

10 PLANT SPECIFIC ANALYSIS

This section documents the plant specific analysis that was done for WCGS.

The plant specific study involved taking WCGS-specific parameters and implementing them into both the generic probabilistic evaluation of Section 8.2 and the deterministic evaluation of containment hole size of Section 8.3 to get actual WCGS-specific results. The purpose of this study was to determine how many more of WCGS's CIVs could be justified for longer CT relaxations in addition to those justified under the generic analysis. The generic analysis was a conservative assessment, and therefore, applicable to all Westinghouse Owner's Group plants, including WCGS. A plant specific application will result in additional CT improvements.

First, the WCGS CIVs that were unable to meet the full 168 hour CT extension under the generic analysis were identified (see Table 9-2 of Section 9). Next, the necessary input parameters relative to WCGS were obtained and the analysis of Sections 8.2 and 8.3 was repeated using the WCGS specific parameters. Re-doing the analysis plant specifically made it possible to determine whether or not longer CTs could be justified for WCGS.

The re-analysis involved a) re-calculation of the minimum containment hole size that can provide a large early release (see the methodology of Section 8.3) using WCGS specific parameters. This identified which penetration flow paths are considered as 'small lines' (in addition to those identified under the application of the generic analysis of Section 9) and are thus automatically justified for 168 hour CTs; and b) re-calculation of ICLERPs and Δ LERFs (see the methodology of Section 8.2) using WCGS specific parameters for those penetrations that were not identified as 'small lines' and those that could not be justified to the full 168 hour CT under the application of the generic analysis of Section 9.

The methodology, terminology and assumptions that were applicable in the generic analysis (of Sections 8.2 and 8.3) are all applicable to this WCGS specific analysis. The only difference is that WCGS input parameters are used, rather than generic parameters. The WCGS input parameters are listed in Tables 9-1a through 9-1e.

10.1 CALCULATIONS

The re-calculation of WCGS's containment hole size through which a large release can be expected involved substituting the inputs of Table 9-1d of Section 9.1 into the leak rate equations of Section 8.3.2. A vent diameter hole size of 6.4 inches for WCGS's dry containment at a design pressure (P_{c2}) of 74.7 psia was calculated. Therefore, any WCGS CIV not directly connected to the RCS with a pipe diameter of 6 inches or less is automatically assigned a CT of 168 hours since these hole sizes are too small to provide a large release. Note, that in the generic analysis, the containment hole size threshold for a large dry containment was 3 inches (see Section 8.3).

The WCGS-specific containment hole size analysis was then applied to those CIV penetrations that could not be justified to the full 168 hours generically (as identified in Table 9-2). Table 10-1 summarizes which CIVs received longer CTs because of the re-calculated pipe size diameter of 6 inches. They are identified as 'small lines' in the column "Re-Calculation Explanation."

For the remaining penetrations, the ICLERP and/or Δ LERF (depending on which was more limiting) was re-calculated with the WCGS-specific input parameters of Tables 9-1a, 9-1b, 9-1c, and 9-1e. The inputs were used in the appropriate ICLERP and Δ LERF equations discussed in Sections 8.2.2 through 8.2.4. Similar to Step 5 of Section 9.1, Guidelines A and B had to be followed when choosing which valve type to assume for the penetration, however this time, Guidelines A and B are Wolf-Creek specific.

- GUIDELINE A - For any penetration that contains one normally open CIV:

When given the option of choosing a CT for a variety of valve types, the CT of the same valve type as that of the normally open valve is used and this valve type is assumed to be applicable to all the valves in the penetration.

- GUIDELINE B - For any penetration that contains more than one normally open CIV:

When given the option of choosing a CT for a variety of valve types, the CT of the same valve type as that of the normally open valve that has the highest probability of failing to close is used. This valve type is assumed to be applicable to all valves within the penetration. See below for which valve types have the higher failure probabilities:

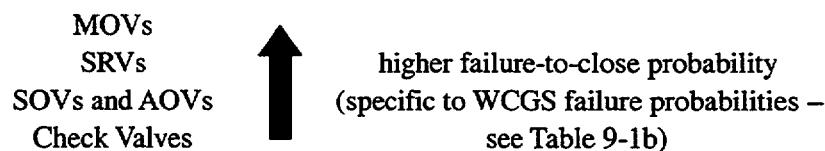


Table 10-1 summarizes those penetrations that could not meet the full 168 hour CT under the application of the generic analysis. It identifies which penetrations received longer CTs due to both the probabilistic re-evaluation and the deterministic re-evaluation of containment hole size, plant specifically. Note, not all CIVs were able to be justified for longer CTs due to failure probability and/or penetration configuration.

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
P-13	ENHV-07	System pressure boundary maintained System pressure boundary compromised	8 hrs 4 hrs	168 hrs 168 hrs	8 hrs 4 hrs	8 hrs 8 hrs	168 hrs 168 hrs	8 hrs 8 hrs	re-calc ICLERP for calculation number 1, Group I,C of Table 8-2
P-14	EJHV-8811B	System pressure boundary maintained System pressure boundary compromised	8 hrs 4 hrs	168 hrs 168 hrs	8 hrs 4 hrs	8 hrs 8 hrs	168 hrs 168 hrs	8 hrs 8 hrs	re-calc ICLERP for calculation number 1, Group I,C of Table 8-2
	EJHV-24	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJHV-26	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-189	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-15	EJHV-8811A	System pressure boundary maintained System pressure boundary compromised	8 hrs 4 hrs	168 hrs 168 hrs	8 hrs 4 hrs	8 hrs 8 hrs	168 hrs 168 hrs	8 hrs 8 hrs	re-calc ICLERP for calculation number 1, Group I,C of Table 8-2
	EJHV-23	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJHV-25	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-187	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-16	ENHV-01	System pressure boundary maintained System pressure boundary compromised	8 hrs 4 hrs	168 hrs 168 hrs	8 hrs 4 hrs	8 hrs 8 hrs	168 hrs 168 hrs	8 hrs 8 hrs	re-calc ICLERP for calculation number 1, Group I,C of Table 8-2

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
P-21	EJHCV-8825	System pressure boundary maintained	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	-
		System pressure boundary compromised	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	
	EJHV-8840	System pressure boundary maintained	72 hrs	168 hrs	72 hrs	72 hrs	168 hrs	72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
		System pressure boundary compromised	72 hrs	168 hrs	72 hrs	72 hrs	168 hrs	72 hrs	
	EJV-056	System pressure boundary maintained	72 hrs	168 hrs	72 hrs	72 hrs	168 hrs	72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
		System pressure boundary compromised	72 hrs	168 hrs	72 hrs	72 hrs	168 hrs	72 hrs	
	EJV-124	System pressure boundary maintained	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	-
		System pressure boundary compromised	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	
	EJV-122	System pressure boundary maintained	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	-
System pressure boundary compromised		168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs		
EJV-118,120	System pressure boundary maintained	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	-	
	System pressure boundary compromised	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs		
EJV-175, 6,7,8	System pressure boundary maintained	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	-	
	System pressure boundary compromised	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs		
EJ-8841A	System pressure boundary maintained	72 hrs	168 hrs	72 hrs	72 hrs	168 hrs	72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3	
	System pressure boundary compromised	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs		
EJ-8841B	System pressure boundary maintained	72 hrs	168 hrs	72 hrs	72 hrs	168 hrs	72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3	
	System pressure boundary compromised	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs	168 hrs		

Table 10-1 Re-Calculated CTs for Plant Specific Analysis
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)

Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
P-23	BGHV-8160	System pressure boundary maintained System pressure boundary compromised	24 hrs 168 hrs	168 hrs 168 hrs	24 hrs 168 hrs	48 hrs 168 hrs	168 hrs 168 hrs	48 hrs 168 hrs	re-calc ICLERP for calculation number 1, Group II,B of Table 8-3; compute AOT for an AOV, based on Guideline B of Section 9.1
	BGV-363	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	BGHV-8152	System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs	168 hrs 168 hrs	24 hrs 24 hrs	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	re-calc ICLERP for calculation number 1, Group II,B of Table 8-3; compute AOT for an AOV, based on Guideline B of Section 9.1
P-27	EJHV-8809B	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EJV-058	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ALERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ALERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EJHCV-8890B	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-086	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-088,090	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EP-8818C	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 4 hrs	4 hrs 4 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	when pressure boundary compromised, no longer RCS connection, small line (< 6") according to hole size re-calc; re-calc ICLERP and ALERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EJV-179, 180, 181,182	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EP-8818D	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 4 hrs	4 hrs 4 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	when pressure boundary compromised, no longer RCS connection, small line (< 6") according to hole size re-calc; re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EJV-166	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-28	EFHV-32	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
	EFHV-34	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EFV-278	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-29	EFHV-46	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
	EFV-279	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EFHV-50	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
P-34	GPV-010	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	Flanges	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
P-48	EMHV-8802B	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EMHV-8824	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EMV-003	System pressure boundary maintained System pressure boundary compromised	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
	EMV-004	System pressure boundary maintained System pressure boundary compromised	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
	EMV-060, 061, 063,064 EMV-217, 169	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EMV-170,172	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EMV-059	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP or calculation number 5, Group II,A of Table 8-3
P-49	EMHV-8835	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 7, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EMHV-8823	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EPV-020	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	re-calc ICLERP and ΔLERF for calculation number 7, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EPV-010	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	re-calc ICLERP and ΔLERF for calculation number 7, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EPV-040	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	re-calc ICLERP and ΔLERF for calculation number 7, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EPV-030	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	re-calc ICLERP and ΔLERF for calculation number 7, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EMV-067	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 7, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EMV-068 thru EMV-075	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EMV-218 EMV-162 thru EMV-168	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-52	EJHV-8701B	System pressure boundary maintained System pressure boundary compromised	4 hrs 4 hrs	4 hrs 4 hrs	4 hrs 4 hrs	4 hrs 8 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 8, Group II,A of Table 8-3
	EJ-8708B	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-53	ECV-084	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	ECV-085	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	ECV-083	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
P-54	ECV-087	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	ECV-086	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	ECV-088	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
P-64	SJHV-128	System pressure boundary maintained System pressure boundary compromised	24 hrs 168 hrs	168 hrs 168 hrs	24 hrs 168 hrs	24 hrs 168 hrs	168 hrs 168 hrs	24 hrs 168 hrs	re-calc ICLERP for calculation number 4, Group II,A of Table 8-3
	SJHV-129	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	SJHV-130	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	SJV-106	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-65	GSHV-20	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	GSHV-21	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	GSV-041	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ALERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ALERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
P-69	SJHV-12	System pressure boundary maintained System pressure boundary compromised	48 hrs 168 hrs	168 hrs 168 hrs	48 hrs 168 hrs	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	re-calc ICLERP for calculation number 2, Group II,A of Table 8-3
	SJHV-13	System pressure boundary maintained System pressure boundary compromised	48 hrs 48 hrs	168 hrs 168 hrs	48 hrs 48 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 2, Group II,A of Table 8-3
	SJV-071	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-71	EFHV-31	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
	EFV-276	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EFHV-33	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline A of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
P-73	EFHV-45	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
	EFV-277	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EFHV-49	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
P-75	EGHV-60	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 8, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline B of Section 9.1
	EG-V372	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EGHV-59	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	re-calc ICLERP for calculation number 8, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline A of Section 9.1
	EGHV-131	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 8, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline A of Section 9.1
	EGHV-130	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 8, Group I,B of Table 8-2; compute AOT for an MOV, based on Guideline A of Section 9.1
P-76	EGHV-62	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	EGV-371	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EGHV-61	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	EGHV-132	System pressure boundary maintained System pressure boundary compromised	72 hrs 48 hrs	168 hrs 168 hrs	72 hrs 48 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
	EGHV-133	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	no RCS connection, small line (< 6") according to hole size re-calc
P-79	EJHV-8701A	System pressure boundary maintained System pressure boundary compromised	4 hrs 4 hrs	4 hrs 4 hrs	4 hrs 4 hrs	4 hrs 8 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 8, Group II,A of Table 8-3
	EJ8708A	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-154	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-82	EJHV-8809A	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis
 (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)

Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EJV-054	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	72 hrs 72 hrs	4 hrs 4 hrs	4 hrs 4 hrs	re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EP8818A	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 4 hrs	4 hrs 4 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	when pressure boundary compromised, no longer RCS connection, small line (< 6") according to hole size re-calc; re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EP8818B	System pressure boundary maintained System pressure boundary compromised	4 hrs 168 hrs	4 hrs 4 hrs	4 hrs 4 hrs	8 hrs 168 hrs	4 hrs 168 hrs	4 hrs 168 hrs	when pressure boundary compromised, no longer RCS connection, small line (< 6") according to hole size re-calc; re-calc ICLERP and ΔLERF for calculation number 6, Group II,A of Table 8-3; compute AOT for an MOV, based on Guideline A of Section 9.1
	EJHCV-8890A	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-134, V-136	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-132	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EJV-171, EJV-172, EJV-173, EJV-174	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-87	EMHV-8802A	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3

Table 10-1 Re-Calculated CTs for Plant Specific Analysis
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)

Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	EMHV-8881	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EMV-001	System pressure boundary maintained System pressure boundary compromised	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
	EMV-002	System pressure boundary maintained System pressure boundary compromised	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
	EMV-052, V-053, V-055, V-056, V-184, V-185	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	EMV-051	System pressure boundary maintained System pressure boundary compromised	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 5, Group II,A of Table 8-3
	EMV-186, V-187	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
P-93	SJHV-5	System pressure boundary maintained System pressure boundary compromised	24 hrs 168 hrs	168 hrs 168 hrs	24 hrs 168 hrs	72 hrs 168 hrs	168 hrs 168 hrs	72 hrs 168 hrs	re-calc ICLERP for calculation number 3, Group II,A of Table 8-3; compute AOT for an SOV, based on Guideline B of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	SJHV-6	System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs	168 hrs 168 hrs	24 hrs 24 hrs	72 hrs 72 hrs	168 hrs 168 hrs	72 hrs 72 hrs	re-calc ICLERP for calculation number 3, Group II,A of Table 8-3; compute AOT for an SOV, based on Guideline B of Section 9.1
	SJV-069	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
	SJHV-127	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
V-160	GTHZ-9	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis
 (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)

Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	GTHZ-8	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1
	GTHZ-12	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis									
(cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ΔLERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ΔLERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	GTHZ-11	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1
	GTV0223	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-
V-161	GTHZ-7	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ALERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ALERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	GTHZ-5	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1
	GTHZ-4	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1

Table 10-1 Re-Calculated CTs for Plant Specific Analysis (cont.) (note: only those CIV penetrations that were not justified to full 168 hour CT generically are listed)									
Penetration Number	Valve	Maintenance Activity Type	Generic ICLERP @ AOT:	Generic ALERF @ AOT:	Justified Generic AOT	Plant Specific ICLERP @ AOT:	Plant Specific ALERF @ AOT:	Justified Plant Specific AOT	Re-Calculation Explanation
	GTHZ-6	System pressure boundary maintained System pressure boundary compromised or if valve is open: System pressure boundary maintained System pressure boundary compromised	24 hrs 24 hrs or: 24 hrs 24 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 24 hrs 24 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	168 hrs 168 hrs or: 168 hrs 168 hrs	24 hrs 24 hrs or: 72 hrs 72 hrs	re-calc ICLERP for calculation number 15, Group I,A of Table 8-2 or: re-calc ICLERP for calculation number 16, Group I,A of Table 8-2; compute AOT for an AOV, based on Guideline B of Section 9.1
	GTV0222	System pressure boundary maintained System pressure boundary compromised	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	168 hrs 168 hrs	-

10.2 RESULTS

The WCGS-specific analysis resulted in additional extended CTs for their CIVs than the generic application. This is related to the conservative nature of the generic analysis that is applicable to all Westinghouse NSSS plants, that used the most limiting values. Figure 10-1 displays the comparison of using the plant specific approach of Section 10 to the generic approach performed in the lead plant study of Section 9. It can be seen that out of all of WCGS's containment isolation valves, 83.0% of them can be justified for the full 168 hour CT under this plant specific analysis, which is a 7.7% increase from the generic analysis results. Also, 94.4% of the CIVs are now justified for a CT of at least 8 hours; a 1.3% increase from the generic analysis.

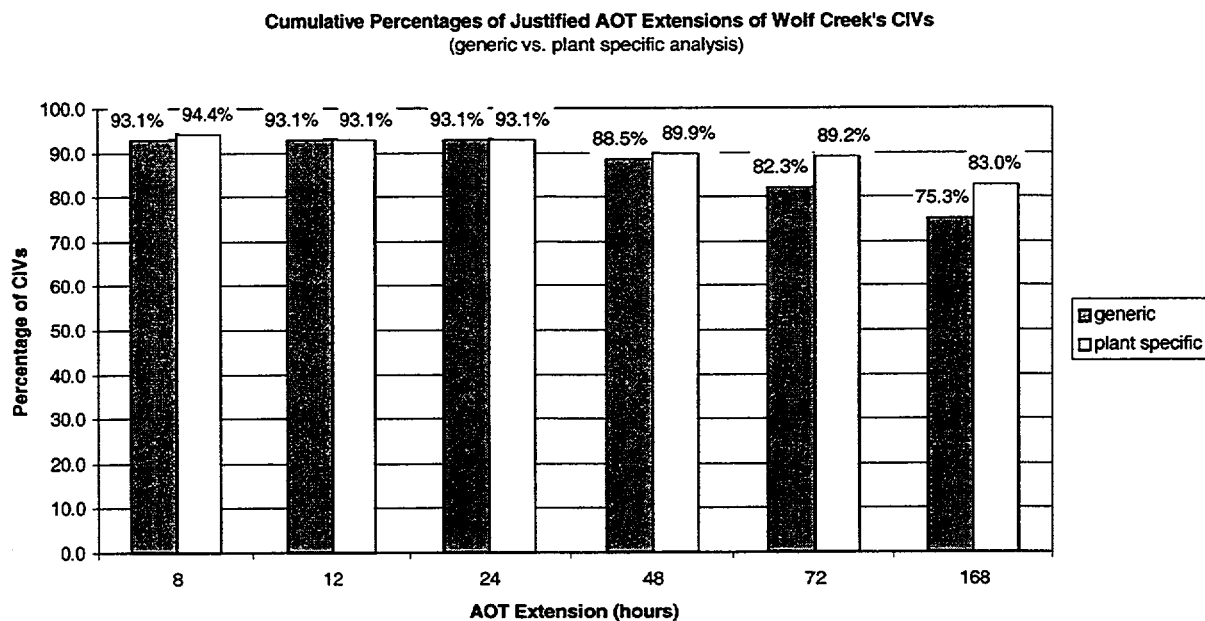


Figure 10-1 Cumulative Percentages of Justified CT Extensions of WCGS's CIVs – Generic Analysis vs. Plant Specific Analysis

11 CONCLUSIONS

Through a risk-informed evaluation of completion time extensions for containment isolation valves that is consistent with NRC acceptance criteria, the following conclusions are drawn:

- Through the deterministic approach of Section 8.3, a threshold hole size was determined at which a large release can occur for penetrations that interface with the containment atmosphere. The CTs for the CIVs in penetrations less than this size are increased to 7 days. The threshold vent diameter, or containment hole size, value is where 100% containment volume per hour leak rate occurs, which is consistent with the "EPRI PSA Applications Guide" as being defined as a large release.
- Through the probabilistic approach of Section 8.2, generic penetration configurations were evaluated for acceptable CTs. Based on this, the completion times for the generic listing of containment isolation valves should be increased to the values provided in Tables 8-2, 8-3, and 8-4. The completion time extensions account for valves of various types with different methods of maintenance. The ICLERP and Δ LERF for each penetration at the proposed CT extensions meet the acceptance criteria of Regulatory Guides of 1.174 and 1.177.
- The lead plant application of the generic analysis of Section 9 demonstrates a) that the analysis is applicable and beneficial to utilities; 75.3% of all of WCGS's CIVs were justified to the full 7 day completion time, and b) the process to follow for utility implementation.
- The plant specific analysis of Section 10 illustrates that the generic analysis is conservative and longer CTs can be achieved on a utility-specific basis. Performing the plant specific analysis with WCGS resulted in 83.0% of their CIVs being justified to the full completion time of 7 days, a 7.7% increase from the generic application.

12 REFERENCES

1. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," July 1998.
2. Regulatory Guide 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," August 1998.
3. "Standard Technical Specifications, Westinghouse Plants," U.S. NRC, NUREG-1431, Vol. 1, Rev. 2.
4. Information obtained from plant specific PRA databases for WOG plants.
5. "Advanced Light Water Reactor Utility Requirements Document," Volume II, ALWR Evolutionary Plant, Chapter 1, Appendix A, PRA Key Assumptions and Groundrules, Rev. 5, issued December 1992.
6. "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report," WCAP-14572, Rev. 1-NP-A.
7. WesSAGE, Version 1.0 for Microsoft Windows.
8. "EPRI PSA Applications Guide," EPRI TR-105396, Project 3200-12, Final Report, August 1995.
9. Performance Capability Working Group Online Manual, <http://swec0030.pgh.wec.com/sae/pcwg-web/pcwg.html>, last modified 06/07/2001.
10. Computational Aid No. 4, "Volumetric Release Rate from Vent," the Westinghouse Owners Group Severe Accident Management Guidance, June 1994.

APPENDIX A
(MARKED UP TECHNICAL SPECIFICATIONS AND BASES)

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
3.6.3

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

- NOTES -

1. Penetration flow path(s) [except for [42] inch purge valve flow paths] may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for systems made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. NOTE - Only applicable to penetration flow paths with two [or more] containment isolation valves.</p> <p>One or more penetration flow paths with one containment isolation valve inoperable [for reasons other than Condition[s] D [and E]].</p>	<p>A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.</p> <p><u>AND</u></p>	<p>4 hours</p> <p>Insert 2</p>

Insert 1

Insert 1

AND

CIV pressure boundary intact.

Insert 2

4 hours for Category 1 CIVs

AND

8 hours for Category 2 CIVs

AND

12 hours for Category 3 CIVs

AND

24 hours for Category 4 CIVs

AND

48 hours for Category 5 CIVs

AND

72 hours for Category 6 CIVs

AND

7 days for Category 7 CIVs

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
3.6.3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	<p>A.2</p> <p style="text-align: center;">----- - NOTES - -----</p> <ol style="list-style-type: none"> 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. <p>-----</p> <p>Verify the affected penetration flow path is isolated.</p>	<p>Once per 31 days for isolation devices outside containment</p> <p><u>AND</u></p> <p>Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment]</p>

Insert 3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	<p data-bbox="711 394 1024 548">2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p> <hr data-bbox="678 562 1040 569"/> <p data-bbox="678 615 959 705">Verify the affected penetration flow path is isolated.</p>	<p data-bbox="1109 632 1414 722">Once per 31 days for isolation devices outside containment</p> <p data-bbox="1109 751 1170 783"><u>AND</u></p> <p data-bbox="1109 814 1425 999">Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment]</p>

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
3.6.3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><i>C.P.</i></p> <p>- NOTE - Only applicable to penetration flow paths with two [or more] containment isolation valves.</p> <p>One or more penetration flow paths with two [or more] containment isolation valves inoperable [for reasons other than Condition[s] D [and E]].</p>	<p><i>B.1</i> <i>C.1</i></p> <p>Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.</p>	<p>1 hour</p>
<p><i>D.</i></p> <p>- NOTE - Only applicable to penetration flow paths with only one containment isolation valve and a closed system.</p> <p>One or more penetration flow paths with one containment isolation valve inoperable.</p>	<p><i>C.1</i></p> <p>Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.</p> <p>AND</p>	<p><i>(2 hours)</i></p>

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
3.6.3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	<p><i>Ce</i></p> <p>- NOTES -</p> <p>1. Isolation devices in high radiation areas may be verified by use of administrative means.</p> <p>2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.</p> <p>Verify the affected penetration flow path is isolated.</p>	<p><i>Once per 31 days</i></p>
<p>D. [One or more shield building bypass leakage [or purge valve leakage] not within limit.</p>	<p>D.1 Restore leakage within limit.</p>	<p>4 hours for shield building bypass leakage</p> <p><u>AND</u></p> <p>24 hours for purge valve leakage]</p>
<p>E. [One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.</p>	<p>E.1 Isolate the affected penetration flow path by use of at least one [closed and de-activated automatic valve, closed manual valve, or blind flange].</p> <p><u>AND</u></p>	<p>24 hours</p>

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

ACTIONS (continued)

The ACTIONS are further modified by a third Note, which ensures appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

In the event the isolation valve leakage results in exceeding the overall containment leakage rate, Note 4 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1.

