct	5869	Yes	Fails closed
205	Hot Leg Loop Sample	955 966C	Yes Yes	Fails closed[a] Fails closed
206a (top)	Pressurizer Liquid Space Sample	953 966B	Yes Yes	Fails closed[a] Fails closed

Table 6.2-14

EFFECT OF LOSS OF AIR SUPPLY TO AIR-OPERATED VALVES

Penetration No.	System	Valve No.	Receive CIS	Position Following Loss of Air
107	Sump A Discharge to Waste Holdup Tank	1723 1728	Yes Yes	Fails closed Fails closed
111	Residual Heat Removal to B Cold Leg	959	Yes	Fails closed
112	Letdown to Nonregenerative Heat Exchanger	200A 200B 202 371 427	Yes Yes Yes Yes Yes	Fails closed Fails closed Fails closed Fails closed Fails open[a]
120a	Nitrogen to Accumulators	846	Yes	Fails closed
120b	Pressurizer Relief Tank to Gas Analyzer	539	Yes	Fails closed
121b	Makeup Water to Pressurizer Relief Tank	508	Yes	Fails closed
123 (bottom)	Reactor Coolant Drain Tank to Gas Analyzer Line	1789	Yes	Fails closed
124a	Excess Letdown Heat Exchanger Cooling Water Supply & Return	745	No[b]	Fails closed
129	Reactor Coolant Drain Tank and Pressurizer Relief Tank to Containment Vent Header	1786 1787	Yes Yes	Fails closed Fails closed
132	Containment Mini-Purge Exhaust	7970 7971	Yes Yes	Fails closed Fails closed
143	Reactor Coolant Drain Tank Discharge Line	1003A 1003B	Yes Yes	Fails closed Fails closed
204	Purge Supply Duct	5869	Yes	Fails closed
205	Hot Leg Loop Sample	955 966C	Yes Yes	Fails closed[a] Fails closed
206a (top)	Pressurizer Liquid Space Sample	953 966B	Yes Yes	Fails closed[a] Fails closed

Attachment E

UFSAR Table 6.2-15

Table 6.2-15

ESSENTIAL AND NONESSENTIAL SYSTEM
CONTAINMENT PENETRATIONS

Penetration Number	Identification/Description	Essential Versus Nonessential	
2	Steam generator inspection/maintenance	Nonessential	6/502
29	Fuel transfer tube	Nonessential	
100	Charging line to B loop X	Nonessential	
101	Safety injection pump 1B discharge	Essential	
102	Alternate charging to A cold leg X	Nonessential	
103	~~Inactive~~ Construction fire service water	Nonessential	6/502
105	Containment spray pump 1A	Essential	
106	Reactor X coolant pump A seal X water inlet	Essential	
107	Sump A discharge to waste holdup tank	Nonessential	
108	Reactor coolant pump seal water ~~out~~ return line and excess letdown to ~~volume control tank~~ VCT	Nonessential	
109	Containment spray pump 1B	Essential	
110a	Reactor B coolant pump seal X water inlet	Essential	6/502
110b	Safety injection test line	Nonessential	
111	Residual heat removal to cold leg B	Essential	
112	Letdown to nonregenerative heat exchanger	Nonessential	
113	Safety injection pump 1A discharge	Essential	
120a	Nitrogen to accumulators	Nonessential	
120b	Pressurizer relief tank to gas analyzer	Nonessential	
121a	Nitrogen to pressurizer relief tank	Essential	
121b	~~Reactor~~ Makeup water to pressurizer relief tank	Nonessential	6/502
121c	Containment pressure transmitter PT-945	Essential	
121d	Containment pressure transmitter PT-946	Essential	
123 (bottom)	Reactor coolant drain tank to gas analyzer	Nonessential	
124a	Excess letdown ~~supply and return to~~ heat exchanger, cooling water supply & return	Nonessential	6/502
124b	Postaccident air sample C fan	Nonessential	
125	Component cooling water from 1B reactor coolant pump B	Essential	
126	Component cooling water from 1A reactor coolant pump A	Essential	
127	Component cooling water to 1A reactor coolant pump A	Essential	
128	Component cooling water to 1B reactor coolant pump B	Essential	
129	Reactor coolant drain tank and pressurizer relief tank to containment vent header	Nonessential	
130	Component cooling water to reactor support cooling from	Nonessential	
131	Component cooling water to reactor support cooling	Nonessential	
132	~~Depressurization at power~~ Containment mini-purge exhaust	Nonessential	
140	Residual heat removal pump suction from A hot leg X	Essential	