A.1 and A.2

Insert 4 — In the event one containment isolation valve in one or more penetration flow paths is inoperable, [except for purge valve or shield building bypass leakage not within limit], the affected penetration flow path must be *isolated*. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within *4 hours* (*The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.*)

Insert 5 —

Insert 6 —

Specified — For affected penetration flow paths that cannot be restored to OPERABLE status within the *4 hour* Completion Time, and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the

Insert 4

[and the CIV pressure boundary is intact,]

Insert 5

[The CIV pressure boundary is considered to be intact when the inoperable CIV is capable of maintaining the boundary between the contained fluid and the containment or outside atmosphere. An example of CIV inoperability and associated maintenance on the CIV where the CIV pressure boundary is considered to be intact is working on the valve actuator.]

Insert 6

[the Completion Times specified for each Category of CIVs identified in [Table B 3.6.3-1]. These Completion Times are justified in Ref. 4.]

REVIEWER'S NOTE

The plant specific determination of the CIV Completion Time Categories is performed by comparing the plant specific penetration types to the generic penetration types evaluated that are identified in Table E-1 of Ref. 4.

The plant specific application of the generic analysis that justified the generic Completion Time Categories is discussed in Section 9.0 of Ref. 4.

Plant specific Completion Time Categories may also be calculated in lieu of the generic Completion Time Categories, and is discussed in Section 10.0 of Ref 4.

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

ACTIONS (continued)

previous 92 days* is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition A ~~has been modified by a Note indicating that this Condition is only applicable to those penetration flow paths with two [or more] containment isolation valves. For penetration flow paths with only one containment isolation valve and a closed system, Condition C provides the appropriate actions.~~ *Insert 7*

Required Action A.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these devices once they have been verified to be in the proper position, is small.

Insert 8 → *B.1 C.1*

With two [or more] containment isolation valves in one or more penetration flow paths inoperable, [except for purge valve or shield building bypass leakage not within limit,] the affected penetration flow path must be isolated within 1 hour. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. The 1 hour Completion Time is consistent with the ACTIONS of LCO 3.6.1. In the event the affected penetration is isolated in accordance with Required Action *B.1*, the affected penetration must be verified to be isolated on a periodic basis per Required Action A.2 which remains in effect. This periodic verification is necessary to assure leak tightness of containment and that penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative control and the probability of their misalignment is low. *or B.2*

Insert 7

The closed system must meet the requirements of Ref. 3.

Insert 8

[B.1 and B.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable, and the CIV pressure boundary is not intact, [except for purge valve or shield building bypass leakage not within limit], the affected penetration flow path must be isolated. The CIV pressure boundary is considered not to be intact when the inoperable CIV is not capable of maintaining the boundary between the contained fluid and the containment or outside atmosphere. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Required Action B.1, the device used to isolate the penetration should be the closest available one to containment. Required Action B.1 must be completed within [the Completion Times specified for each Category of CIVs identified in [Table B 3.6.3-1]. These Completion Times are justified in Ref. 4.]

REVIEWER'S NOTE

The plant specific determination of the CIV Completion Time Categories is performed by comparing the plant specific penetration types to the generic penetration types evaluated that are identified in Table E-2 of Ref. 4.

The plant specific application of the generic analysis that justified the generic Completion Time Categories is discussed in Section 9.0 of Ref. 4.

Plant specific Completion Time Categories may also be calculated in lieu of the generic Completion Time Categories, and is discussed in Section 10.0 of Ref 4.

For affected penetration flow paths that cannot be restored to OPERABLE status within the specified Completion Times and that have been isolated in accordance with Required Action B.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated, will be in an isolated position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment and capable of being mispositioned, are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is

low. For isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment, and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Condition B is applicable to penetration flow paths with two [or more] containment isolation valves, and penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Ref. 3.

Required Action B.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that the devices are not inadvertently repositioned. Therefore, the probability of misalignment of these devices once they have been verified to be in the proper position, is small.]

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

ACTIONS (continued)

Condition B is modified by a Note indicating this Condition is only applicable to penetration flow paths with two [or more] containment isolation valves. ~~(Condition A of this LCO addresses the condition of one containment isolation valve inoperable in this type of penetration flow path.)~~

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path must be restored to OPERABLE status or the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration flow path. Required Action C.1 must be completed within the 72 hour Completion Time. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. The closed system must meet the requirements of Ref. 3. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system.

Required Action C.2 is modified by two Notes. Note 1 applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

ACTIONS (continued)

to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

[D.1

With the shield building bypass leakage rate (SR 3.6.3.11) [or purge valve leakage rate (SR 3.6.3.7)] not within limit, the assumptions of the safety analyses are not met. Therefore, the leakage must be restored to within limit. Restoration can be accomplished by isolating the penetration(s) that caused the limit to be exceeded by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. When a penetration is isolated the leakage rate for the isolated penetration is assumed to be the actual pathway leakage through the isolation device. If two isolation devices are used to isolate the penetration, the leakage rate is assumed to be the lesser actual pathway leakage of the two devices. The 4 hour Completion Time for shield building bypass leakage is reasonable considering the time required to restore the leakage by isolating the penetration(s) and the relative importance of secondary containment bypass leakage to the overall containment function. [The 24 hour Completion time for purge valve leakage is acceptable considering the purge valves remain closed so that a gross breach of the containment does not exist.]

- REVIEWER'S NOTE -

[The bracketed options provided in ACTION D reflect options in plant design and options in adopting the associated leakage rate Surveillances.

The options (in both ACTION D and ACTION E) for purge valve leakage, are based primarily on the design - if leakage rates can be measured separately for each purge valve, ACTION E is intended to apply. This would be required to be able to implement Required Action E.3. Should the design allow only for leak testing both purge valves simultaneously, then the Completion Time for ACTION D should include the "24 hours for purge valve leakage" and ACTION E should be eliminated.]]

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

ACTIONS (continued)

[E.1, E.2, and E.3]

In the event one or more containment purge valves in one or more penetration flow paths are not within the purge valve leakage limits, purge valve leakage must be restored to within limits, or the affected penetration flow path must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a [closed and de-activated automatic valve, closed manual valve, or blind flange]. A purge valve with resilient seals utilized to satisfy Required Action E.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.7. The specified Completion Time is reasonable, considering that one containment purge valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action E.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

5 For the containment purge valve with resilient seal that is isolated in accordance with Required Action E.1, SR 3.6.3.7 must be performed at least once every [92] days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.7, 184 days, is based on an NRC initiative, Generic Issue B-20 (Ref. 4). Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per [92] days was chosen and has been shown to be acceptable based on operating experience.

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

ACTIONS (continued)

Required Action E.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.]

F.1 and F.2

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE [SR 3.6.3.1
REQUIREMENTS

Each [42] inch containment purge valve is required to be verified sealed closed at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close during a LOCA in time to limit offsite doses. Therefore, these valves are required to be in the sealed closed position during MODES 1, 2, 3, and 4. A containment purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. In this application, the term "sealed" has no connotation of leak tightness. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 6), related to containment purge valve use during plant operations. In the event purge valve leakage requires entry into Condition E, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.]

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

SURVEILLANCE REQUIREMENTS (continued)

valves will remain closed when the inside containment atmosphere returns to subatmospheric conditions following a DBA. SR 3.6.3.6 requires verification of the operation of the check valves that are testable during unit operation. The Frequency of 92 days is consistent with the Inservice Testing Program requirement for valve testing on a 92 day Frequency.]

[SR 3.6.3.7

For containment purge valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option [A][B], is required to ensure OPERABILITY. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Generic Issue B-20, "Containment Leakage Due to Seal Deterioration" (Ref. ^{AS} 5)

Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.]

SR 3.6.3.8

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass this Surveillance when performed at the [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Containment Isolation Valves (Atmospheric, Subatmospheric, Ice Condenser, and Dual)
B 3.6.3

BASES

SURVEILLANCE REQUIREMENTS (continued)

If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. The Frequency is required by the Containment Leakage Rate Testing Program. This SR simply imposes additional acceptance criteria.

[Bypass leakage is considered part of L_a .

- REVIEWER'S NOTE -

Unless specifically exempted.]]

REFERENCES

1. FSAR, Section [15].
2. FSAR, Section [6.2].
3. Standard Review Plan 6.2.4.
- Insert 9* → ~~4.~~ Generic Issue B-20, "Containment Leakage Due to Seal Deterioration."
- ~~5.~~ Generic Issue B-24.

Insert 9

4. WCAP-15791, Rev. 0, "Risk-Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," May 2002.

APPENDIX B

EXAMPLE MESSAGE FAULT TREES AND OUTPUT FILES

The information provided in this appendix is proprietary to Westinghouse Electric Company. Due to the volume of information, it has not been bracketed. The coding associated with this information is "a,c."

APPENDIX C
WCGS CIVS – USAR, FIGURE 6.2.4-1

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: STEAM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 40.0ft

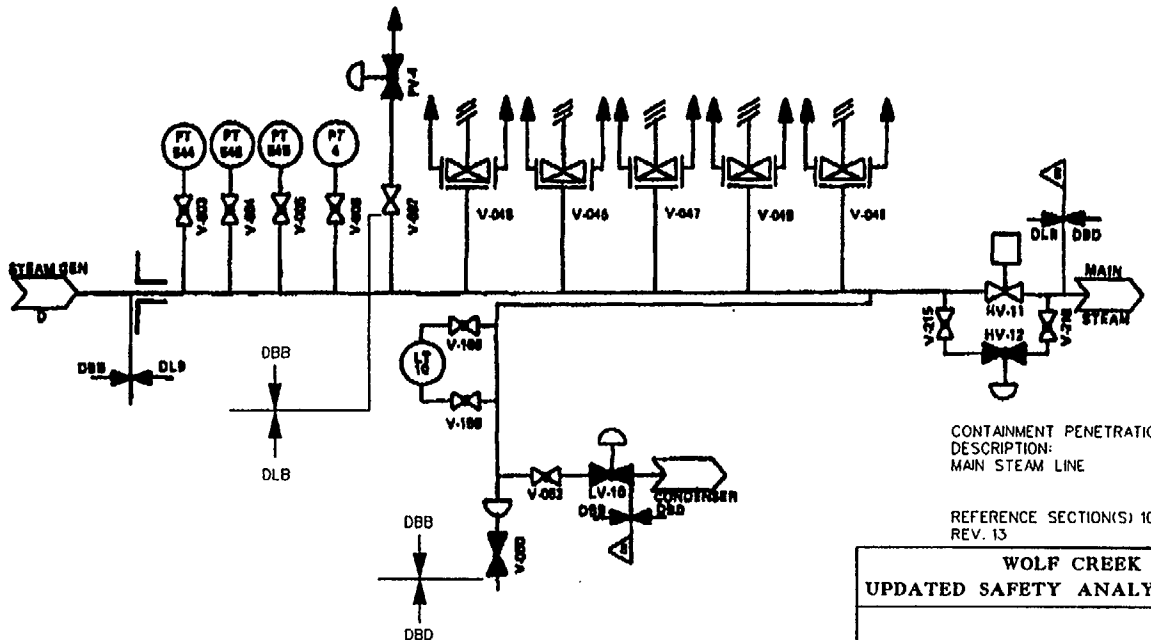
APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO 60547, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT DEGRADED. THE BARRIER OR BARRIER AGAINST FISSILE PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES SEPARATING FROM THE STEAM GENERATOR SHELL.

AS SHOWN ON FIGURE 10.2-1, THE STEAM GENERATOR SHELL EXTENDS TO THE VENT VALVES ON THE CONDENSATE POTS FOR THE MAIN STEAM FLOW TRANSMITTERS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-1
DESCRIPTION:
MAIN STEAM LINE

REFERENCE SECTION(S) 10.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 1 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: STEAM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 37.9ft

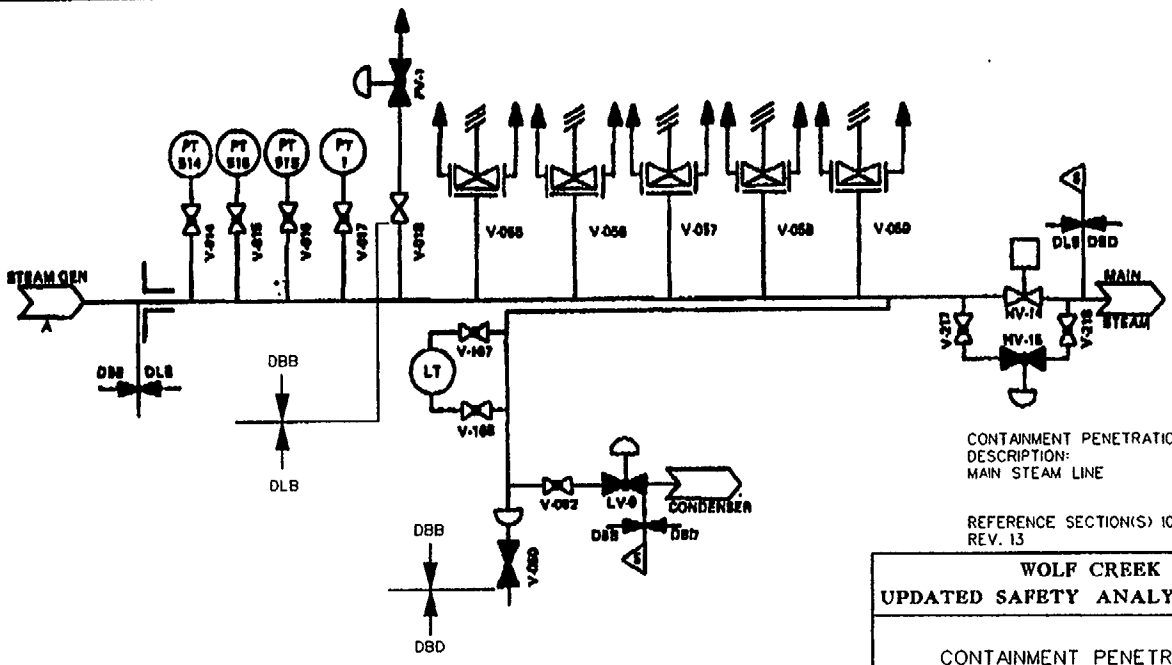
APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC47, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSIION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

AS SHOWN ON FIGURE 10.3-1, THE STEAM GENERATOR SHELL EXTENDS TO THE VENT VALVES ON THE CONDENSATE POTS FOR THE MAIN STEAM FLOW TRANSMITTERS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-2
DESCRIPTION:
MAIN STEAM LINE

REFERENCE SECTION(S) 10.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 2 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: STEAM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 37.9ft

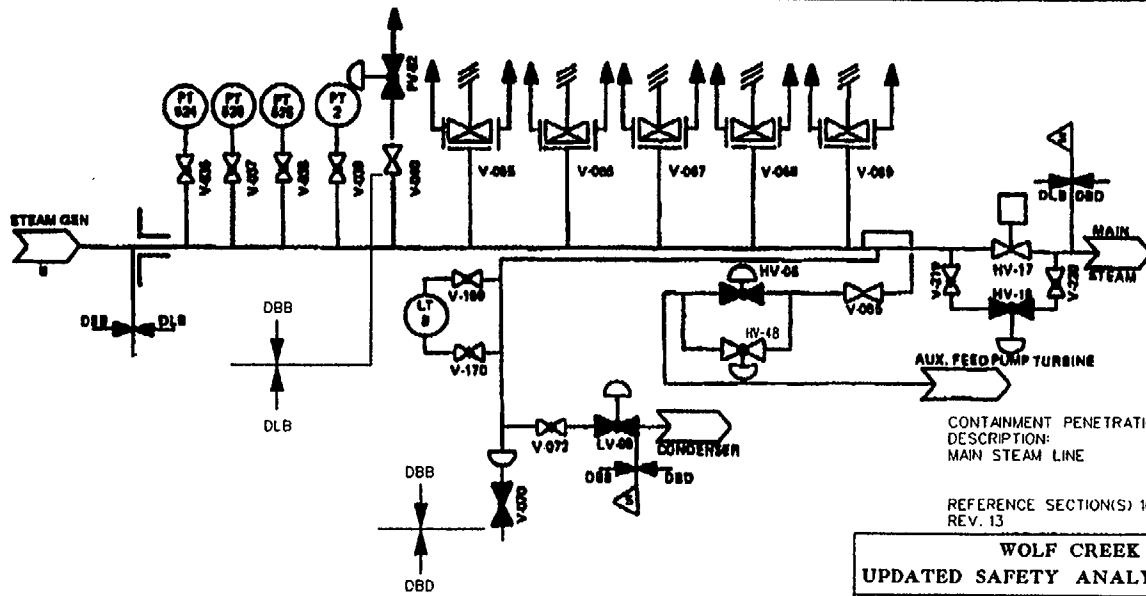
APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC'S, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BRANDED. THE BARRIER OR BARRIER ABSENCE PERIOD PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE MANDATE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES BRANCHED FROM THE STEAM GENERATOR SHELLS.

AS SHOWN ON FIGURE 10.3-1, THE STEAM GENERATOR SHELL EXTENDS TO THE VENT VALVES ON THE CONDENSATE POTS FOR THE MAIN STEAM FLOW TRANSMITTERS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-3
DESCRIPTION:
MAIN STEAM LINE

REFERENCE SECTION(S) 10.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 3 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: STEAM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 40.0ft

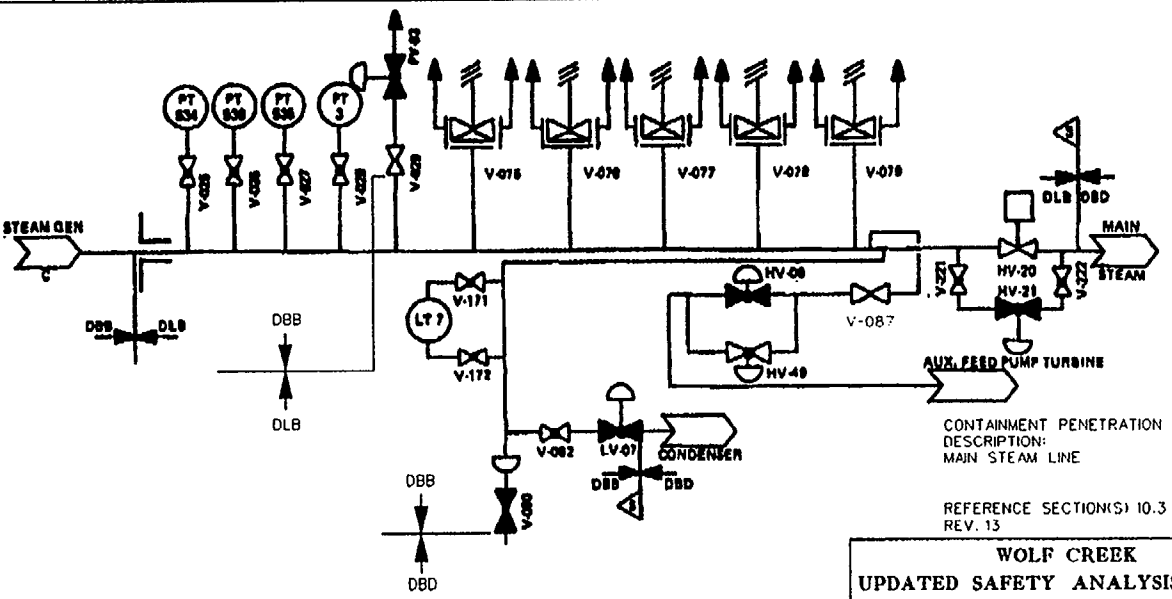
APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC07, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FRESH PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

AS SHOWN ON FIGURE 10.3-1, THE STEAM GENERATOR SHELL EXTENDS TO THE VENT VALVES ON THE CONDENSATE POTS FOR THE MAIN STEAM FLOW TRANSMITTERS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-4
DESCRIPTION: MAIN STEAM LINE

REFERENCE SECTION(S) 10.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 4 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: WATER

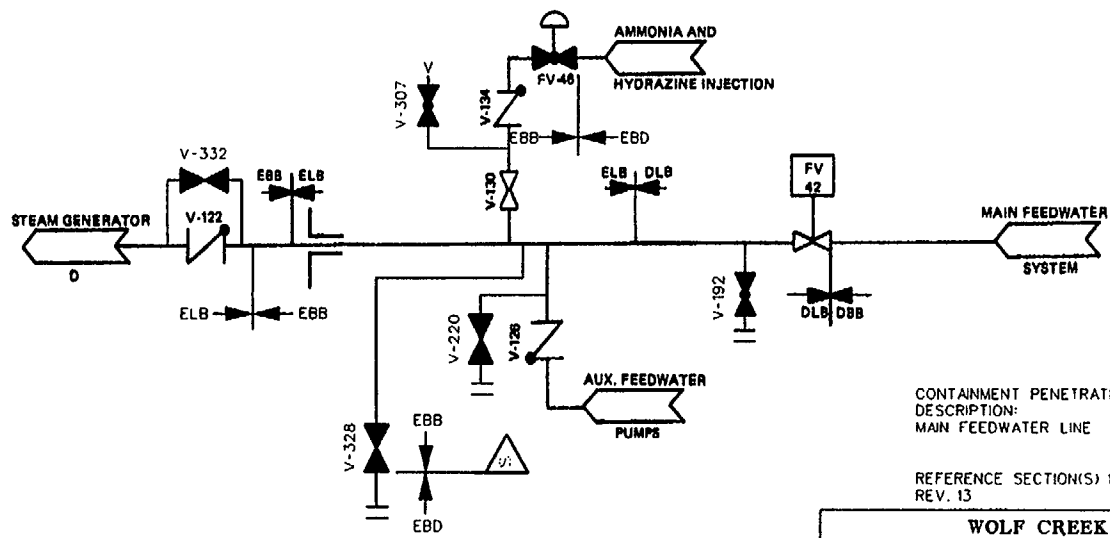
LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 15ft

APPLICABLE
GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC-67, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINER EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-5
DESCRIPTION:
MAIN FEEDWATER LINE

REFERENCE SECTION(S) 10.4.7
REV. 13

WOLF CREEK UPDATED SAFETY ANALYSIS REPORT
CONTAINMENT PENETRATIONS FIGURE 6.2.4-1 PAGE 5 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