Table 6.2-15

ESSENTIAL AND NONESSENTIAL SYSTEM
CONTAINMENT PENETRATIONS (Continued)

Penetration Number	Identification Description	Essential Versus Nonessential	
141	Residual heat removal No. 1 pump suction from sump B	Essential	
142	Residual heat removal No. 2 pump suction from sump B	Essential	
143	Reactor coolant drain tank ~~pump suction~~ discharge line	Nonessential	
201	Reactor compartment cooling units A and B	Essential	
202	B Hydrogen recombiner (pilot and main) B	Nonessential	
203a	Containment pressure transmitter PT-947 and 948	Essential	6/502
203b	Postaccident air sample to B fan	Nonessential	
204	Purge supply duct	Nonessential	
205	Hot leg loop sample	Nonessential	
206a	Pressurizer liquid space sample	Nonessential	
206b	A steam generator sample	Nonessential	6/502
207a	Pressurizer steam space sample	Nonessential	
207b	B steam generator sample	Nonessential	
209	Reactor compartment cooling units A and B	Essential	
210	Oxygen makeup to A and B recombiners	Nonessential	
300	Purge exhaust duct	Nonessential	
301	Auxiliary steam supply to containment	Nonessential	
303	Auxiliary steam condensate return	Nonessential	
304	A Hydrogen recombiner (pilot and main) ~~to A~~	Nonessential	
305a	~~Containment air sample out~~	Nonessential	
305b	Containment air sample inlet	Nonessential	6/067
305c	Containment air sample postaccident	Nonessential	502
307	Fire service water	Nonessential	
308	Service water to A fan cooler	Essential	
309	~~Leakage test depressurization~~ mini-purge supply	Nonessential	
310a	Service air to containment	Nonessential	
310b	Instrument air to containment	Nonessential	6/502
311	Service water from B fan cooler	Essential	
312	Service water to D fan cooler	Essential	
313	Leakage test depressurization	Nonessential	
315	Service water from C fan cooler	Essential	
316	Service water to B fan cooler	Essential	
317	Leakage test supply	Nonessential	
318	Dead weight tester	Nonessential	
319	Service water from A fan cooler	Essential	
320	Service water to C fan cooler	Essential	
321	A steam generator blowdown	Nonessential	
322	B steam generator blowdown	Nonessential	
323	Service water from D fan cooler	Essential	
324	Demineralized water to containment	Nonessential	

Table 6.2-15

ESSENTIAL AND NONESSENTIAL SYSTEM
CONTAINMENT PENETRATIONS (Continued)

Penetration Number	Identification Description	Essential Versus Nonessential
332a	Containment pressure transmitters PT-944, 949, and 950	Essential
~~332b~~	~~Leakage test instrumentation lines~~	~~Nonessential~~ 6/502
332c	Hydrogen monitor instrumentation lines	Nonessential
401	Main steam from A steam generator	Nonessential
402	Main steam from B steam generator	Nonessential
403	Feedwater line to A steam generator	Essential[a]
404	Feedwater line to B steam generator	Essential[a]
1000	Personnel hatch	Nonessential
2000	Equipment hatch	Nonessential

[a]Used for auxiliary feedwater.

119	Standby Auxiliary feedwater to steam generator 1A
123 (top)	Standby auxiliary feedwater to steam generator 1B

Table 1
Technical Specification Changes

Changes		Effect
1.	Removed reference to Table 3.6-1 from Technical Specification 3.6.3.1.	No technical change.
2.	Table 3.6-1 removed from Technical Specifications and information placed in UFSAR Table 6.2-13.	Valve listing remains in a licensee controlled document under 10CFR50.59 program.
3.	Revised action statement of Technical Specification.	No technical change. Consistency with Standard Technical Specifications.
4.	Revised inoperability definition of Technical Specification 3.6.3.1.	No technical change. Clarification only consistent with 10CFR50 Appendix J.
5.	Removed note associated with Technical Specification 3.6.5.	Mini-purge valves have been installed so the Technical Specification can be considered effective. No technical change.
6.	Added statement that containment isolation valves are listed in UFSAR Table 6.2-13 to Basis for Technical Specification 3.6.	No technical change. Consistency with Standard Technical Specifications.
7.	Added definition of "isolation boundary" to Basis for Technical Specification 3.6.	No technical change. Clarification of "isolation boundary" provides consistency with UFSAR Table 6.2-13.
8.	Changed Reference 2 of the Basis for Technical Specification 3.6 to "UFSAR Section 3.8.1.2.2."	No technical change. The current reference is to the FSAR which has been superseded by the UFSAR.
9.	Added "Pt" and necessary definitions to Technical Specification 4.4.1.4 section a.	Addition of "Pt" provides clarification of testing type consistent with 10CFR50, Appendix J. All terms in 4.4.1.4, section a now fully defined. No technical change.
10.	Added to the definition of "Lt" in Technical Specification 4.4.1.4 section b.	Added definition "Lt" provides clarification consistent with 10CFR50, Appendix J. All terms in 4.4.1.4, section b now fully defined. No technical change.