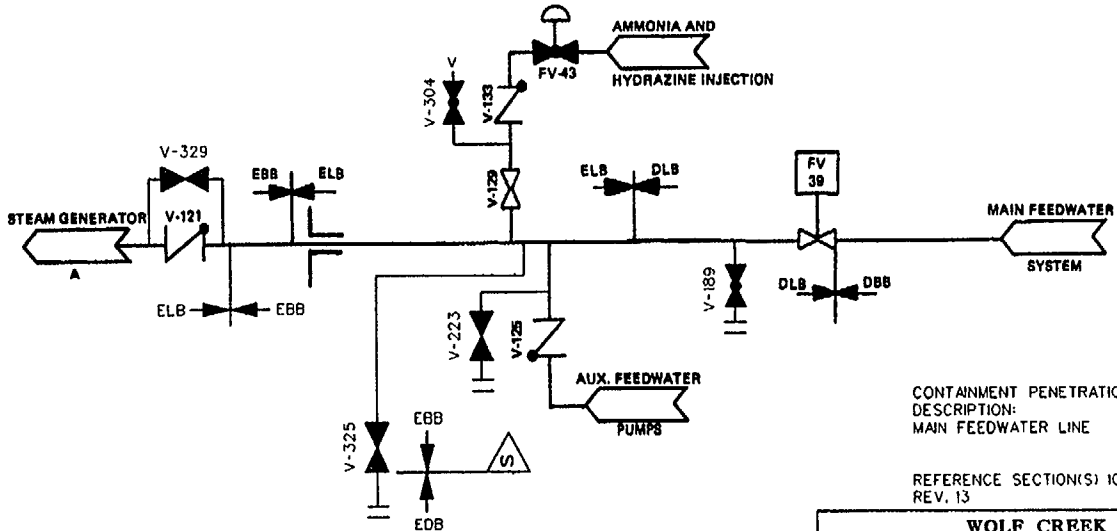
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 13.4 FT

APPLICABLE CDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC87, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-6
DESCRIPTION:
MAIN FEEDWATER LINE

REFERENCE SECTION(S) 10.4.7
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 6 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: WATER

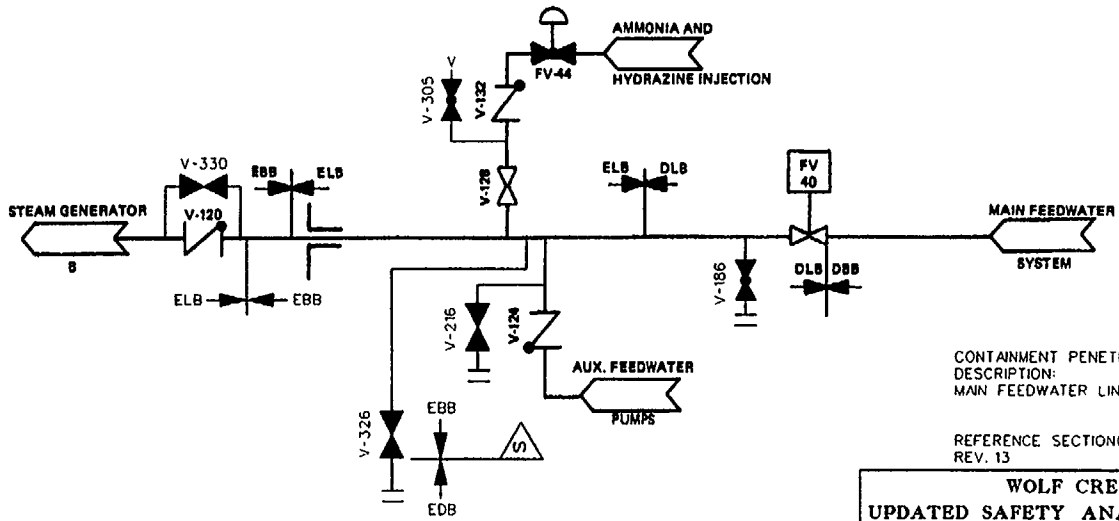
LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 13.4 FT

APPLICABLE
GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC27, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-7
DESCRIPTION:
MAIN FEEDWATER LINE

REFERENCE SECTION(S) 10.4.7
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 7 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

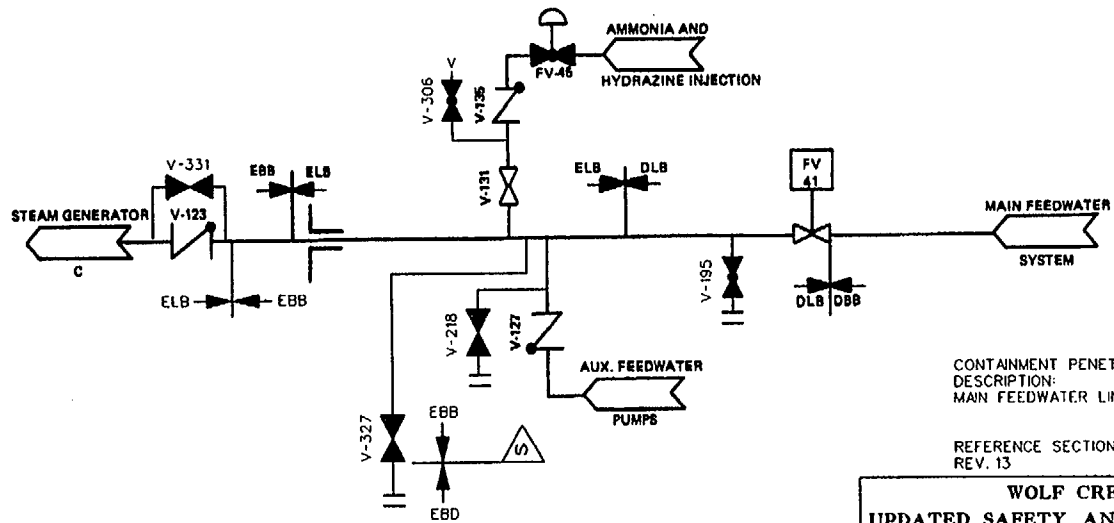
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 15.2 FT

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO ODC-87, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO P-8
DESCRIPTION:
MAIN FEEDWATER LINE
REFERENCE SECTION(S) 10.4.7
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 8 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

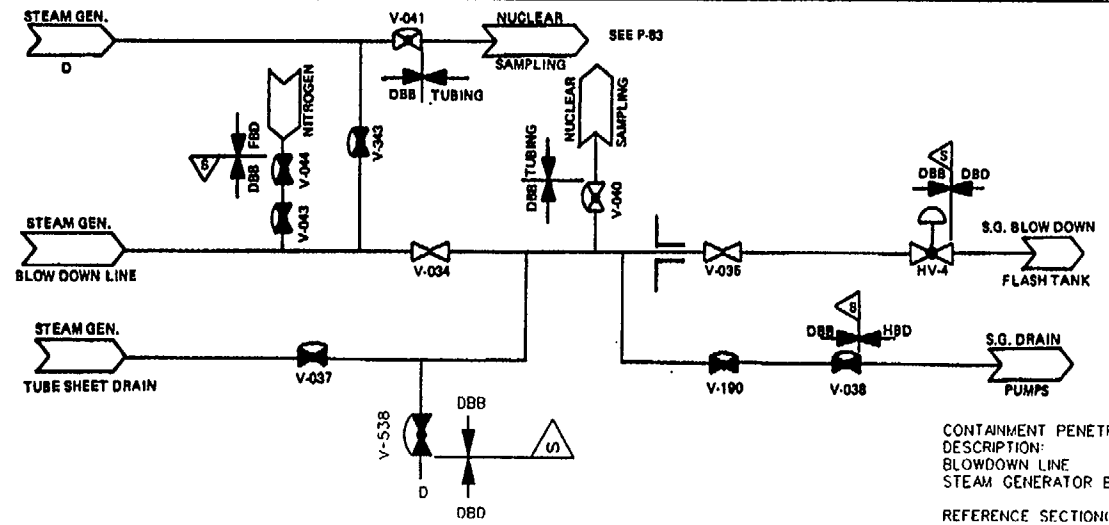
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 8.5 FT

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC-87, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED, THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-9
 DESCRIPTION:
 BLOWDOWN LINE
 STEAM GENERATOR BLOWDOWN SYSTEM
 REFERENCE SECTION(S) 10.4.8
 REV. 13

**WOLF CREEK
 UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 9 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

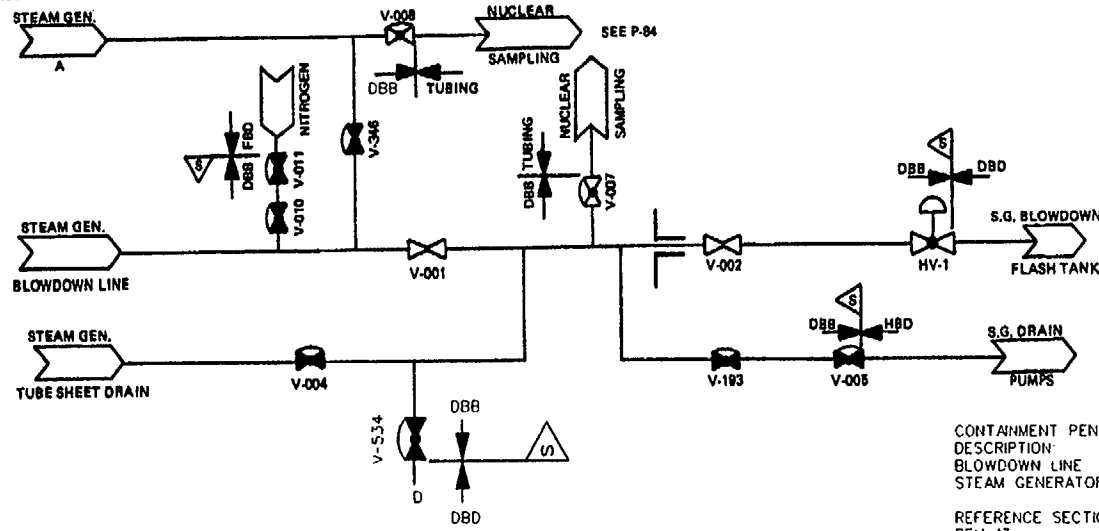
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 5.8 FT

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC-67, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED, THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-10
DESCRIPTION:
BLOWDOWN LINE
STEAM GENERATOR BLOWDOWN SYSTEM
REFERENCE SECTION(S) 10.4.8
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 10 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

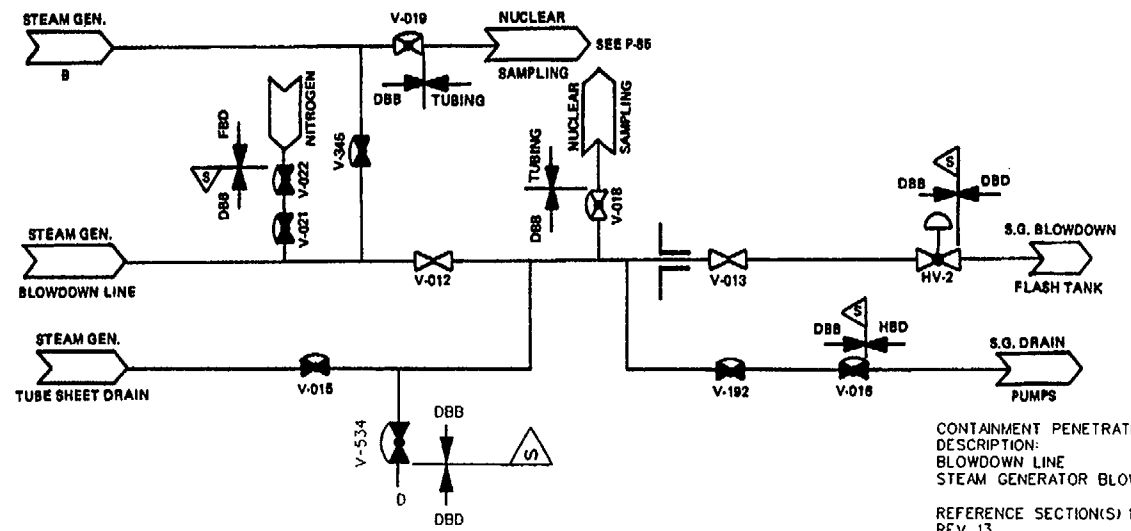
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 5.3 FT

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO ODCST, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED, THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-11
 DESCRIPTION:
 BLOWDOWN LINE
 STEAM GENERATOR BLOWDOWN SYSTEM
 REFERENCE SECTION(S) 10.4.8
 REV. 13

**WOLF CREEK
 UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 11 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

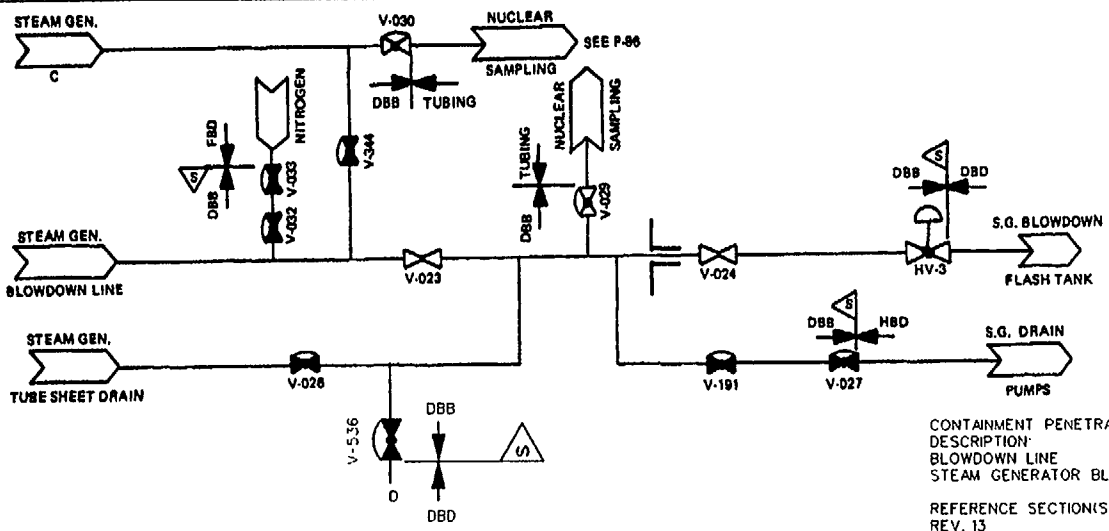
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 6.8 FT

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC-87, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-12
DESCRIPTION:
BLOWDOWN LINE
STEAM GENERATOR BLOWDOWN SYSTEM

REFERENCE SECTION(S) 10.4.8
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 12 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ENHV-07	12/12	OUTSIDE	OUT	GATE	MOTOR	4	CIS-A	REM/MAN	30	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

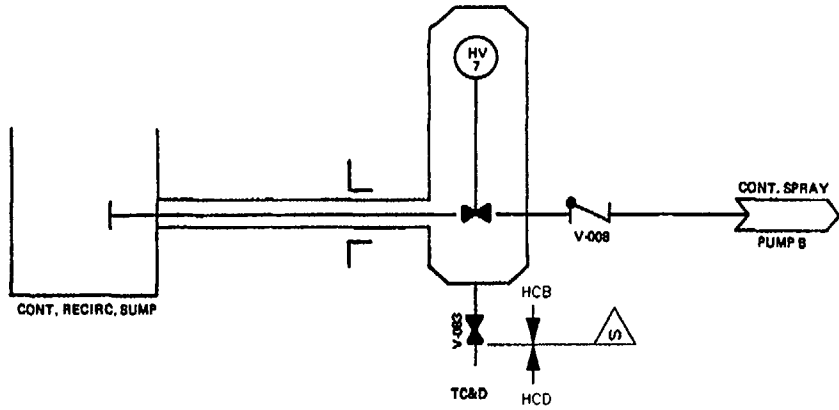
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE CONTAINMENT SPRAY SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A SINGLE REMOTE-MANUAL ISOLATION IS PROVIDED, LOCATED WITHIN A WATER-TIGHT COMPARTMENT OUTSIDE THE CONTAINMENT, FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

LOCAL TESTING OF THE VALVE OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND IMPROVED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION NO. P-13
 DESCRIPTION:
 RECIRCULATION LINE
 CONTAINMENT SPRAY SYSTEM
 REFERENCE SECTION(S) 6.2.2
 REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 13 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHV-881B	14/14	OUTSIDE	OUT	GATE	MOTOR	4	REM/MAN	SIS AND RWST-LO	N/A	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A
EJHV-24	1/1	OUTSIDE	OUT	GATE	SOLENOID	4	NONE	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
EJHV-26	1/1	OUTSIDE	OUT	GLOBE	SOLENOID	4	NONE	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
EJV-189	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

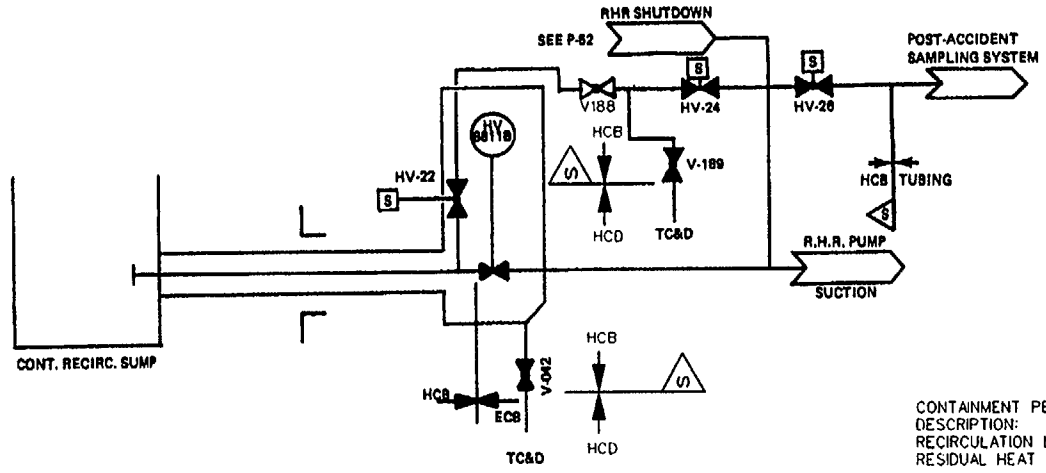
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE RHR SYSTEM AND THE POST-ACCIDENT SAMPLING SYSTEM (PASS). RHR IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A SINGLE REMOTE-MANUAL ISOLATION IS PROVIDED, LOCATED WITHIN A WATERTIGHT COMPARTMENT OUTSIDE THE CONTAINMENT, FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

LOCAL TESTING OF THE RHR VALVE OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

THE PASS LINE IS PROVIDED WITH THREE SAFETY-RELATED VALVES WHICH MEET THE REQUIREMENTS FOR CONTAINMENT ISOLATION AND ARE PROVIDED WITH AN ISOLATION POWER LOCKOUT SWITCH IN THE CONTROL ROOM. CREDIT IS TAKEN ONLY FOR THE TWO VALVES OUTSIDE THE ENCAPSULATION TANK BECAUSE THE VALVE INSIDE THE TANK CANNOT BE TYPE C TESTED.



CONTAINMENT PENETRATION NO. P-14
DESCRIPTION:
RECIRCULATION LINE
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7 & 6.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 14 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHV-8811A	14/14	OUTSIDE	OUT	GATE	MOTOR	1	REM/MAN	SIS AND RWST-LO	N/A	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A
EJHV-23	1/1	OUTSIDE	OUT	GATE	SOLENOID	1	NONE	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
EJHV-25	1/1	OUTSIDE	OUT	GATE	SOLENOID	1	NONE	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
EJV-187	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

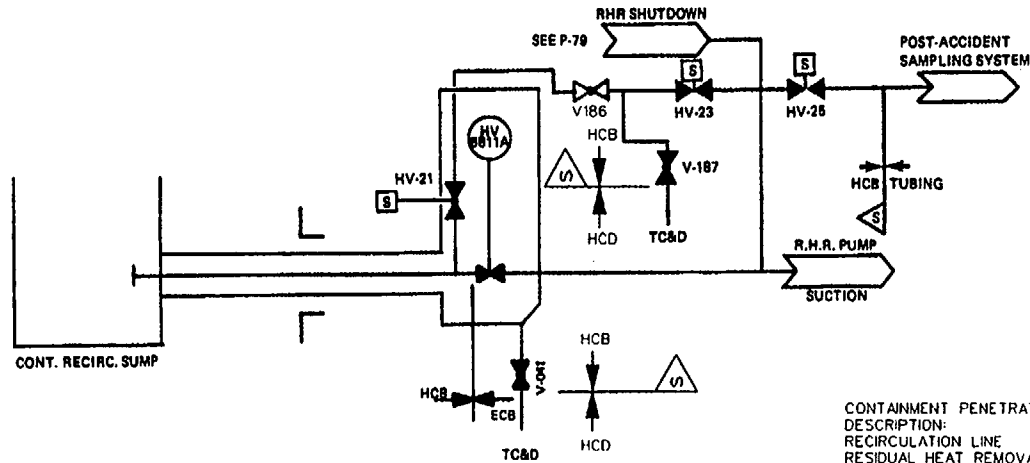
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE RHR SYSTEM AND THE POST-ACCIDENT SAMPLING SYSTEM (PASS). RHR IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A SINGLE REMOTE/MANUAL ISOLATION IS PROVIDED, LOCATED WITHIN A WATERTIGHT COMPARTMENT OUTSIDE THE CONTAINMENT, FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THIS SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

LOCAL TESTING OF THE RHR VALVE OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

THE PASS LINE IS PROVIDED WITH THREE SAFETY-RELATED VALVES WHICH MEET THE REQUIREMENTS FOR CONTAINMENT ISOLATION AND ARE PROVIDED WITH AN ISOLATION POWER LOCKOUT SWITCH IN THE CONTROL ROOM. CREDIT IS TAKEN ONLY FOR THE TWO VALVES OUTSIDE THE ENCAPSULATION TANK BECAUSE THE VALVE INSIDE THE TANK CANNOT BE TYPE C TESTED.