11.	Added definition of "Pa" and "Lam" in Technical Specification 4.4.1.4 section c.	Addition of "Pa" and "La" provides clarification consistent with 10 CFR 50, Appendix J. All terms in 4.4.1.4, section c now fully defined. No technical change.
12.	Added steam generator inspection/maintenance penetration to Technical Specification 4.4.1.5 section a (ii).	Addition of this penetration provides testing criteria similar to the equipment hatch and containment air locks.
13.	Revised first line of Technical Specification 4.4.1.5, section a (ii).	Minor clarification only. No technical change.
14.	Removed notes associated with Technical Specification 4.4.2.4 section a. Deleted reference to section d.	Mini-purge valves have been installed so the Technical Specification can be considered effective. Section d will be removed from Technical Specifications. No technical change.
15.	Added steam generator inspection/maintenance penetration to Technical Specification 4.4.2.4 section b.	Addition of this penetration provides testing criteria similar to the equipment hatch and containment air locks.
16.	Removed Technical Specification 4.4.2.4 section d and associated note.	Blind flanges have been installed so the Technical Specification can be considered effective. No technical change.
17.	Removed reference to Table 3.6-1 from Technical Specification 4.4.5.1 and revised statement.	Valve listing remains in a licensee controlled document under 10CFR50.59 program. Consistency with Standard Technical Specifications.
18.	Removed reference to Table 3.6-1 from Technical Specification 4.4.6.2 and revised statement.	Valve listing remains in a licensee controlled document under 10CFR50.59 program. Consistency with Standard Technical Specifications.

Attachment C

UFSAR Section 6.2.4 and Figures

of postulated accidents. Therefore, this section is not applicable to Ginna Station.

6.2.4 CONTAINMENT ISOLATION SYSTEM

6.2.4.1 Design Criteria

The following design criteria were used during the licensing of Ginna Station. They represent the AIF version of proposed criteria issued by the AEC for comment on July 10, 1967 (see Section 3.1.1). Conformance with 1972 General Design Criteria (GDC) of 10 CFR 50, Appendix A, is discussed in Section 3.1.2. The criteria discussed in Section 3.1.2 as they apply to the containment isolation system include 54, 55, 56, and 57. The more recent SEP evaluation of the design against these criteria is discussed in Section 6.2.4.3.1.

Criterion: Penetrations that require closure for the containment function shall be protected by redundant valving and associated apparatus (AIF-GDC 53).

Isolation valves for all fluid system lines penetrating the containment provide at least two barriers for redundancy against leakage of radioactive fluids to the environment in the event of a loss-of-coolant accident. These barriers, in the form of isolation valves or closed systems, are defined on an individual line basis. In addition to satisfying containment isolation criteria, the valving is designed to facilitate normal operation and maintenance of the systems and to ensure reliable operation of other engineered safety features.

With respect to numbers and locations of isolation valves and barriers, the criteria applied are generally those outlined by the five classes described in Section 6.2.4.4.

Criterion: Capability shall be provided to the extent practical for testing functional operability of valves and associated apparatus essential to the containment function for establishing that no failure has occurred and for determining that valve leakage does not exceed acceptable limits (AIF-GDC 57).

Capability is provided to the extent practical for testing the functional operability of valves and associated apparatus during periods of reactor shutdown. The isolation valves are also subject to periodic type C leak rate tests as required by 10 CFR 50, Appendix J.