CONTAINMENT PENETRATION NO. P-15
DESCRIPTION:
RECIRCULATION LINE
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7 & 6.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 15 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ENHV-01	12/12	OUTSIDE	OUT	GATE	MOTOR	1	CIS-A	REM/MAN	30	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

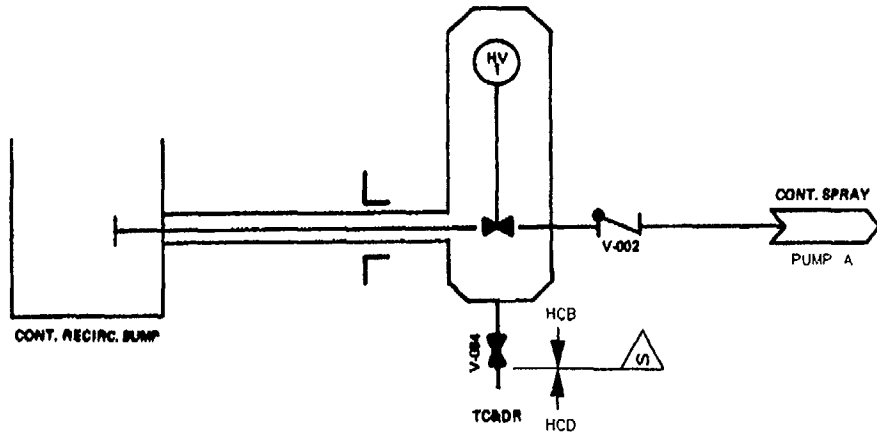
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
 THIS PENETRATION IS ASSOCIATED WITH THE CONTAINMENT SPRAY SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A SINGLE REMOTE-MANUAL ISOLATION IS PROVIDED, LOCATED WITHIN A WATER-TIGHT COMPARTMENT OUTSIDE THE CONTAINMENT, FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

LOCAL TESTING OF THE VALVE ON THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION NO. P-16
 DESCRIPTION:
 RECIRCULATION LINE
 CONTAINMENT SPRAY SYSTEM
 REFERENCE SECTION(S) 6.2.2
 REV. 13

**WOLF CREEK
 UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 16 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHCV-8825	8/1/8	INSIDE	IN	GLOBE	AIR	1	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EJHV-8840	10/10	OUTSIDE	IN	GATE	MOTOR	4	NONE	REM/MAN	15	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A
EJV-056	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-124	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-122	3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-116,120	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-175,6,7,8	3/1/8	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJ-8841A	8/8	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	A
EJ-8841B	8/8	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

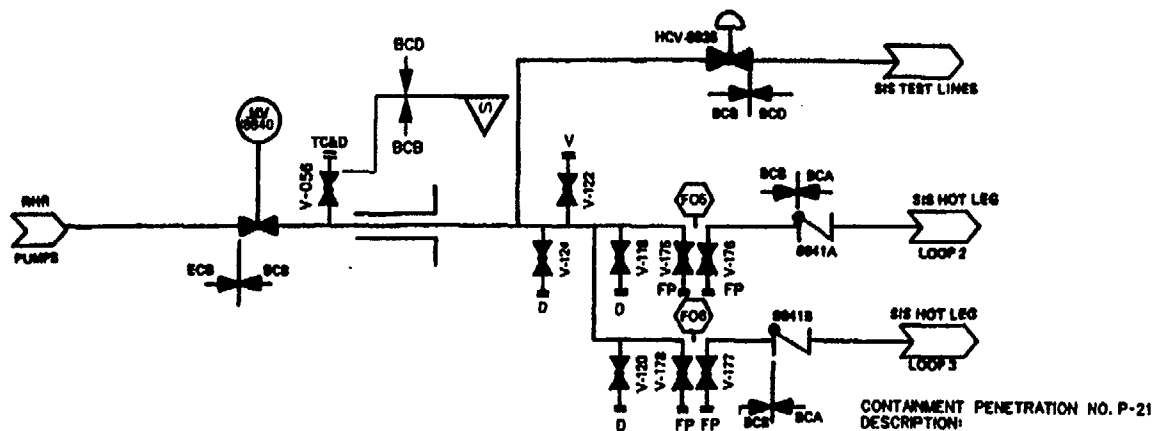
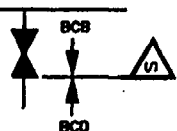
APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE RESIDUAL HEAT REMOVAL SYSTEM WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THE LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 5.2.3.

LOCAL TESTING OF THE VALVE ON THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

NOTE: ALL VENTS, DRAINS AND FLOW POINTS AS INDICATED BELOW.



CONTAINMENT PENETRATION NO. P-21
DESCRIPTION:
HOT LEG INJECTION
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7/6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 17 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BBHV-8351B	2/2	OUTSIDE	IN	GLOBE	MOTOR	4	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
BBV-354	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-246	3/4/3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV148	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

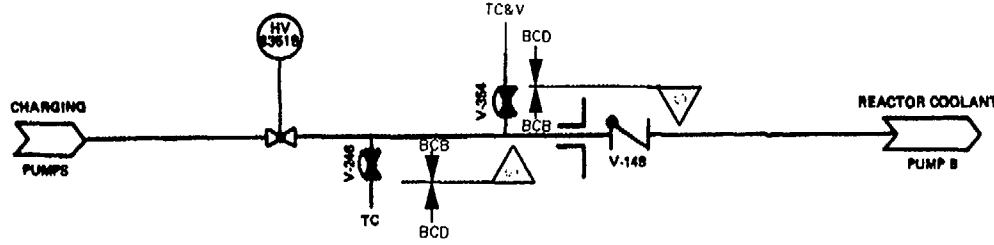
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 11.7ft.

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION PIPING HAS A HIGH PRESSURE WATER INFLOW WHICH PRECLUDES THE NEED FOR AUTOMATIC ISOLATION OF THIS PENETRATION. THE CVCS CHARGING PUMPS SUPPLY REACTOR COOLANT PUMP SEAL INJECTION WATER, AND THERE IS A POTENTIAL FOR DAMAGE TO THE REACTOR COOLANT PUMP IF UNDESIRED ISOLATION SHOULD OCCUR.

THE ISOLATION CAN BE AFFECTED BY REMOTE-MANUAL CLOSURE OF THE MOTOR-OPERATED VALVE BY THE OPERATOR PRIOR TO THE CHARGING PUMPS COMPLETING THEIR SAFETY FUNCTION.



CONTAINMENT PENETRATION NO. P-22
 DESCRIPTION:
 RCP SEAL WATER SUPPLY
 REACTOR COOLANT SYSTEM
 REFERENCE SECTION(S) 5.0
 REV. 13

**WOLF CREEK
 UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 18 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BGHV-8160	3/3	INSIDE	OUT	GLOBE	AIR	1	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C
BGV-363	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	NONE	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BGHV-8152	3/3	OUTSIDE	OUT	GLOBE	AIR	4	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

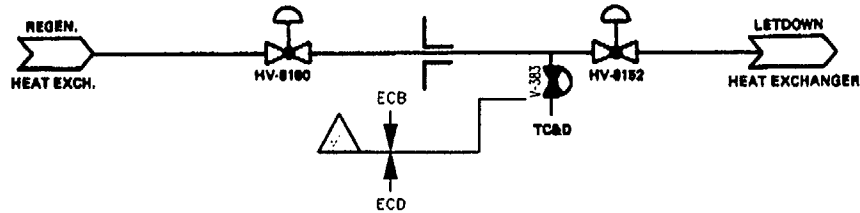
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 11.6ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-23
DESCRIPTION:
NORMAL LETDOWN
CHEMICAL & VOLUME CONTROL SYSTEM
REFERENCE SECTION(S) 9.3.4
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 19 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BGHV-8112	2/2	INSIDE	OUT	GLOBE	MOTOR	1	CIS-A	NONE	10	OPEN	OPEN	AS IS	CLOSED	N/A	C
BGV-135	3/4/3/4	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
BGHV-8100	2/2	OUTSIDE	OUT	GLOBE	MOTOR	4	CIS-A	NONE	10	OPEN	OPEN	AS IS	CLOSED	N/A	C
BGV-457	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

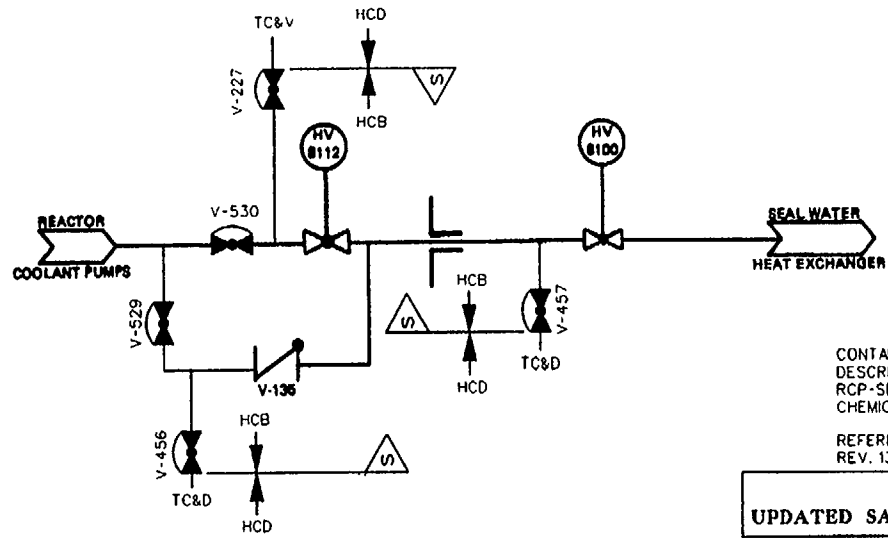
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 12.6ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-24
DESCRIPTION:
RCP-SEAL WATER RETURN
CHEMICAL & VOLUME CONTROL SYSTEM
REFERENCE SECTION(S) 9.3.4
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 20 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BLHV-8047	3/3	OUTSIDE	IN	DIAPHRAGM	AIR	4	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C
BLV-054	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BL-8046	3/3	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	CLOSED	N/A	C

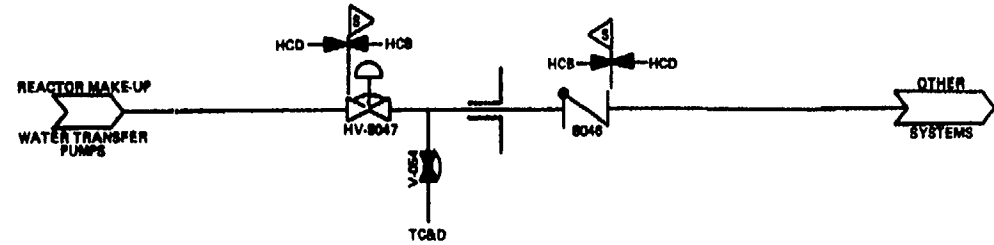
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 12.2ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-25
DESCRIPTION:
REACTOR MAKEUP WATER
REACTOR MAKEUP WATER SYSTEM
REFERENCE SECTION(S) 9.2.7
REV. 11

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 21 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
HBHV-7176	3/3	INSIDE	OUT	DIAPHRAGM	AIR	1	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C
HBHV-7136	3/3	OUTSIDE	OUT	DIAPHRAGM	AIR	4	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C
HBV-419	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

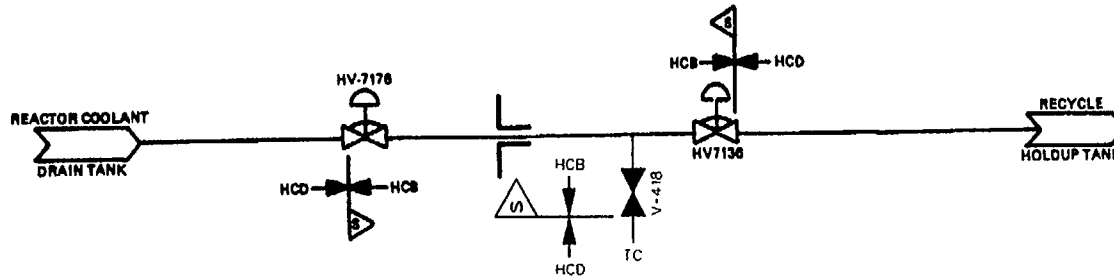
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 11.9ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-26
DESCRIPTION:
REACTOR COOLANT DRAIN TANK
DISCHARGE
LIQUID RADWASTE SYSTEM
REFERENCE SECTION(S) 11.2
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 22 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHV-8809B	10/10	OUTSIDE	IN	GATE	MOTOR	4	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	A
EJV-058	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJHCV-8890B	3/4/3/4	INSIDE	IN	GLOBE	AIR	4	CIS-A	NONE	13	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EJV-086	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-088,090	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EP-8818C	6/6	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	OPEN	CLOSED	A
EJV-178,180,181,182	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EP-8818D	6/6	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	OPEN	CLOSED	A
EJV-166	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

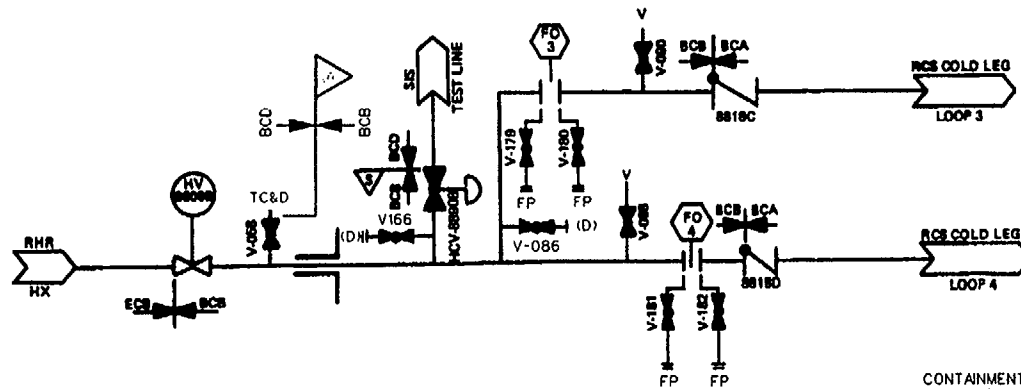
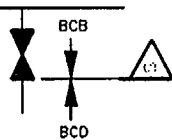
APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE RESIDUAL HEAT REMOVAL SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

LOCAL TESTING OF THE VALVE OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

NOTE: ALL VENTS, DRAINS AND FLOW POINTS AS INDICATED BELOW.



CONTAINMENT PENETRATION NO. P-27
DESCRIPTION:
COLD LEG INJECTION
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7 & 6.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 23 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EFHV-32	14/14	OUTSIDE	IN	BUTTERFLY	MOTOR	4	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
EFHV-34	14/14	INSIDE	IN	BUTTERFLY	MOTOR	4	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
EFV-278	1/1	INSIDE	N/A	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

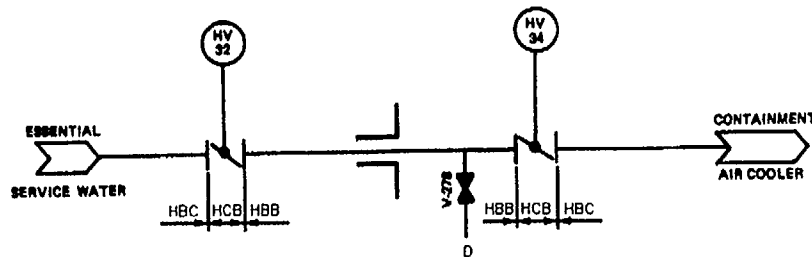
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 17.2ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE ESSENTIAL SERVICE WATER SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED INSIDE, AND A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED OUTSIDE THE CONTAINMENT.

THESE VALVES ARE POWERED FROM THE SAME POWER SOURCE FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS A CLOSED SYSTEM INSIDE THE CONTAINMENT, WHICH IS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASME SECTION III, CLASS 3 REQUIREMENTS. THE ESSENTIAL SERVICE WATER LINES ARE NOT VENTED OR DRAINED DURING A TYPE A TEST SINCE THE AIR COOLERS MAY BE REQUIRED TO COOL THE CONTAINMENT. A TYPE C TEST IS PERFORMED.



CONTAINMENT PENETRATION NO. P-28
DESCRIPTION:
ESW TO CONTAINMENT AIR COOLER
ESSENTIAL SERVICE WATER SYSTEM

REFERENCE SECTION(S) 6.2.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 24 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EFHV-46	14/14	INSIDE	OUT	BUTTERFLY	MOTOR	4	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
EFV-279	1/1	INSIDE	N/A	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EFHV-50	14/14	OUTSIDE	OUT	BUTTERFLY	MOTOR	4	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

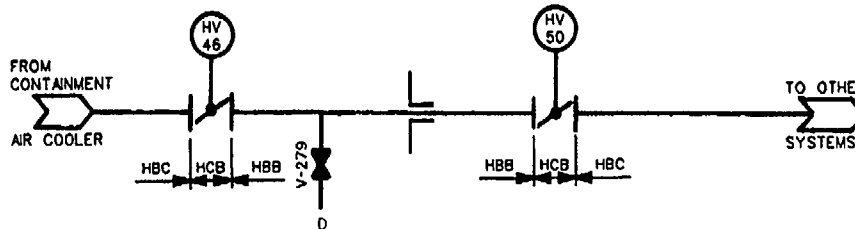
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE ESSENTIAL SERVICE WATER SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED INSIDE AND A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED OUTSIDE THE CONTAINMENT.

THESE VALVES ARE POWERED FROM THE SAME POWER SOURCE FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS A CLOSED SYSTEM INSIDE THE CONTAINMENT, WHICH IS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASME SECTION III, CLASS 3 REQUIREMENTS.

THE ESSENTIAL SERVICE WATER LINES ARE NOT VENTED OR DRAINED DURING A TYPE A TEST SINCE THE AIR COOLERS MAY BE REQUIRED TO COOL THE CONTAINMENT. A TYPE D TEST IS PERFORMED.



CONTAINMENT PENETRATION NO. P-29
DESCRIPTION:
ESW FROM CONTAINMENT AIR COOLERS
ESSENTIAL SERVICE WATER SYSTEM
REFERENCE SECTION(S) 6.2.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 25 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
KAFV-29	1/2/2	OUTSIDE	IN	GLOBE	AIR	1	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
KAV-218	1/2/1/2	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
KAV-204	1/2/1/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	CLOSED	OPEN	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

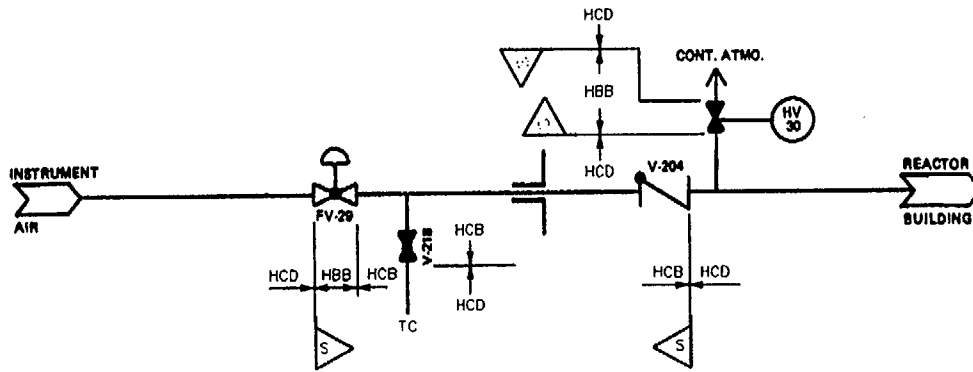
FLUID CONTAINED: AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 7.9ft

APPLICABLE CDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-30
DESCRIPTION:
INST. AIR AND H₂ CONTROL MAKEUP AIR
COMPRESSED AIR SYSTEM
REFERENCE SECTION(S) 9 3 1
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 26 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
LFFV-95	6/6	INSIDE	OUT	GATE	MOTOR	1	CIS-A	NONE	30	OPEN	OPEN	AS IS	CLOSED	N/A	C
LFFV-96	6/6	OUTSIDE	OUT	GLOBE	AIR	4	CIS-A	NONE	4	SEE NOTES	SEE NOTES	CLOSED	CLOSED	N/A	C
LFV-093	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

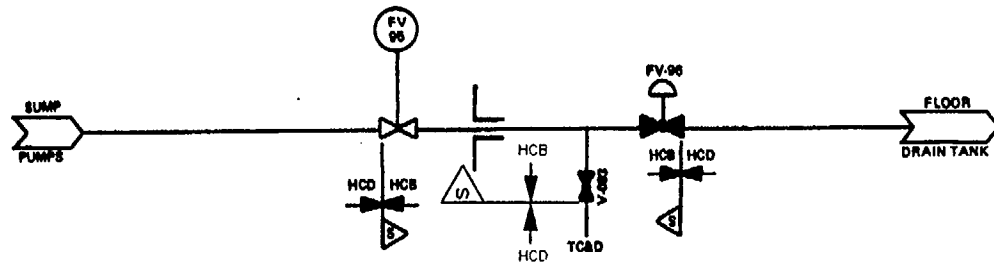
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 18.3ft

APPLICABLE GDC NO 56

GENERAL COMMENTS:

VALVE FV-96 OPENS ONLY WHEN ONE OF THE CONTAINMENT SUMP PUMPS ARE OPERATING. THE CONTROL GRADE SIGNAL TO OPEN THE VALVE IS NEGATED WHEN A PROTECTION GRADE CIS-A SIGNAL IS RECEIVED



CONTAINMENT PENETRATION NO. P-32
DESCRIPTION:
CONTAINMENT SUMP PUMP DISCHARGE
FLOOR AND EQUIPMENT DRAINAGE SYSTEM
REFERENCE SECTION(S) 9.3.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 27 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GPV-010	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
FLANGES	6/6	BOTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	B

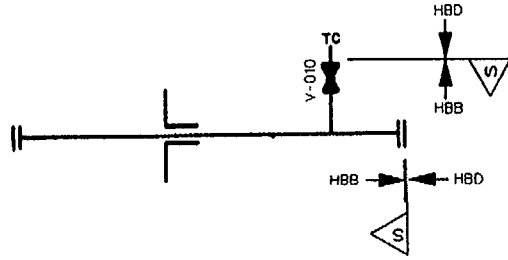
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
FLANGES ARE REMOVED ONLY DURING PERFORMANCE OF TYPE A TEST



CONTAINMENT PENETRATION NO. P-34
DESCRIPTION:
CONTAINMENT PRESSURIZATION LINE
ILRT PRESSURIZATION SYSTEM
REFERENCE SECTION(S) 6 2 6
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 28 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BBHV-8351C	2/2	OUTSIDE	IN	GLOBE	MOTOR	4	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
BBV-356	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-247	3/4/ 3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-178	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

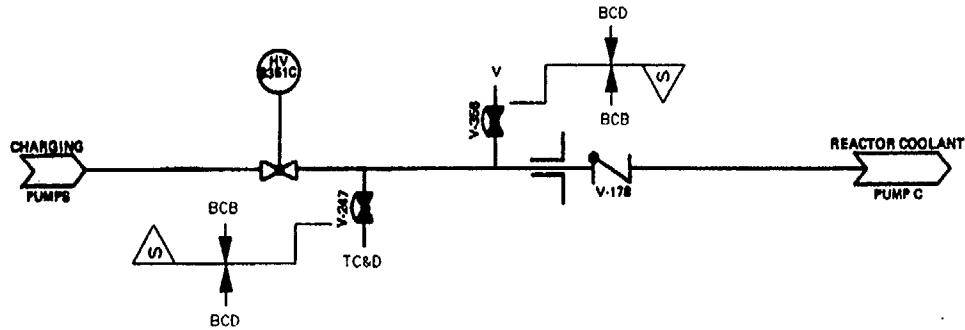
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 17.5

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION PIPING HAS A HIGH PRESSURE WATER INFLOW WHICH PRECLUDES THE NEED FOR AUTOMATIC ISOLATION OF THIS PENETRATION. THE CYCS CHARGING PUMPS SUPPLY REACTOR COOLANT PUMP SEAL INJECTION WATER, AND THERE IS A POTENTIAL FOR DAMAGE TO THE REACTOR COOLANT PUMP IF UNDESIRE ISOLATION SHOULD OCCUR.

THE ISOLATION CAN BE AFFECTED BY REMOTE-MANUAL CLOSURE OF THE MOTOR-OPERATED VALVE BY THE OPERATOR PRIOR TO THE CHARGING PUMPS COMPLETING THEIR SAFETY FUNCTION.



CONTAINMENT PENETRATION NO. P-39
DESCRIPTION:
RCP - SEAL WATER SUPPLY
REACTOR COOLANT SYSTEM
REFERENCE SECTION(S) 5 0
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 29 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BBHV-835ID	2/2	OUTSIDE	IN	GLOBE	MOTOR	4	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
BBV-358	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-248	3/4/ 3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-208	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

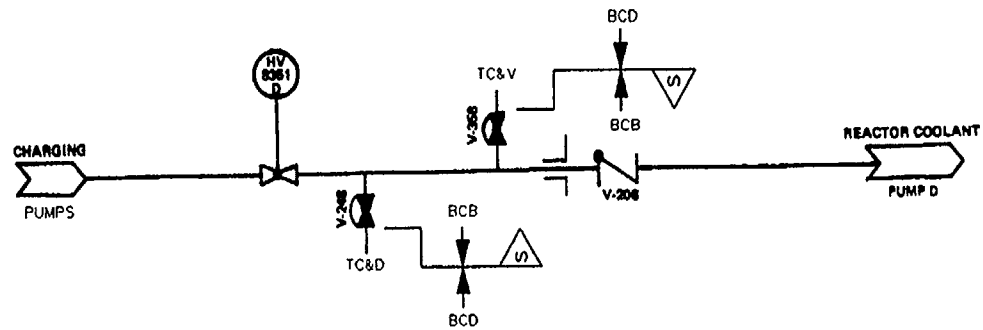
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 17.5ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION PIPING HAS A HIGH PRESSURE WATER INFLOW WHICH PRECLUDES THE NEED FOR AUTOMATIC ISOLATION OF THIS PENETRATION. THE CVCS CHARGING PUMPS SUPPLY REACTOR COOLANT PUMP SEAL INJECTION WATER, AND THERE IS A POTENTIAL FOR DAMAGE TO THE REACTOR COOLANT PUMP IF UNDESIRED ISOLATION SHOULD OCCUR.

THE ISOLATION CAN BE AFFECTED BY REMOTE-MANUAL CLOSURE OF THE MOTOR-OPERATED VALVE BY THE OPERATOR PRIOR TO THE CHARGING PUMPS COMPLETING THEIR SAFETY FUNCTION.



CONTAINMENT PENETRATION NO. P-40
DESCRIPTION:
RCP - SEAL WATER SUPPLY
REACTOR COOLANT SYSTEM
REFERENCE SECTION(S) 5.0
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 30 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BBHV-8351A	2/2	OUTSIDE	IN	GLOBE	MOTOR	4	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
BBV-352	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-245	3/4/ 3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BBV-118	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES, SYS. YES NO

FLUID CONTAINED: WATER

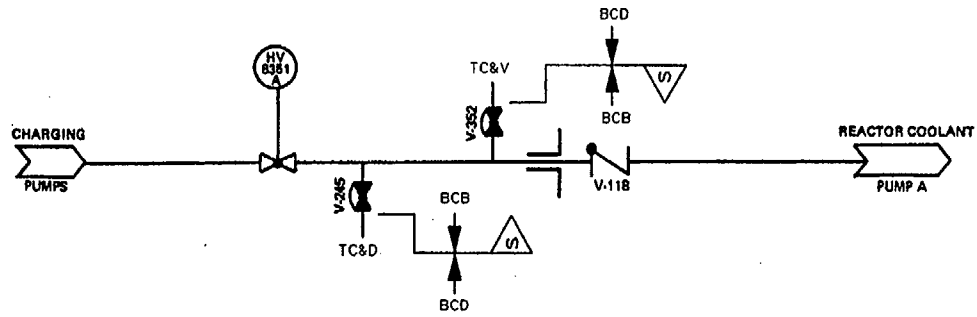
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 20.0ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION PIPING HAS A HIGH PRESSURE WATER INFLOW WHICH PRECLUDES THE NEED FOR AUTOMATIC ISOLATION OF THIS PENETRATION. THE CVCS CHARGING PUMPS SUPPLY REACTOR COOLANT PUMP SEAL INJECTION WATER, AND THERE IS A POTENTIAL FOR DAMAGE TO THE REACTOR COOLANT PUMP IF UNDESIRABLE ISOLATION SHOULD OCCUR.

THE ISOLATION CAN BE AFFECTED BY REMOTE-MANUAL CLOSURE OF THE MOTOR-OPERATED VALVE BY THE OPERATOR PRIOR TO THE CHARGING PUMPS COMPLETING THEIR SAFETY FUNCTION.



CONTAINMENT PENETRATION NO. P-41
DESCRIPTION:
RCP - SEAL WATER SUPPLY
REACTOR COOLANT SYSTEM
REFERENCE SECTION(S) 5.0
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 31 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
HDV-016	2/2	OUTSIDE	IN	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
HDV-023	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	N/A	N/A	CLOSED	N/A	N/A
HDV-017	2/2	INSIDE	IN	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

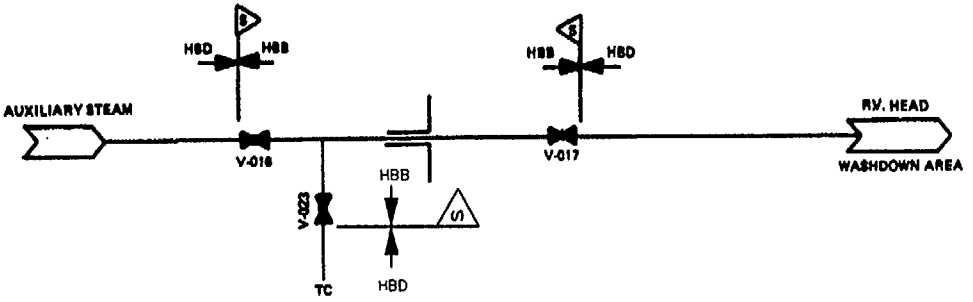
FLUID CONTAINED: STEAM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 14.9ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-43
DESCRIPTION:
DECONTAMINATION STEAM
DECONTAMINATION SYSTEM
REFERENCE SECTION(S) 12.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 32 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
HBHV-7126	3/4/ 3/4	INSIDE	OUT	DIAPHRAGM	AIR	1	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C
HBHV-7150	3/4/ 3/4	OUTSIDE	OUT	DIAPHRAGM	AIR	4	CIS-A	NONE	10	OPEN	OPEN	CLOSED	CLOSED	N/A	C
HBV-420	3/4/ 3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

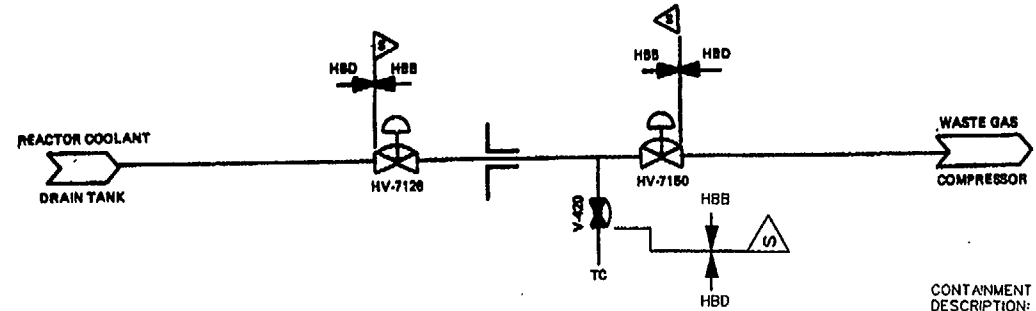
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: GAS

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 12.3ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-44
DESCRIPTION:
R.C.D. TANK VENT LINE
LIQUID RADWASTE SYSTEM
REFERENCE SECTION(S) 11.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 33 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EPV-046	1/1	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
EPV-043	3/4 / 3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EPHV-8880	1/1	OUTSIDE	IN	GLOBE	AIR	4	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY FEATURES SYS YES NO

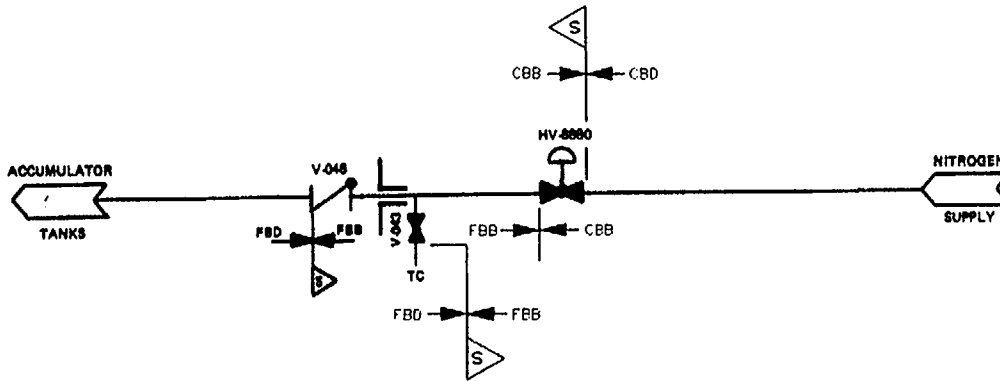
FLUID CONTAINED: GAS

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 13.0ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-45
DESCRIPTION:
NITROGEN SUPPLY LINE
ACCUMULATOR SAFETY INJECTION SYSTEM
REFERENCE SECTION(S) 6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 34 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EMHV-8802B	4/4	OUTSIDE	IN	GATE	MOTOR	4	NONE	REM/MAN	N/A	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A
EMHV-8824	3/4/ 3/4	INSIDE	OUT	GLOBE	AIR	1	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EMV-003	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	A
EMV-004	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	A
EMV-060,061, 063, 064 EMV-217, 169	3/4/ 3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-170, 172	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-059	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

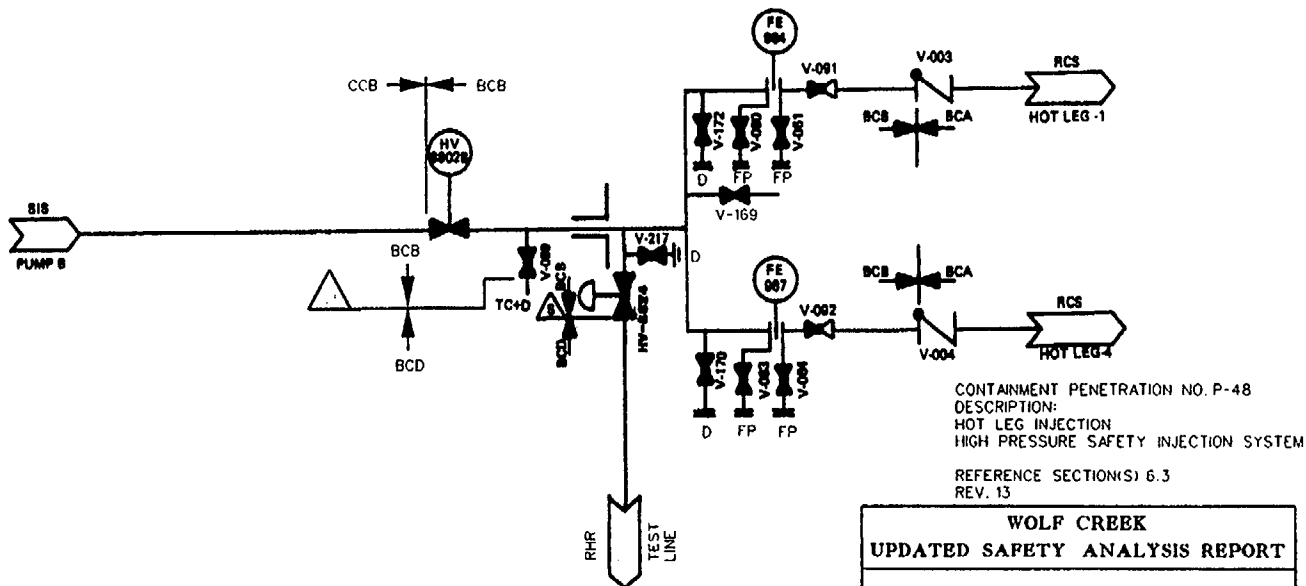
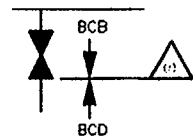
APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE HIGH PRESSURE COOLANT INJECTION SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 9.3.3.

LOCAL TESTING OF THE VALVES OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

NOTE: ALL VENTS, DRAINS AND FLOW POINTS AS INDICATED BELOW.



CONTAINMENT PENETRATION NO. P-48
DESCRIPTION:
HOT LEG INJECTION
HIGH PRESSURE SAFETY INJECTION SYSTEM
REFERENCE SECTION(S) 6.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 35 OF 74

14

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EMHV-8835	4/4	OUTSIDE	IN	GATE	MOTOR	4	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	A
EMHV-8823	3/4-3/4	INSIDE	OUT	GLOBE	AIR	1	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EPV-020	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A
EPV-010	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A
EPV-040	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A
EPV-030	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A
EMV-067	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-068 thru EMV-075	3/4-3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-218 EMV162 thru 168	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

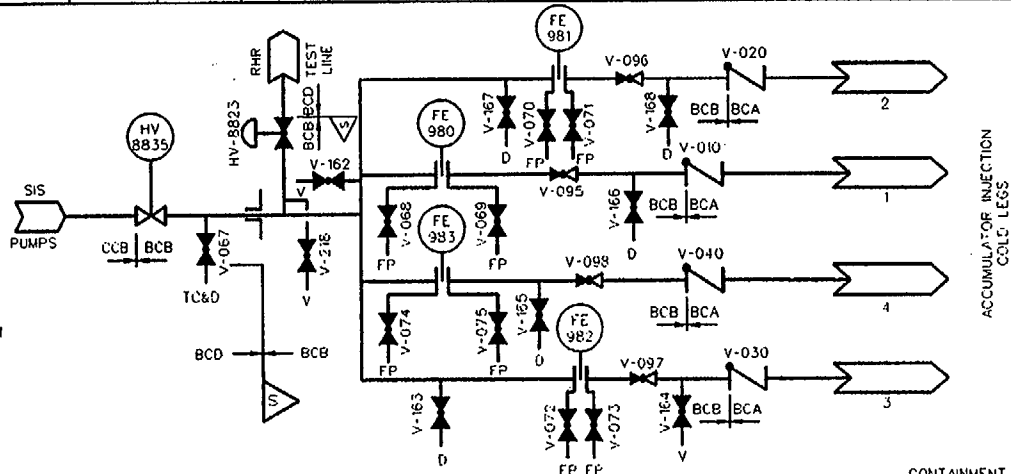
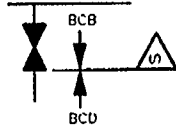
APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE HIGH PRESSURE COOLANT INJECTION SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 9.3.3.

LOCAL TESTING OF THE VALVES OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

NOTE: ALL VENTS, DRAINS AND FLOW POINTS AS INDICATED BELOW.



CONTAINMENT PENETRATION NO. P-49
DESCRIPTION:
COLD LEG INJECTION
HIGH PRESSURE COOLANT
INJECTION SYSTEM
REFERENCE SECTION (S) 6.3
REV. 14

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
(PAGE 36 OF 74)

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GPV-011	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
GPV-012	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
FLANGES	1/1	BOTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	B

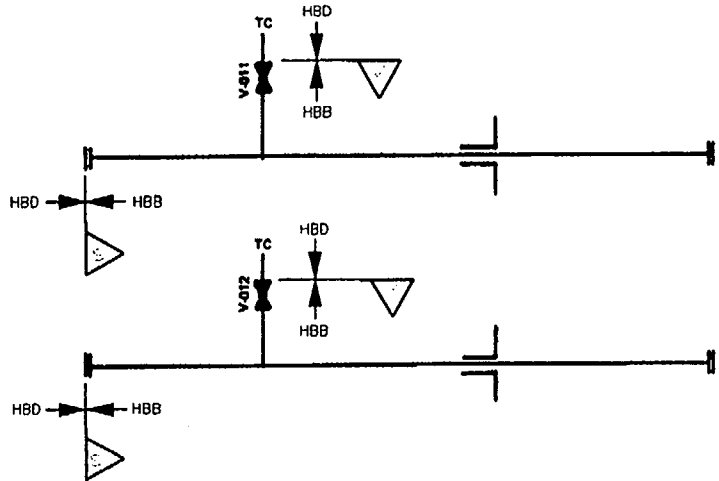
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
FLANGES ARE REMOVED ONLY DURING PERFORMANCE OF TYPE A TEST



CONTAINMENT PENETRATION NO. P-51
DESCRIPTION:
PRESSURE SENSING LINES
ILRT PRESSURIZATION SYSTEM
REFERENCE SECTION(S) 6.2.6
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 37 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHV-8701B	12/12	INSIDE	OUT	GATE	MOTOR	1	REM/MAN	NONE	120	CLOSED	OPEN	AS IS	CLOSED	N/A	A
EJ-8708B	3/3	INSIDE	N/A	RELIEF	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

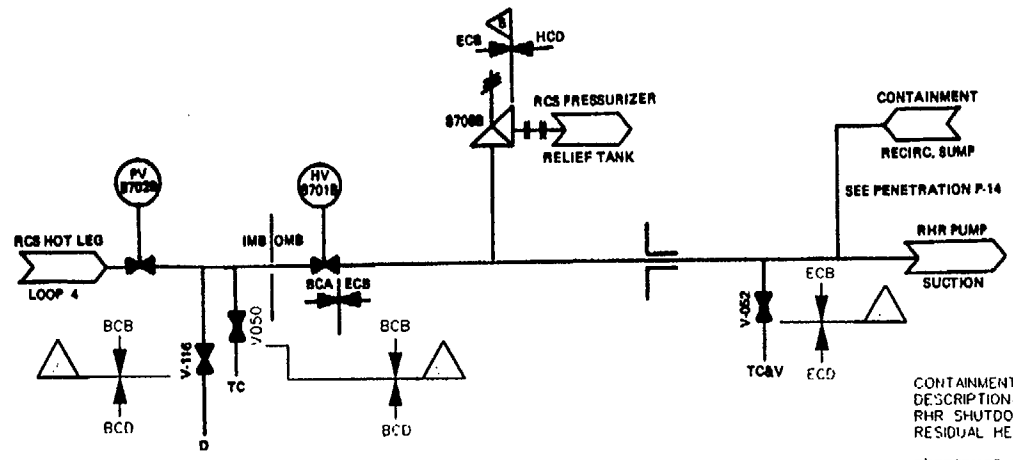
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THE RESIDUAL HEAT REMOVAL SYSTEM SUCTION LINE FROM THE REACTOR COOLANT SYSTEM CONTAINS TWO NORMALLY CLOSED, POWER-OPERATED REMOTE MANUAL VALVES IN SERIES INSIDE THE CONTAINMENT. THE VALVES ARE ALSO INTERLOCKED TO PREVENT THEM FROM BEING INADVERTENTLY OPENED. CONTAINMENT ISOLATION IS ASSURED BY SYSTEM ISOLATION VALVES CLOSEST TO THE CONTAINMENT AND THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT, WHICH IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 6.2.3.

LOCAL TESTING OF THE VALVE OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION NO. P-52
DESCRIPTION
RHR SHUTDOWN LINES
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7 & 6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 38 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ECV-084	6/6	INSIDE	IN	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	CLOSED	N/A	C
ECV-085	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
ECV-083	6/6	OUTSIDE	IN	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

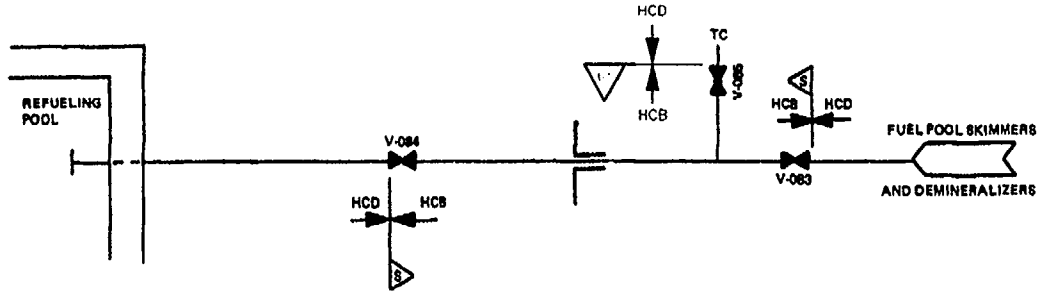
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 6.1 FT

APPLICABLE GDC NO 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-5.3
DESCRIPTION:
CLEANUP RETURN
FUEL POOL COOLING
AND CLEANUP SYSTEM
REFERENCE SECTION(S) 9.1.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 39 OF 74

VALVE NO	LINE/ VALVE SIZE, IN	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ECV-087	6/6	INSIDE	OUT	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	CLOSED	N/A	C
ECV-086	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
ECV-088	6/6	OUTSIDE	OUT	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	CLOSED	N/A	C

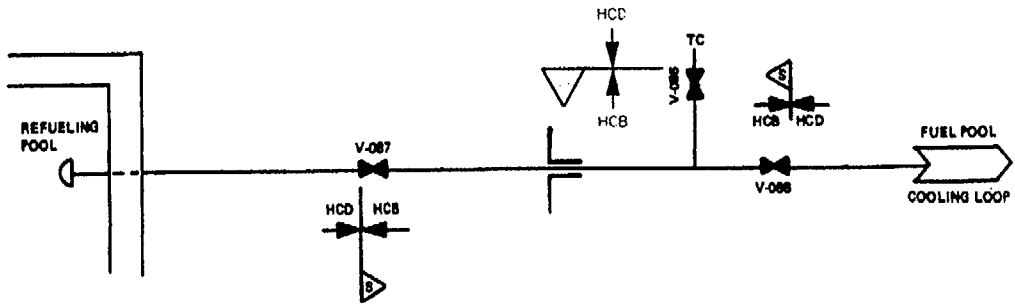
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 6.1 FT

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-54
DESCRIPTION:
REFUELING POOL CLEANUP LINE
FUEL POOL COOLING & CLEANUP SYSTEM
REFERENCE SECTION(S) 9.1.3
REV. 13

WOLF CREEK UPDATED SAFETY ANALYSIS REPORT
CONTAINMENT PENETRATIONS FIGURE 6.2.4-1 PAGE 40 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ECV-095	3/3	INSIDE	OUT	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	CLOSED	N/A	C
ECV-094	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
ECV-096	3/3	OUTSIDE	OUT	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	OPEN	N/A	CLOSED	N/A	C

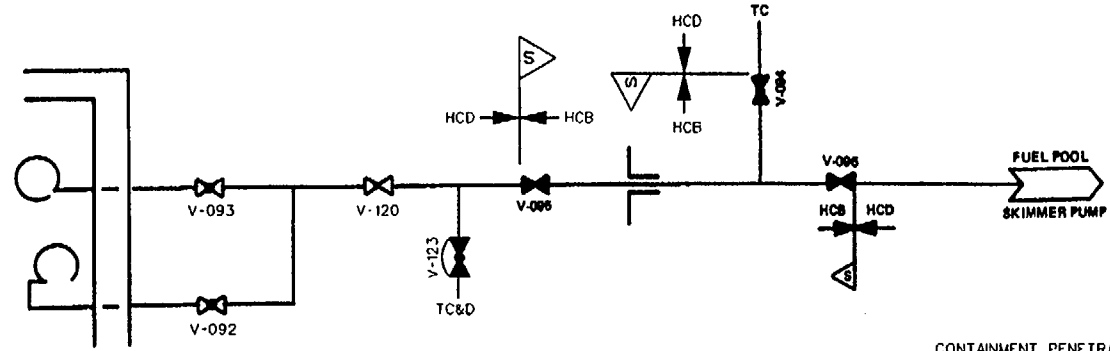
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 6.1 FT

APPLICABLE GDC NO 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-55
DESCRIPTION:
REFUELING POOL SKIMMER LINES
FUEL POOL COOLING & CLEANUP SYSTEM
REFERENCE SECTION(S) 9.1.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 41 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-9	1/1	INSIDE	IN	GATE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSHV-8	1/1	OUTSIDE	IN	GATE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSV-032	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: CONT. ATM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

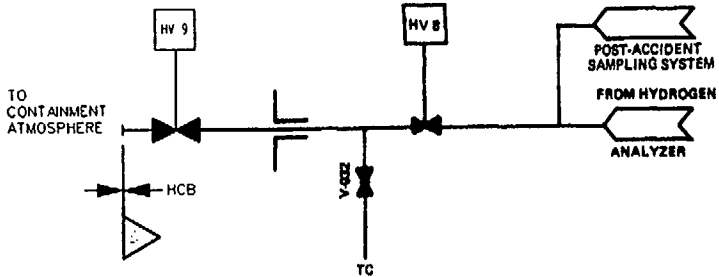
APPLICABLE GDC NO 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE POST-ACCIDENT SAMPLING SYSTEM AND THE CONTAINMENT HYDROGEN CONTROL SYSTEM WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA.