6.2.4.2 Design Basis

6.2.4.2.1 Functional Requirements | 6

The function of the containment isolation system is to isolate the non-essential process lines that penetrate the containment to ensure that the total leakage of activity will be within design limits in the event of an accident. The system consists of many valves and the logic and circuitry necessary to automatically close these valves on a containment isolation signal. ~~The safety injection and main feedwater lines and all major nonessential lines that penetrate the containment, except the fuel transfer tube and the main steam lines, have automatic isolation valves.~~ | 6

All non-essential lines that penetrate the containment and which are open during normal operation, have automatic isolation valves, except for line 100 (charging line to B loop) and the main steam lines.

Each system whose piping penetrates the containment leakage limiting boundary is designed to maintain or establish isolation of the containment from the outside environment under any accident for which isolation is required, and assuming a coincident independent single failure or malfunction occurring in any active system component within the isolated bounds.

Piping penetrating the containment is designed for pressures at least equal to the containment design pressure. Containment isolation valves are provided as necessary in lines penetrating the containment to ensure that no unrestricted release of radioactivity can occur. Such releases might be due to rupture of a line within the containment concurrent with a loss-of-coolant accident or due to rupture of a line outside the containment which connects to a source of radioactive fluid within the containment.

In general, isolation of a line outside the containment protects against rupture of the line inside concurrent with a loss-of-coolant accident, or closes off a line which communicates with the containment atmosphere in the event of a loss-of-coolant accident.

Isolation of a line inside the containment prevents flow from the reactor coolant system or any other large source of radioactive fluid in the event that a piping rupture outside the containment occurs, even though a piping rupture outside the containment at the same time as a loss-of-coolant accident is not considered credible, since the penetrating lines are Seismic Category I design

Closure times for isolation valves are provided in Table 6.2-13.

Containment isolation becomes ~~mandatory~~ necessary under the same conditions that require operation of the other engineered safety features. The containment isolation signal is derived from the same signals which automatically activate safety injection.

The containment isolation valves are designed and qualified to ensure that they are capable of withstanding the maximum potential seismic loads.

To facilitate their adequacy in this respect:

1. Valves are located, when possible, in a manner to reduce the accelerations on the valves. Valves suspended on piping spans are reviewed for adequacy for the loads to which the span would be subjected. Valves are mounted in the position recommended by the manufacturer.

2. Valve yokes are reviewed for adequacy and strengthened as required for the response of the valve operator to seismic loads.

3. Where valves are required to operate during seismic loading, the operating forces are reviewed to ensure that system function is preserved. Seismic forces on the operating parts of the valve are expected to be small compared to the other forces present.

4. Control wires and piping to the valve operators are designed and installed so that the flexure of the line does not endanger the control system. Appendages to the valve, such as position indicators and operators, are checked for structural adequacy.

5. As part of the RG&E seismic piping upgrade program, all containment isolation valves were reviewed and reanalyzed to ensure that current seismic criteria are met.

~~Isolation valves for all fluid system lines penetrating the containment provide at least two barriers for redundancy against leakage of radioactive fluids to~~

the environment in the event of a loss-of-coolant accident. These barriers, in the form of isolation valves or closed systems, are defined on an individual line basis. In addition to satisfying containment isolation criteria, the valving is designed to facilitate normal operation and maintenance of the systems and to ensure reliable operation of other engineered safety features systems.

With respect to numbers and locations of isolation valves, the criteria applied are generally those outlined by the five classes described in Section 6.2.4.4.2.

6.2.4.3 System Design

The five classes described in Section 6.2.4.4 are the general categories into which lines penetrating containment are classified. Also described in Section 6.2.4.4 are the basic isolation valve and system arrangements used to provide two barriers between the reactor coolant system or containment atmosphere and the environment. Systems design is such that failure of one isolation barrier ~~valve to close~~ does not prevent isolation, and no manual operation is required for immediate isolation. Automatic isolation is initiated by the containment isolation signal.

A containment isolation signal is generated automatically by any safety injection signal or manually by depressing one of two switches on the main control board left panel. The safety injection signals which initiate containment isolation are as follows:

1.	Pressurizer low pressure	≥1723 psig
2.	Steam line low pressure	≥514 psig
3.	Containment high pressure	4 psig

3

Main steam line isolation will occur on a high-high steam flow coincident with a safety injection signal, high steam flow and low T_{avg} coincident with a safety injection signal, and high-high containment pressure of 18 psig. Automatic containment isolation valves are designed to isolate the process stream in a maximum of 60 sec depending on the particular isolation valve.