THE HYDROGEN ANALYZER IS A CLOSED SYSTEM OUTSIDE THE CONTAINMENT WHICH IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

TO ASSURE LEAKTIGHT INTEGRITY, THE VALVES ARE SUBJECTED TO TYPE O TESTING, AND THE SAMPLE LINES ARE OPENED DURING THE TYPE A TESTING.



CONTAINMENT PENETRATION NO. P-56
DESCRIPTION:
H₂ SAMPLE RETURN
HYDROGEN CONTROL SYSTEM
CONTAINMENT
REFERENCE SECTION(S) 6.2.5
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 42 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-38	1/1	OUTSIDE	IN	GATE	SOLENOID	1	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSHV-39	1/1	INSIDE	IN	GATE	SOLENOID	4	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSV-058	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

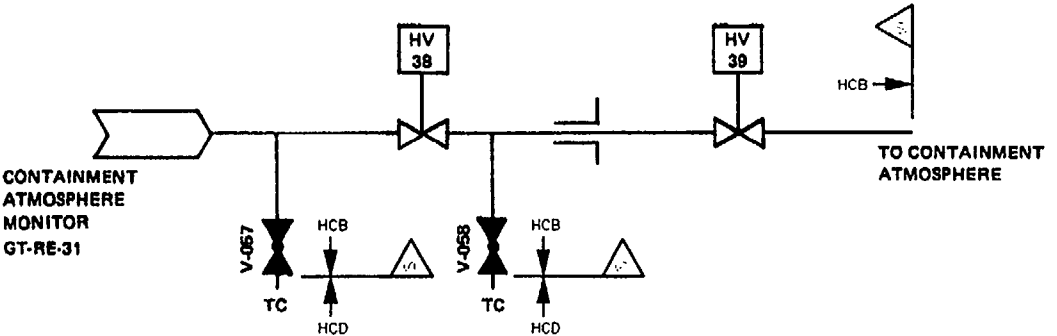
FLUID CONTAINED: CONT. ATM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 7.1

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-56
DESCRIPTION:
SAMPLE RETURN
CONTAINMENT ATMOSPHERE MONITOR
REFERENCE SECTION(S) 9.4.6
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

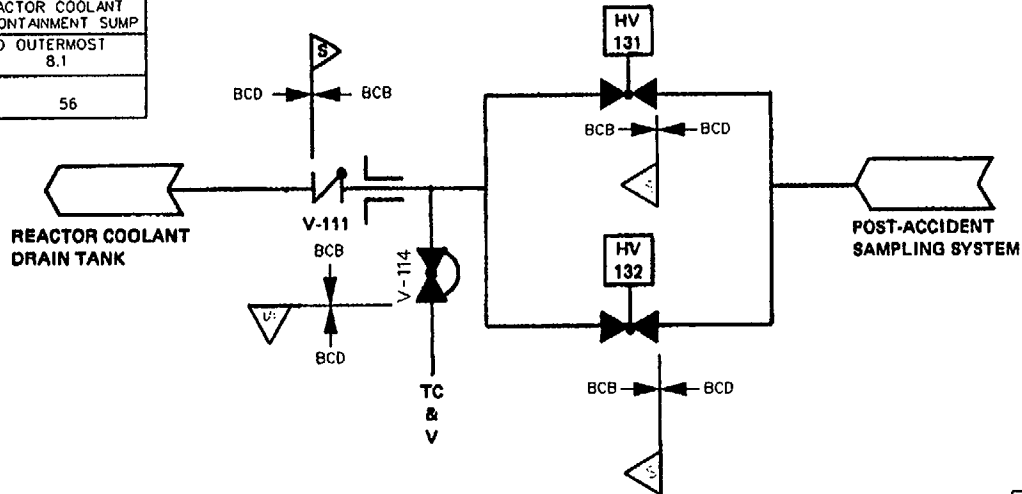
CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 42a OF 74

VALVE NO	LINE/ VALVE SIZE, IN	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
SJHV-131	1/1	OUTSIDE	IN	GLOBE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
SJHV-132	1/1	OUTSIDE	IN	GLOBE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
SJV-111	1/1	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	C
SJV-114	1/1	OUTSIDE	OUT	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO
 FLUID CONTAINED: REACTOR COOLANT & CONTAINMENT SUMP
 LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 8.1
 APPLICABLE GDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-57
 DESCRIPTION:
 SAMPLE RETURN
 POST ACCIDENT SAMPLING SYSTEM
 REFERENCE SECTION(S) 18.2.3
 REV. 13

**WOLF CREEK
 UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 42b OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EMV-006	1/1	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
EMV-1B2	3/4/3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-123	3/4/3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMHV-8888	1/1	OUTSIDE	IN	GLOBE	AIR	4	CIS-A	NONE	5	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C

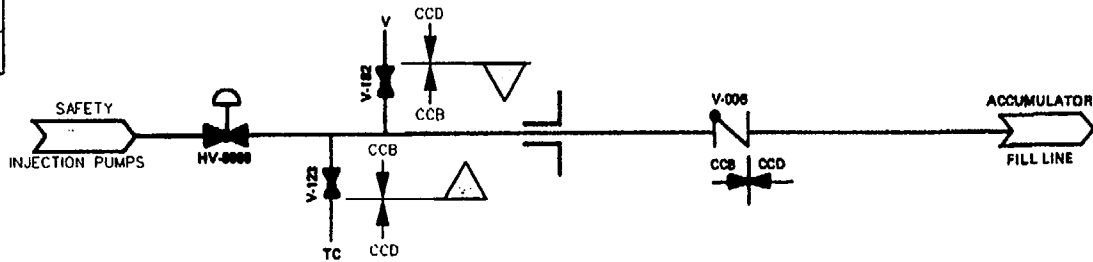
ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 7.6 FT

APPLICABLE
GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-58
DESCRIPTION:
ACCUMULATOR FILL LINE
HIGH PRESSURE COOLANT INJECTION
SYSTEM
REFERENCE SECTION(S) 6.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 43 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

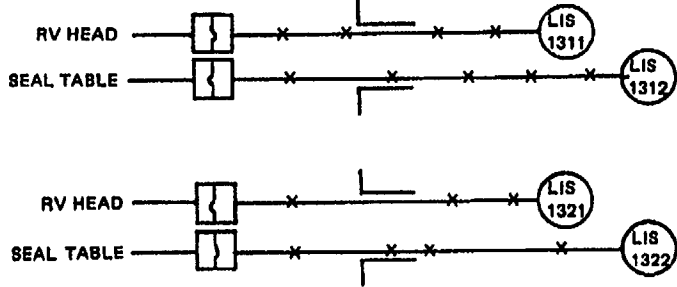
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

HYDRAULIC SENSORS PROVIDE ISOLATION OF RCS FROM THE CAPILLARY TUBING. THE CAPILLARY TUBING AND THE LIS'S SERVE AS THE SECOND BOUNDARY. THIS ARRANGEMENT IS SIMILAR TO THAT PROVIDED FOR THE CONTAINMENT PRESSURE TRANSMITTERS SHOWN ON SHEET 72 OF 74.



CONTAINMENT PENETRATION NO. P-59, 91
DESCRIPTION:
RVLIS SAMPLE LINE
REACTOR COOLANT SYSTEM
REFERENCE SECTION(S) 18.2.13.2
REV. 11

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 43^o OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BBHV-8026	1/1	INSIDE	BOTH	DIAPHRAGM	AIR	1	CIS-A	NONE	10	CLOSED	OPEN	CLOSED	CLOSED	N/A	C
BBHV-8027	1/1	OUTSIDE	BOTH	DIAPHRAGM	AIR	4	CIS-A	NONE	10	CLOSED	OPEN	CLOSED	CLOSED	N/A	C

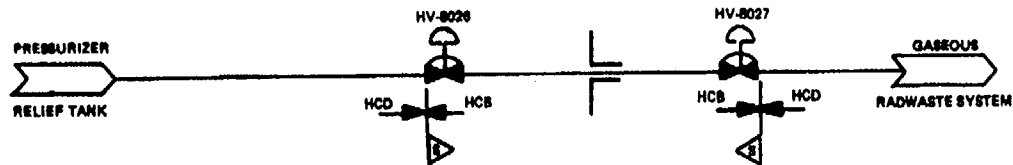
ASSOCIATED WITH A SAFETY FEATURES SYS YES NO

FLUID CONTAINED: GAS

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 12.3ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-62
DESCRIPTION:
PRESSURIZER PURGE & VENT LINE
REACTOR COOLANT SYSTEM
REFERENCE SECTION(S) 5.0
REV. 11

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 44 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
KAV-118	4/4	OUTSIDE	IN	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
KAV-163	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
KAV-039	4/4	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C

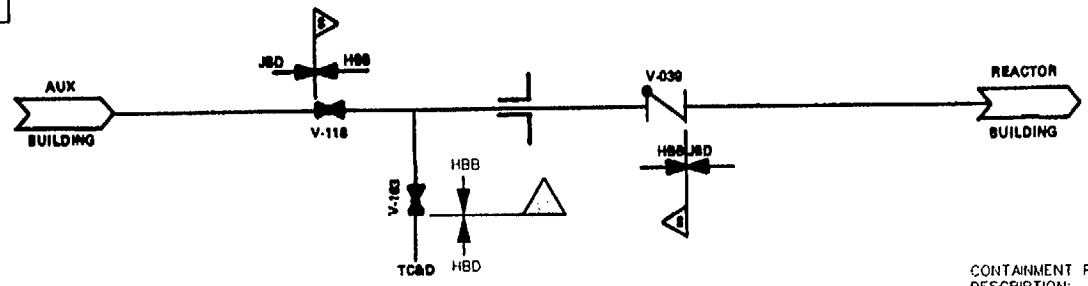
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 8.6ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO P-6.3
DESCRIPTION:
SERVICE AIR
COMPRESSED AIR SYSTEM
REFERENCE SECTION(S) 9.3.1
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

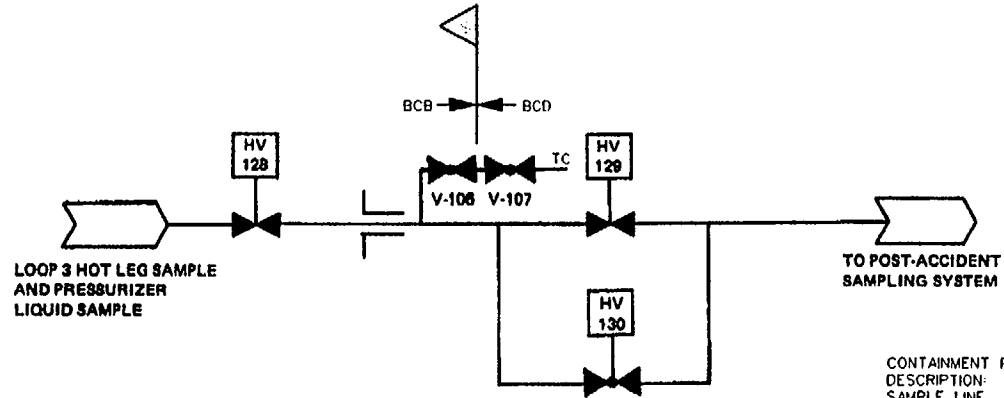
CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 45 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
SJHV-128	1/1	INSIDE	OUT	GLOBE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
SJHV-129	1/1	OUTSIDE	OUT	GLOBE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	C
SJHV-130	1/1	OUTSIDE	OUT	GLOBE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	C
SJV-106	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
FLUID CONTAINED: REACTOR COOLANT
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 8.6
APPLICABLE GDC NO. 55

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-64
DESCRIPTION:
SAMPLE LINE
POST-ACCIDENT SAMPLING SYSTEM
REFERENCE SECTION(S) 18.2.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 45^a OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-20	6/6	INSIDE	OUT	BUTTERFLY	MOTOR	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	AS IS	CLOSED	OPEN	C
GSHV-21	6/6	OUTSIDE	OUT	BUTTERFLY	MOTOR	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	AS IS	CLOSED	OPEN	C
GSV-041	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

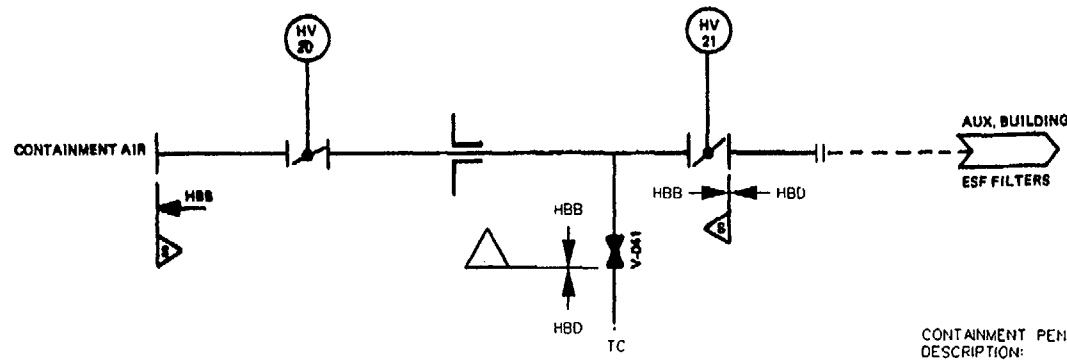
ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: CONT. AIR

LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 5.5ft

APPLICABLE
GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO 65
DESCRIPTION:
CONT. H₂ PURGE
CONTAINMENT HYDROGEN CONTROL SYSTEM
REFERENCE SECTION(S) 6.2.5
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 46 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ENHV-12	10/10	OUTSIDE	IN	GATE	MOTOR	4	CSAS	REM/MAN	N/A	CLOSED	CLOSED	AS IS	OPEN	CLOSED	A
ENV-080	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
ENV-017	10/10	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

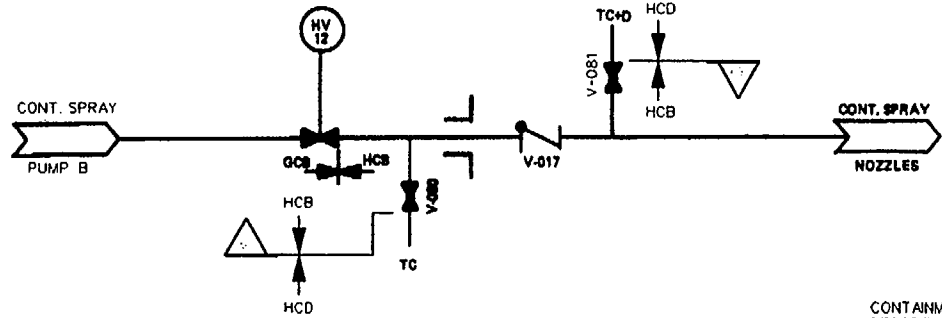
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE CONTAINMENT SPRAY SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 6.2.3.

LOCAL TESTING OF THE VALVES OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION NO. P-66
DESCRIPTION:
CONTAINMENT SPRAY
CONTAINMENT SPRAY SYSTEM
REFERENCE SECTION(S) 6.2.2
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 47 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
KCHV-253	4/4	OUTSIDE	IN	GATE	MOTOR	1	CIS-A	NONE	30	CLOSED	CLOSED	AS IS	CLOSED	N/A	C
KCV-478	4/4	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
KCV-431	1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

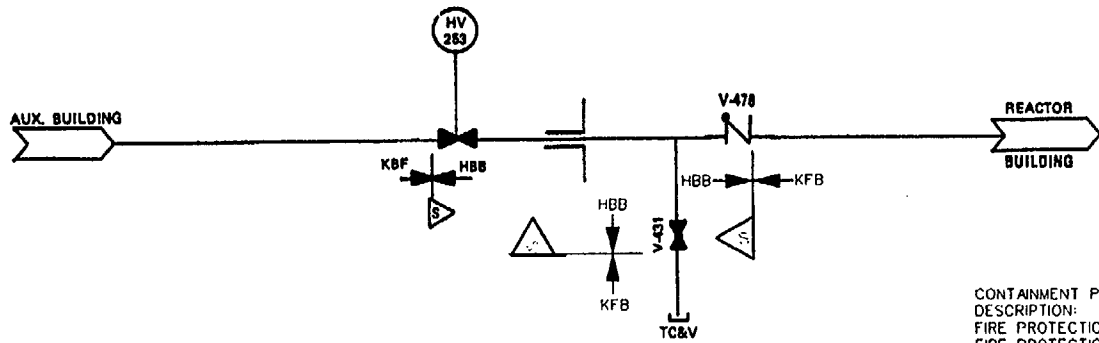
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 15.4

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-67
DESCRIPTION:
FIRE PROTECTION
FIRE PROTECTION SYSTEM
REFERENCE SECTION(S) 9.5.1
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 48 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
SJHV-12	1/1	INSIDE	OUT	GATE	SOLENOID	4	CIS-A	NONE	5	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C
SJHV-13	1/1	OUTSIDE	OUT	GATE	SOLENOID	1	CIS-A	NONE	5	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C
SJVV-071	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

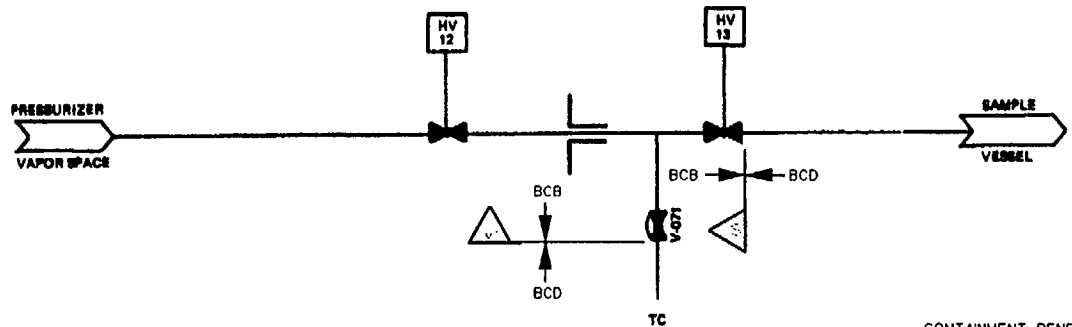
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: STEAM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 7.7ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-69
DESCRIPTION:
PRESSURIZER VAPOR SAMPLE LINE
NUCLEAR SAMPLING SYSTEM
REFERENCE SECTION(S) 9.3.2
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 49 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EFHV-31	14/14	OUTSIDE	IN	BUTTERFLY	MOTOR	I	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
EFV-276	1/1	INSIDE	N/A	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EFHV-33	14/14	INSIDE	IN	BUTTERFLY	MOTOR	I	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

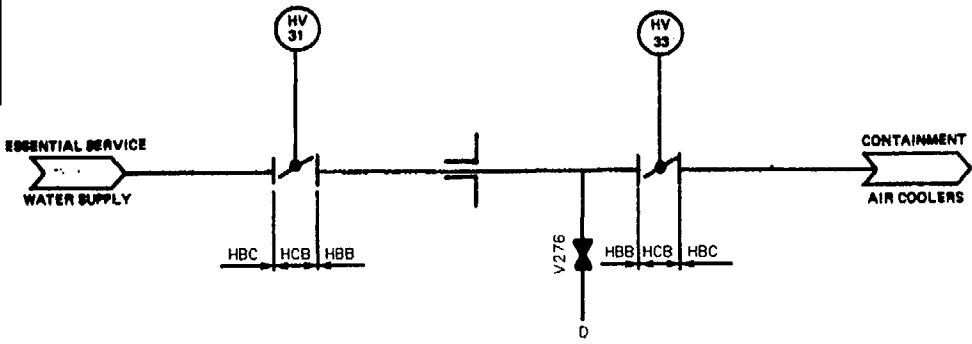
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 15.5 ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE ESSENTIAL SERVICE WATER SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED INSIDE, AND A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED OUTSIDE THE CONTAINMENT.

THESE VALVES ARE POWERED FROM THE SAME POWER SOURCE FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS A CLOSED SYSTEM INSIDE THE CONTAINMENT, WHICH IS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ABBE SECTION III, CLASS 2 REQUIREMENTS. THE ESSENTIAL SERVICE WATER LINES ARE NOT VENTED OR DRAINED DURING A TYPE A TEST SINCE THE AIR COOLERS MAY BE REQUIRED TO COOL THE CONTAINMENT. A TYPE G TEST IS PERFORMED.



CONTAINMENT PENETRATION NO. P-71
DESCRIPTION:
ESW TO CONTAINMENT AIR COOLER
ESSENTIAL SERVICE WATER SYSTEM
REFERENCE SECTION(S) 6.2.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 50 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EFHV-45	14/14	INSIDE	OUT	BUTTERFLY	MOTOR	1	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C
EFV-277	1/1	INSIDE	N/A	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EFHV-49	14/14	OUTSIDE	OUT	BUTTERFLY	MOTOR	1	SIS	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

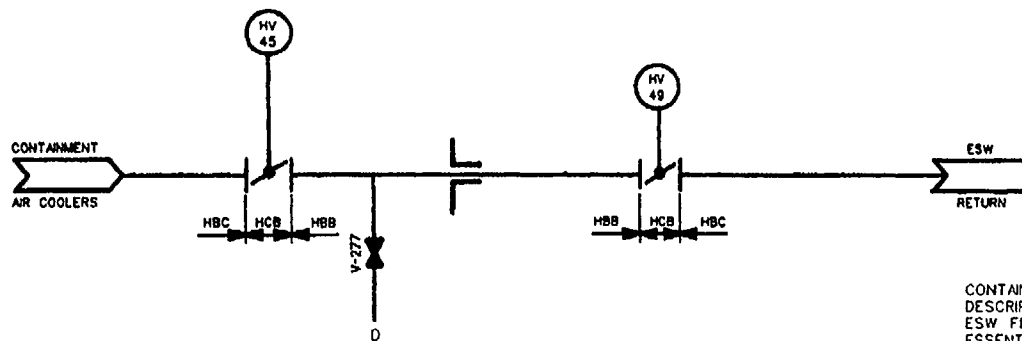
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE ESSENTIAL SERVICE WATER SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED INSIDE AND A REMOTE-MANUAL POWER-OPERATED VALVE IS LOCATED OUTSIDE THE CONTAINMENT.

THESE VALVES ARE POWERED FROM THE SAME POWER SOURCE FOR GREATER SYSTEM RELIABILITY. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS A CLOSED SYSTEM INSIDE THE CONTAINMENT, WHICH IS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASME SECTION III, CLASS 2 REQUIREMENTS.

THE ESSENTIAL SERVICE WATER LINES ARE NOT VENTED OR DRAINED DURING A TYPE A TEST SINCE THE AIR COOLERS MAY BE REQUIRED TO COOL THE CONTAINMENT. A TYPE C TEST IS PERFORMED.