6.2.4.3.1 Isolation Valve Parameters Tabulation

A summary of the fluid system lines penetrating containment and the valves and closed systems employed for containment isolation is presented in Table 6.2-13 and Figures 6.2-13 through 6.2-75. The containment isolation valves are indicated in the figures by the designations CIV (containment isolation valve). Each valve is described in Table 6.2-13 as to type, operator, position indication in the control room and open or closed status during normal operation, cold shutdown, and immediate post-accident conditions. Information is also presented on valve position following loss of power ~~preferential failure mode~~, automatic trip by the containment isolation signal, and maximum isolation time, ~~and the fluid carried by the line.~~

Containment isolation valves are provided with actuation and control equipment appropriate to the valve type. For example, air-operated globe and diaphragm (Saunders patent) valves are generally equipped with air diaphragm operators, with fail-safe operation ensured by redundant control devices in the instrument air supply to the valve. Motor-operated gate valves are capable of being supplied from reliable onsite emergency power as well as their normal power source. Manual and check valves, of course, do not require actuation or control systems.

All containment isolation trip valves are actuated to the closed position by the containment isolation signal, derived automatically from the safety injection signal. Nonautomatic isolation valves, i.e., remote stop valves and manual valves, are used in lines that must remain in service, at least for a time, following an accident. These are closed manually if and when the lines are taken out of service.

6.2.4.3.2 Isolation Valves Operability

All containment isolation valves, actuators, and controls are located so as to be protected against missiles which could be generated as the result of a loss-of-coolant accident. Only valves so protected are considered to qualify as containment isolation valves.

Only isolation valves located inside containment are subject to the high-pressure, high-temperature, steam-laden atmosphere resulting from an accident.

Operability of these valves in the accident environment is ensured by proper design, construction, and installation, as reflected by the following considerations:

1. All components in the valve installation, including valve bodies, trim and moving parts, actuators, instrument air and control, and power wiring, are qualified to perform their safety function in a postaccident environment if they need to change position. Provisions for valves locked in their safe postaccident conditions ensure no adverse changes of position due to accident conditions.

2. In addition to normal pressures, the valves are designed to withstand maximum pressure differentials in the reverse direction imposed by the accident conditions.

Instrument air is used chiefly as the motive power for valve actuation. The instrument air system is supplied from three air compressors, one of which is normally operating. A second backup source is available via a connection from the service air system which can be used during periods of maintenance ~~of one~~ of the instrument air compressors.

All air-operated valves which receive a containment isolation signal or are considered a containment isolation valve are listed in Table ~~6.2-13 and~~ 6.2-14. The effects of loss of air to these valves were considered in the safety analysis of all systems in the plant. Throughout the overall design of the plant, it has been acknowledged that the air supply is not a Class 1 safety-related system. All systems have been designed accordingly with careful attention to the manner of operating equipment to ensure that each component will assume the safe position upon loss of air pressure. ~~(See Table 6.2-14.)~~

6.2.4.4 Design Evaluation

6.2.4.4.1 Current Safety Criteria

The containment isolation system conforms with the requirements of diversity in the parameters used for containment isolation, i.e., automatic isolation of all nonessential systems by the containment isolation signal. The design is such that resetting the isolation signal will not result in the automatic reopening

6.2.4.4 Design Evaluation

6.2.4.4.1 Current Safety Criteria

The containment isolation system conforms with the requirements of diversity in the parameters used for containment isolation, i.e., automatic isolation of all nonessential systems by the containment isolation signal. The design is such that resetting the isolation signal will not result in the automatic reopening of containment isolation valves but reopening will require deliberate operator action. The essential versus nonessential system containment penetrations are given in Table 6.2-15.

The containment isolation system at Ginna Station was evaluated[9,10] by the NRC under the SEP Topic VI-4. The safety criteria used in the evaluation were as follows:

1. 10 CFR Part 50, Appendix A, General Design Criteria 54, 55, 56, and 57.

2. NUREG 75/087, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants (SRP 6.2.4, Containment Isolation System, where applicable).

3. Regulatory Guide 1.11, Instrument Lines Penetrating Primary Reactor Containment.

4. Regulatory Guide 1.141, Revision 1, Containment Isolation Provisions for Fluid Systems.

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There are five classes of penetrations for categorizing the lines penetrating the containment. The following discussion addresses the conformance of each penetration class to applicable safety criteria. ~~It includes outstanding recommendations, resolutions, and commitments from the NRC SEP Topic VI-4 evaluation where necessary to support exceptions to the safety criteria.~~ The penetration numbers (or line numbers) correspond to those provided in Table 6.2-13.

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