CONTAINMENT PENETRATION NO. P-73
DESCRIPTION:
ESW FROM CONTAINMENT AIR COOLER
ESSENTIAL SERVICE WATER SYSTEM

REFERENCE SECTION(S) 6.2.2
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 51 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EGHV-58	12/12	OUTSIDE	IN	GATE	MOTOR	1	CIS-B	NONE	30	OPEN	OPEN	AS IS	CLOSED	N/A	C
EGV-090	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EGV-204	12/12	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	CLOSED	N/A	C
EGHV-127	12/12	OUTSIDE	IN	GATE	MOTOR	4	REM/MAN	NONE	N/A	CLOSED	CLOSED	AS IS	CLOSED	N/A	C

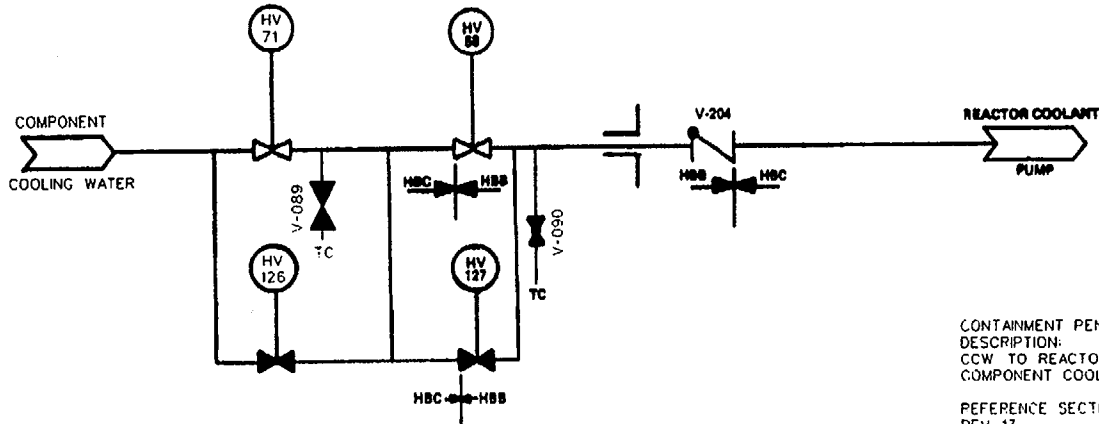
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 11.9 ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
ISOLATION SWITCH PROVIDED IN THE CONTROL ROOM FOR POWER LOCKOUT OF VALVE HV-127



CONTAINMENT PENETRATION NO P-74
DESCRIPTION:
CCW TO REACTOR COOLANT PUMPS
COMPONENT COOLING WATER SYSTEM
REFERENCE SECTION(S) 9.2.2
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 52 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EGHV-60	12/12	INSIDE	OUT	GATE	MOTOR	4	CIS-B	NONE	30	OPEN	OPEN	AS IS	CLOSED	N/A	C
EG-V372	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EGHV-59	12/12	OUTSIDE	OUT	GATE	MOTOR	1	CIS-B	NONE	30	OPEN	OPEN	AS IS	CLOSED	N/A	C
EGHV-131	12/12	OUTSIDE	OUT	GATE	MOTOR	4	REM/MAN	NONE	N/A	CLOSED	CLOSED	AS IS	CLOSED	N/A	C
EGHV-130	12/12	INSIDE	OUT	GATE	MOTOR	1	REM/MAN	NONE	N/A	CLOSED	CLOSED	AS IS	CLOSED	N/A	C

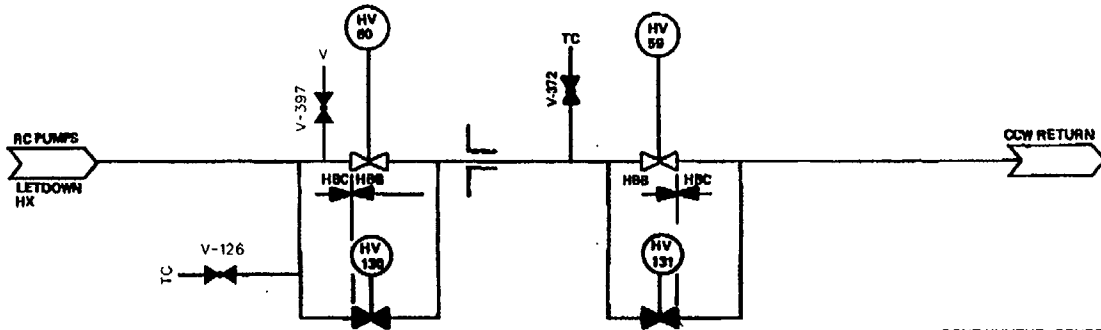
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 11.1 ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:
ISOLATION SWITCH PROVIDED IN THE CONTROL ROOM FOR POWER LOCKOUT OF VALVES HV-130, 131



CONTAINMENT PENETRATION NO. P-75
DESCRIPTION:
CCW RETURN
COMPONENT COOLING WATER SYSTEM
REFERENCE SECTION(S) 9.2.2
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 53 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EGHV-62	4/4	INSIDE	OUT	GATE	MOTOR	4	CIS-B	NONE	30	OPEN	OPEN	AS IS	CLOSED	N/A	C
EGV-371	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EGHV-61	4/4	OUTSIDE	OUT	GATE	MOTOR	1	CIS-B	NONE	30	OPEN	OPEN	AS IS	CLOSED	N/A	C
EGHV-132	4/4	INSIDE	OUT	GATE	MOTOR	1	REM/MAN	NONE	N/A	CLOSED	CLOSED	AS IS	CLOSED	N/A	C
EGHV-133	4/4	OUTSIDE	OUT	GATE	MOTOR	4	REM/MAN	NONE	N/A	CLOSED	CLOSED	AS IS	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

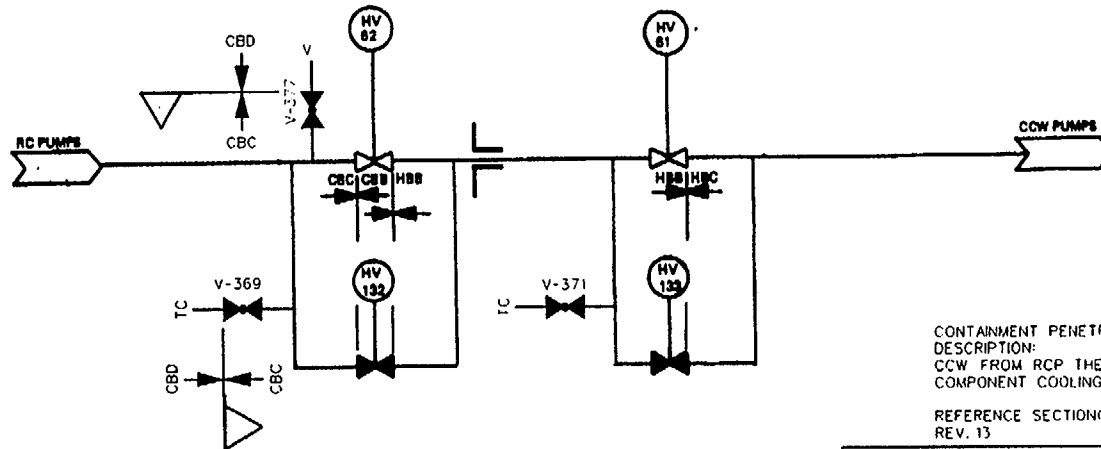
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 7.9 ft.

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

ISOLATION SWITCH PROVIDED IN THE CONTROL ROOM FOR POWER LOCKOUT OF VALVES HV132 AND HV133



CONTAINMENT PENETRATION NO. P-76
DESCRIPTION:
CCW FROM RCP THERMAL BARRIER
COMPONENT COOLING WATER SYSTEM
REFERENCE SECTION(S) 9 2 2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 54 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BMV-045	3/3	INSIDE	OUT	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
BMV-302	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BMV-046	3/3	OUTSIDE	OUT	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

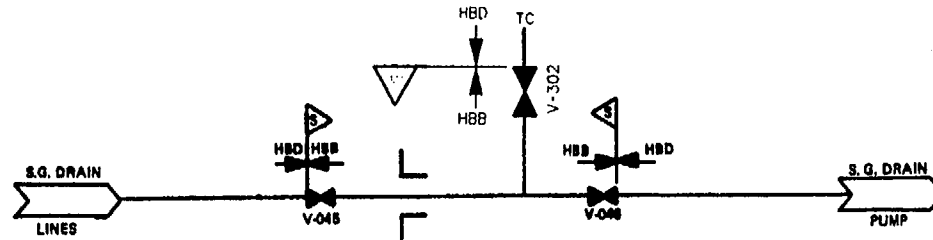
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 6.1 ft.

APPLICABLE
GDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-78
DESCRIPTION:
STEAM GENERATOR DRAIN LINE
STEAM GENERATOR BLOWDOWN SYSTEM
REFERENCE SECTION(S) 10.4.8
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 55 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHV-8701A	12/12	INSIDE	OUT	GATE	MOTOR	1	REM/MAN	NONE	N/A	CLOSED	OPEN	AS IS	CLOSED	N/A	A
EJ8708A	3/3	INSIDE	N/A	RELIEF	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	A
EJV-154	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

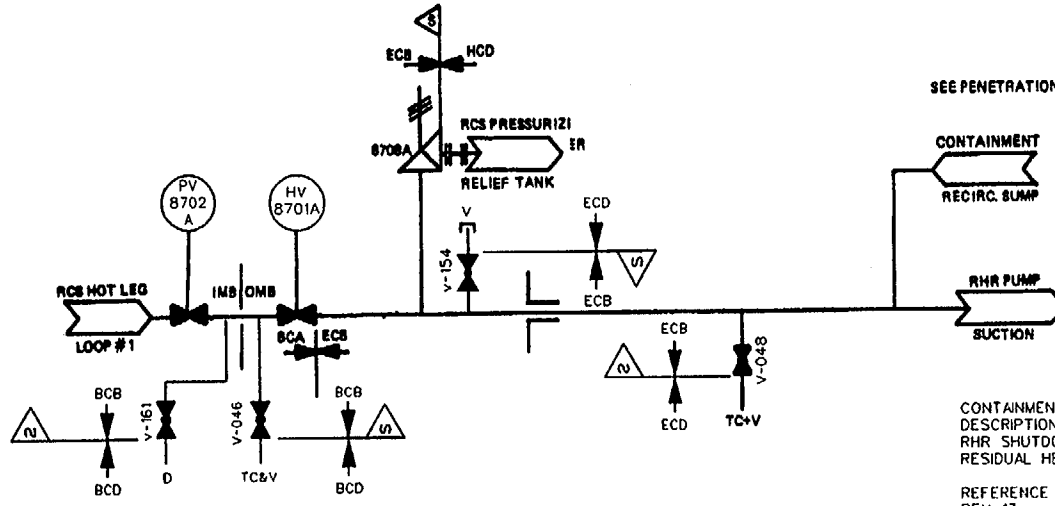
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THE RESIDUAL HEAT REMOVAL SYSTEM SUCTION LINE FROM THE REACTOR COOLANT SYSTEM CONTAINS TWO NORMALLY CLOSED, POWER-OPERATED REMOTE MANUAL VALVES IN SERIES INSIDE THE CONTAINMENT. THE VALVES ARE ALSO INTERLOCKED TO PREVENT THEM FROM BEING INADVERTENTLY OPENED. CONTAINMENT ISOLATION IS ASSURED BY SYSTEM ISOLATION VALVES CLOSEST TO THE CONTAINMENT AND THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT, WHICH IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 5.3.3.

LOCAL TESTING OF THE VALVE OR THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION NO. P-79
DESCRIPTION:
RHR SHUTDOWN LINES
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7 and 6.3
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 56 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
BGHV-8105	3/3	OUTSIDE	IN	GATE	MOTOR	4	SIS	NONE	10	OPEN	OPEN	AS IS	CLOSED	N/A	C
BGV-342	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
BG8381	3/3	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	OPEN	OPEN	N/A	CLOSED	N/A	C

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

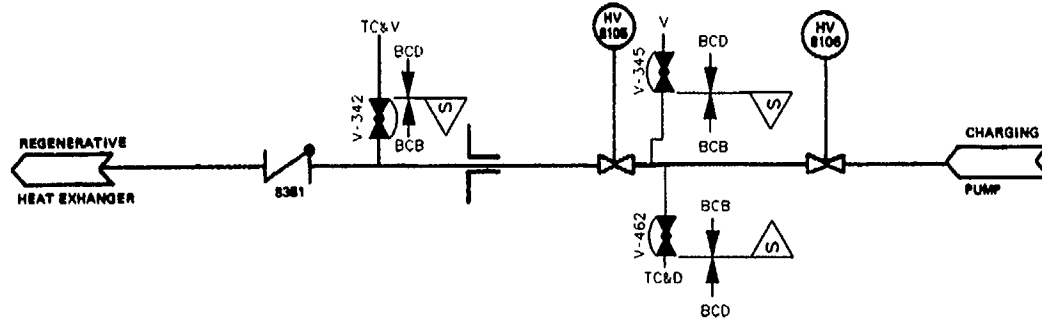
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 18.1 ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-80
DESCRIPTION:
CHARGING LINE
CHEMICAL AND VOLUME CONTROL SYSTEM
REFERENCE SECTION(S) 9.3.4
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 57 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EJHV-8809A	10/10	OUTSIDE	IN	GATE	MOTOR	1	NONE	REM/MAN	N/A	OPEN	OPEN	AS IS	OPEN	CLOSED	A
EJV-054	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EP8818A	6/6	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A
EP8818B	6/6	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A
EJHCV-8890A	3/4/3/4	INSIDE	OUT	GLOBE	AIR	1	CIS-A	NONE	13	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EJV-134, V-136	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-132	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EJV-171, EJV-172 EJV-173, EJV-174	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

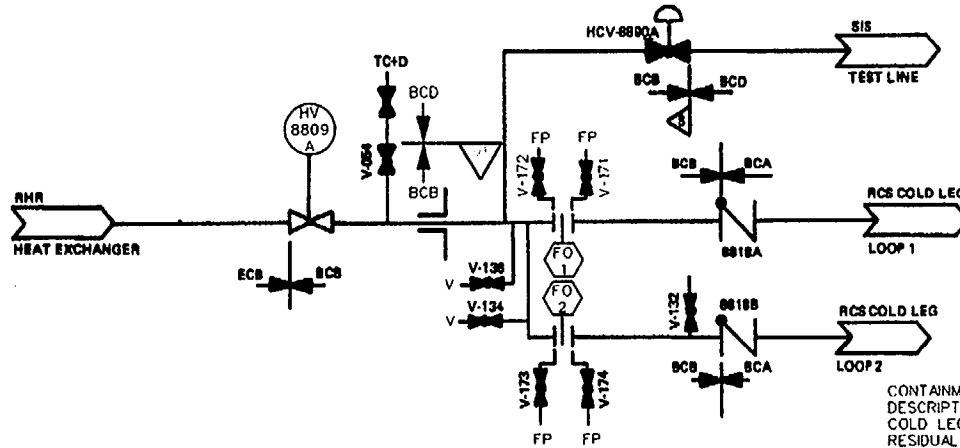
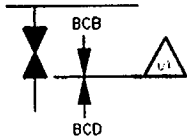
APPLICABLE CDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE HIGH PRESSURE COOLANT INJECTION SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED CONFORMANT WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 6.2.3.

LOCAL TESTING OF THE VALVES ON THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

NOTE: ALL VENTS, DRAINS AND FLOW POINTS AS INDICATED BELOW.



CONTAINMENT PENETRATION NO. P-82
DESCRIPTION:
COLD LEG INJECTION
RESIDUAL HEAT REMOVAL SYSTEM
REFERENCE SECTION(S) 5.4.7 and 6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 58 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: WATER

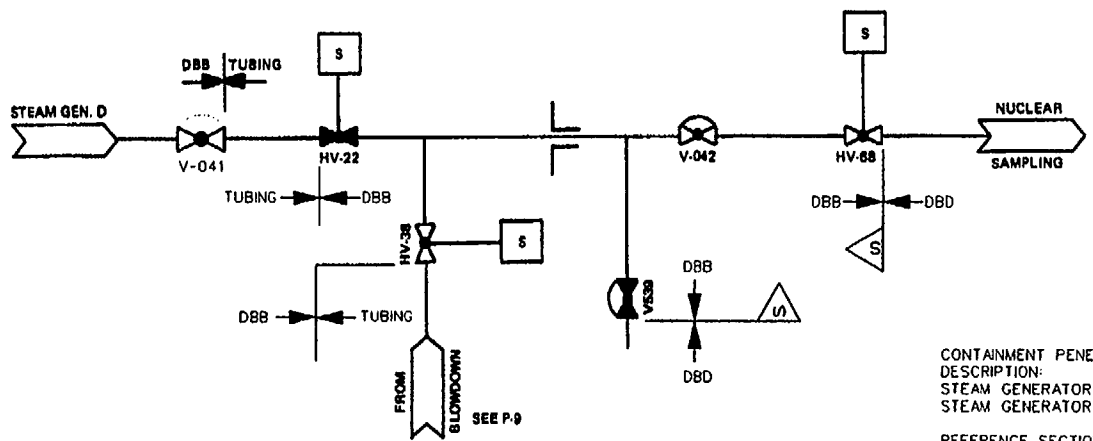
LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: N/A

APPLICABLE
GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSO-
CIATED WITH THE STEAM GENERATORS
ARE NOT SUBJECT TO 60047, SINCE THE
CONTAINMENT BARRIER INTEGRITY IS NOT
BREACHED. THE BOUNDARY OR BARRIER
AGAINST FISSION PRODUCT LEAKAGE TO
THE ENVIRONMENT IS THE INSIDE OF THE
STEAM GENERATOR TUBES AND THE OUT-
SIDE OF THE LINES EMANATING FROM
THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED
FOR FIGURE COMPLETENESS.
NONE OF THE VALVES SHOWN
ARE CONSIDERED CONTAINMENT
ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-83
DESCRIPTION:
STEAM GENERATOR D SAMPLE LINE
STEAM GENERATOR BLOWDOWN SYSTEM
REFERENCE SECTION(S) 10.4.8
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 59 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

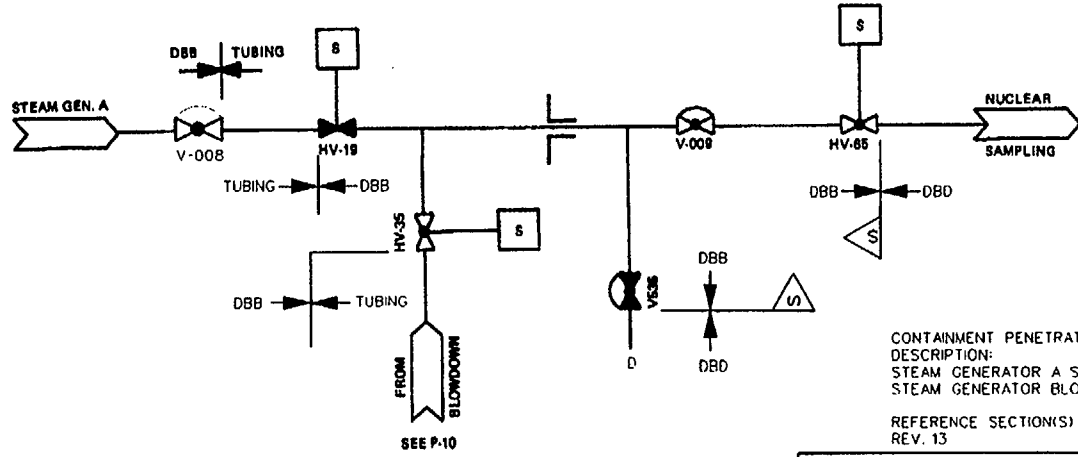
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC67, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-84
DESCRIPTION:
STEAM GENERATOR A SAMPLE LINE
STEAM GENERATOR BLOWDOWN SYSTEM
REFERENCE SECTION(S) 10 4 8
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 60 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

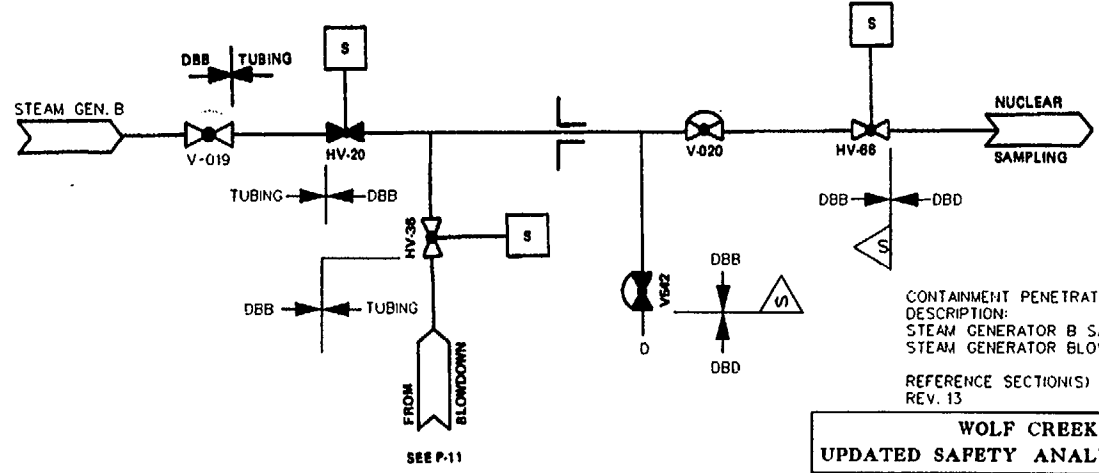
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC-7, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED. THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINE EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-85
 DESCRIPTION:
 STEAM GENERATOR B SAMPLE LINE
 STEAM GENERATOR BLOWDOWN SYSTEM
 REFERENCE SECTION(S) 10.4.8
 REV. 13

**WOLF CREEK
 UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
 FIGURE 6.2.4-1
 PAGE 61 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT	
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY		

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

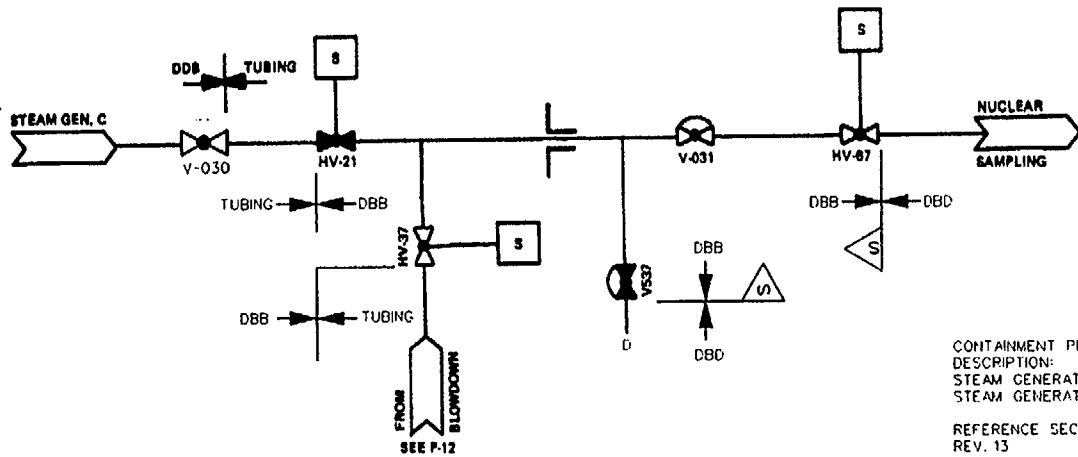
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. NONE

GENERAL COMMENTS:

THE CONTAINMENT PENETRATIONS ASSOCIATED WITH THE STEAM GENERATORS ARE NOT SUBJECT TO GDC67, SINCE THE CONTAINMENT BARRIER INTEGRITY IS NOT BREACHED, THE BOUNDARY OR BARRIER AGAINST FISSION PRODUCT LEAKAGE TO THE ENVIRONMENT IS THE INSIDE OF THE STEAM GENERATOR TUBES AND THE OUTSIDE OF THE LINES EMANATING FROM THE STEAM GENERATOR SHELLS.

THIS PENETRATION IS INCLUDED FOR FIGURE COMPLETENESS. NONE OF THE VALVES SHOWN ARE CONSIDERED CONTAINMENT ISOLATION VALVES.



CONTAINMENT PENETRATION NO. P-86
DESCRIPTION:
STEAM GENERATOR C SAMPLE LINE
STEAM GENERATOR BLOWDOWN SYSTEM
REFERENCE SECTION(S) 10.4.8
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 62 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EMHV-8802A	4/4	OUTSIDE	IN	GATE	MOTOR	1	NONE	REM/MAN	N/A	CLOSED	CLOSED	AS IS	CLOSED	OPEN	A
EMHV-8881	3/4/3/4	INSIDE	OUT	GLOBE	AIR	1	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EMV-001	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	A
EMV-002	2/2	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	OPEN	A
EMV-052, V-053, V-055, V-056, V-184, V-185	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-051	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMV-186, V-187	1/1	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

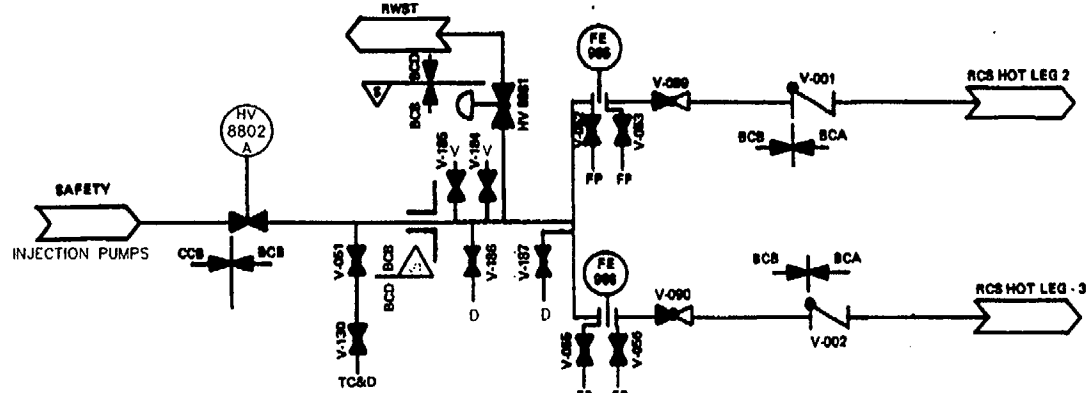
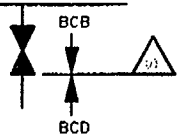
APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE HIGH PRESSURE COOLANT INJECTION SYSTEM WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED CONFORMANT WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 6.3.3.

LOCAL TESTING OF THE VALVES ON THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.

NOTE: ALL VENTS, DRAINS AND FLOW POINTS AS INDICATED BELOW.



CONTAINMENT PENETRATION NO. P-87
DESCRIPTION:
HOT LEG INJECTION
HIGH PRESSURE COOLANT INJECTION
SYSTEM
REFERENCE SECTION(S) 6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 63 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EMHV-8801A	4/4	OUTSIDE	IN	GATE	MOTOR	1	SIS	NONE	N/A	CLOSED	CLOSED	AS IS	OPEN	N/A	A
EMHV-8801B	4/4	OUTSIDE	IN	GATE	MOTOR	4	SIS	NONE	N/A	CLOSED	CLOSED	AS IS	OPEN	N/A	A
EMV-077	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMHV-8843	3/4	INSIDE	IN	GLOBE	AIR	4	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	A
EMV-8815	3/3	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	N/A	A
EMV-151	1/1	OUTSIDE	OUT	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

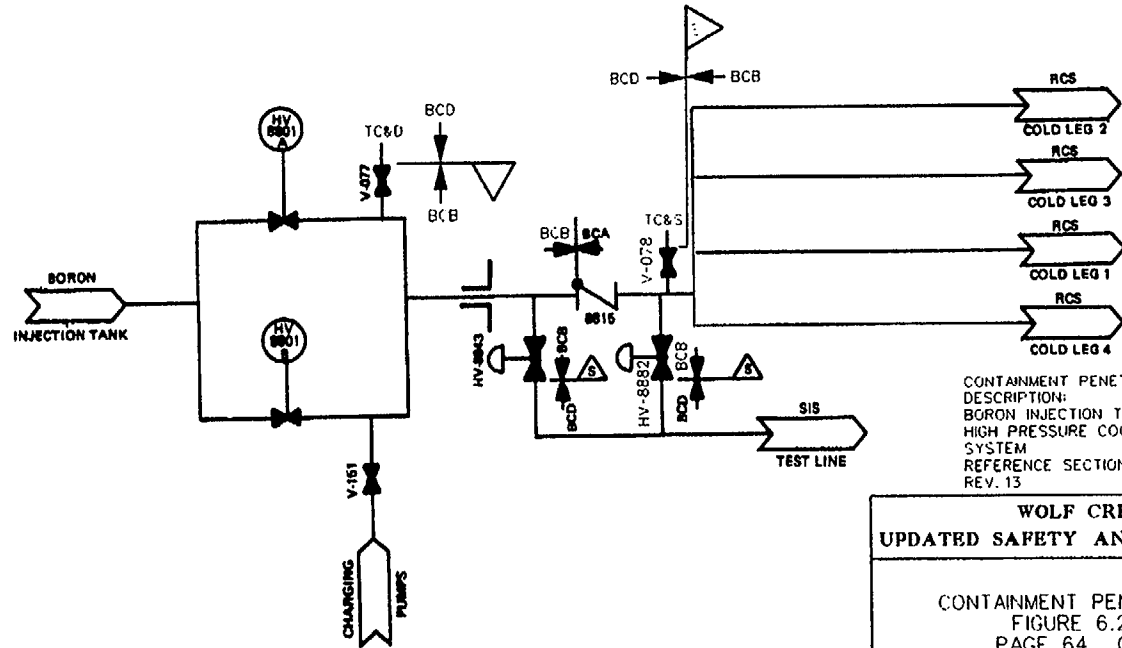
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 55

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE HIGH PRESSURE COOLANT INJECTION SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED FOR EACH BRANCH LINE INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED FOR EACH BRANCH LINE OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 9.3.3.

LOCAL TESTING OF THE VALVES ON THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION FIG. P-38
DESCRIPTION:
BORON INJECTION TO COLD LEGS
HIGH PRESSURE COOLANT INJECTION
SYSTEM
REFERENCE SECTION(S) 6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 64 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
ENHV-06	10/10	OUTSIDE	IN	GATE	MOTOR	1	CSAS	REM/MAN	N/A	CLOSED	CLOSED	AS IS	OPEN	CLOSED	A
ENV-076	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
ENV-013	10/10	INSIDE	IN	CHECK	N/A	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	OPEN	CLOSED	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

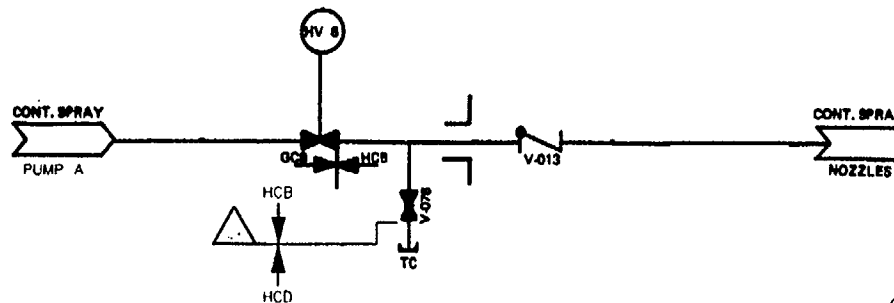
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE CONTAINMENT SPRAY SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA. A CHECK VALVE IS PROVIDED INSIDE THE CONTAINMENT, AND A REMOTE-MANUAL ISOLATION VALVE IS PROVIDED OUTSIDE THE CONTAINMENT. A SINGLE ACTIVE OR PASSIVE FAILURE CAN BE ACCOMMODATED SINCE THE SYSTEM IS CLOSED OUTSIDE THE CONTAINMENT AND IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT. LEAKAGE DETECTION FROM THIS LINE OUTSIDE THE CONTAINMENT IS PROVIDED, AS DESCRIBED IN SECTION 6.2.3.

LOCAL TESTING OF THE VALVES ON THE CLOSED SYSTEM OUTSIDE THE CONTAINMENT IS NOT REQUIRED SINCE THE SYSTEM IS OPERATED AND INSPECTED DURING NORMAL PLANT OPERATION TO ASSURE THAT THE INTEGRITY IS BEING MAINTAINED.



CONTAINMENT PENETRATION NO. P-89
DESCRIPTION:
CONTAINMENT SPRAY
CONTAINMENT SPRAY SYSTEM
REFERENCE SECTION(S) 6.2.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 65 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
EMHV-8964	3/4/3/4	OUTSIDE	OUT	GLOBE	AIR	1	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C
EMV-153	3/4/3/4	INSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
EMHV-8871	3/4/3/4	INSIDE	OUT	GLOBE	AIR	4	CIS-A	NONE	10	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C
EMV-038	3/4/3/4	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

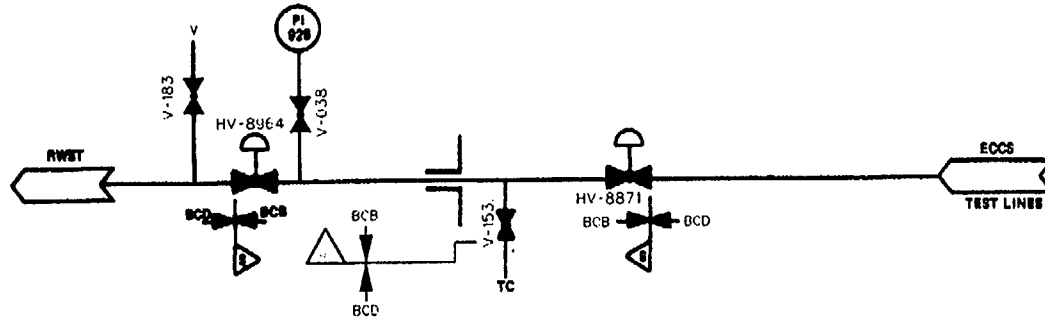
FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 16.7 ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

NONE



CONTAINMENT PENETRATION NO. P-92
DESCRIPTION:
ECCS TEST LINE RETURN
HIGH PRESSURE COOLANT INJECTION
SYSTEM
REFERENCE SECTION(S) 6.3
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 66 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
SJHV-5	1/1	INSIDE	OUT	GLOBE	SOLENOID	4	CIS-A	NONE	5	OPEN	CLOSED	CLOSED	CLOSED	N/A	C
SJHV-6	1/1	OUTSIDE	OUT	GLOBE	SOLENOID	1	CIS-A	NONE	5	OPEN	CLOSED	CLOSED	CLOSED	N/A	C
SJV-069	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A
SJHV-127	1/1	OUTSIDE	OUT	GLOBE	SOLENOID	4	CIS-A	NONE	5	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C

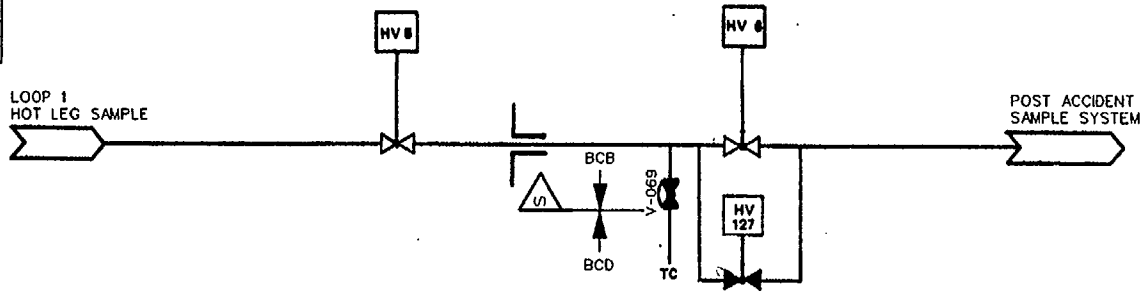
ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 10.3 ft

APPLICABLE
GDC NO. 55

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-93
DESCRIPTION:
PRESSURIZER LIQUID SAMPLE LINE
NUCLEAR SAMPLING SYSTEM
REFERENCE SECTION(S) 9.8.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 67 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
SJHV-18	1/1	INSIDE	OUT	GATE	SOLENOID	4	CIS-A	NONE	5	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C
SJHV-19	1/1	OUTSIDE	OUT	GATE	SOLENOID	1	CIS-A	NONE	5	CLOSED	CLOSED	CLOSED	CLOSED	N/A	C
SJV-066	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

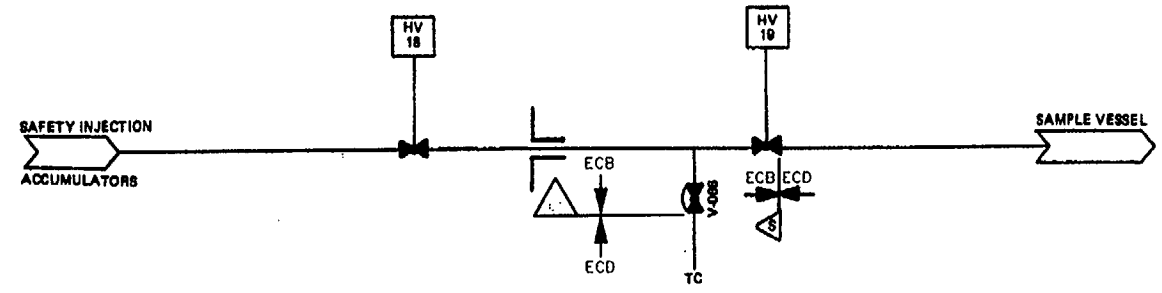
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: WATER

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 10.3 ft

APPLICABLE GDC NO. 55

GENERAL COMMENTS:
NONE



CONTAINMENT PENETRATION NO. P-95
DESCRIPTION:
ACCUMULATOR SAMPLING
NUCLEAR SAMPLING SYSTEM
REFERENCE SECTION(S) 9.3.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 68 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-18	1/1	INSIDE	IN	GATE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSHV-17	1/1	OUTSIDE	IN	GATE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSV-036	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: CONT. AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

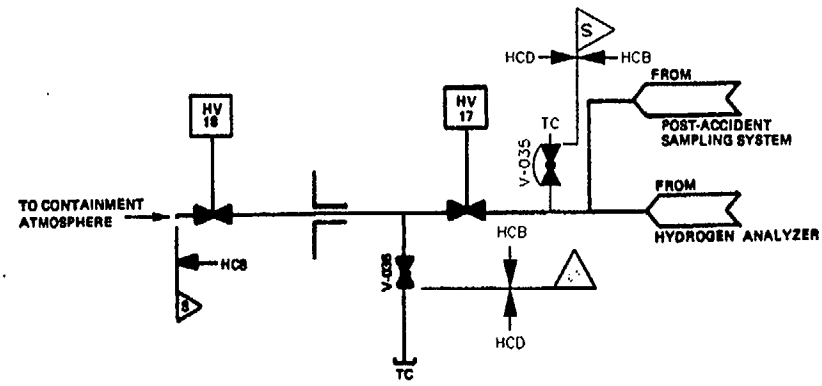
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE POST-ACCIDENT SAMPLING SYSTEM AND THE CONTAINMENT HYDROGEN CONTROL SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA.

THE HYDROGEN ANALYZER IS A CLOSED SYSTEM OUTSIDE THE CONTAINMENT WHICH IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

TO ASSURE LEAKTIGHT INTEGRITY, THE VALVES ARE SUBJECTED TO TYPE C TESTING, AND THE SAMPLE LINES ARE OPENED DURING THE TYPE A TESTING.



CONTAINMENT PENETRATION NO. P-97
DESCRIPTION:
H₂ SAMPLE RETURN
HYDROGEN CONTROL SYSTEM
REFERENCE SECTION(S) 6.2.5
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 69 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-33	1/1	OUTSIDE	IN	GATE	SOLENOID	4	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSHV-34	1/1	INSIDE	IN	GATE	SOLENOID	1	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSV-052	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

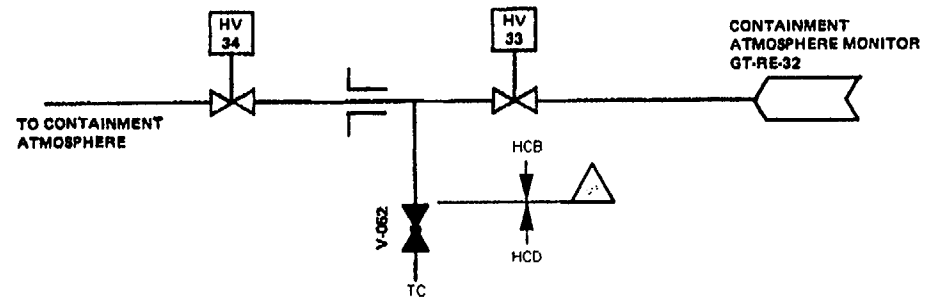
ASSOCIATED WITH A SAFETY
FEATURES SYS. YES NO

FLUID CONTAINED: CONT. ATM

LENGTH OF PIPING TO OUTERMOST
ISOLATION VALVE: 7.8 ft.

APPLICABLE
GDC NO. 56

GENERAL COMMENTS: NONE



CONTAINMENT PENETRATION NO P-97
DESCRIPTION:
SAMPLE RETURN
CONTAINMENT ATMOSPHERE MONITOR
REFERENCE SECTION(S) 9.4.6
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 69a OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	#INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
KBV-001	2/2	INSIDE	IN	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C
KBV-002	2/2	OUTSIDE	IN	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	C

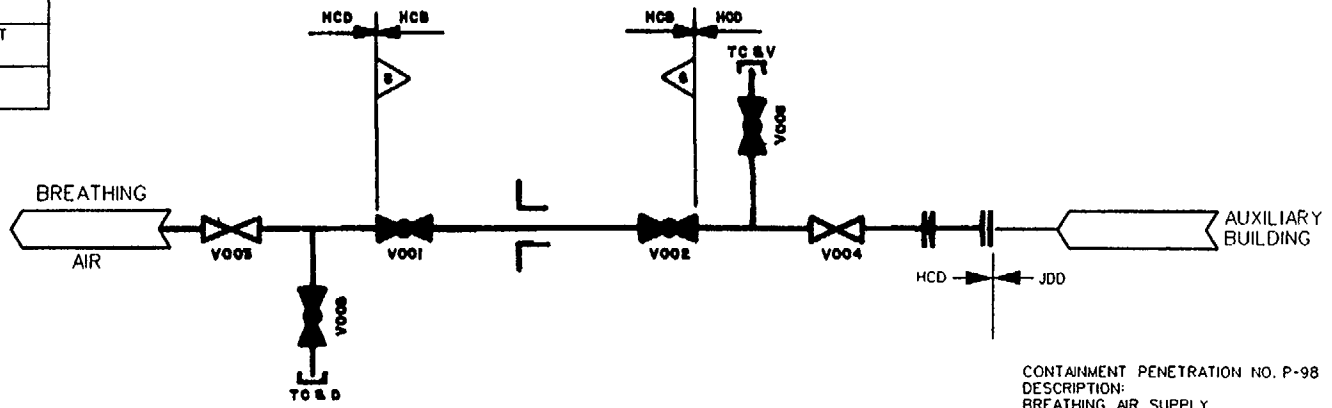
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 7.1 ft.

APPLICABLE GDC NO. 56

GENERAL COMMENTS: NONE



CONTAINMENT PENETRATION NO. P-98
DESCRIPTION:
BREATHING AIR SUPPLY

REFERENCE SECTION(S) 9.5.10
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 69b OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-3	1/1	OUTSIDE	OUT	GATE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A.C
GSHV-4	1/1	INSIDE	OUT	GATE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A.C
GSHV-5	1/1	INSIDE	OUT	GATE	SOLENOID	4	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A.C
GSV-029	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: CONT. ATM

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

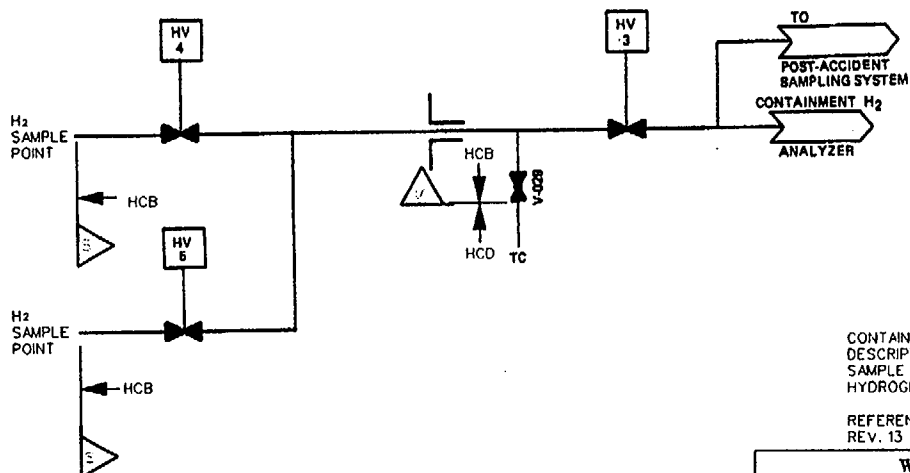
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE POST-ACCIDENT SAMPLING SYSTEM AND THE CONTAINMENT HYDROGEN CONTROL SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCA.

THE HYDROGEN ANALYZER IS A CLOSED SYSTEM OUTSIDE THE CONTAINMENT WHICH IS DESIGNED AND CONSTRUCTED CONFORMANT WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

TO ASSURE LEAKTIGHT INTEGRITY, THE VALVES ARE SUBMITTED TO TYPE G TESTING, AND THE SAMPLE LINES ARE OPENED DURING THE TYPE A TESTING.



CONTAINMENT PENETRATION NO. P-99
DESCRIPTION:
SAMPLE LINE
HYDROGEN CONTROL SYSTEM
REFERENCE SECTION(S) 6.2
REV. 13

**WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT**

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 70 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-36	1/1	INSIDE	OUT	GATE	SOLENOID	4	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSHV-37	1/1	OUTSIDE	OUT	GATE	SOLENOID	1	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSV-056	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

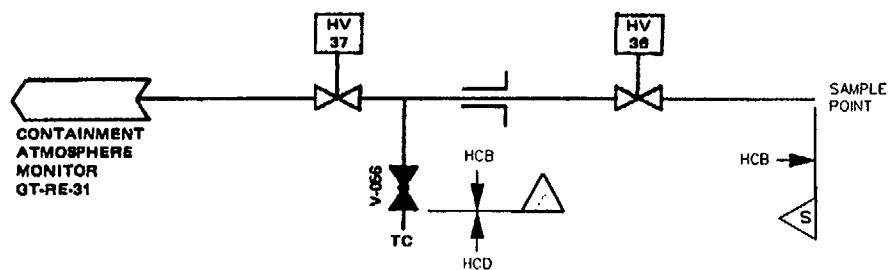
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: CONT. AIR

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE:

APPLICABLE GDC NO 56

GENERAL COMMENTS: NONE



CONTAINMENT PENETRATION NO. P-99
DESCRIPTION:
SAMPLE LINE
CONTAINMENT ATMOSPHERE MONITOR

REFERENCE SECTION(S) 9.4.6
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 70 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-12	1/1	OUTSIDE	OUT	GATE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSHV-13	1/1	INSIDE	OUT	GATE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSHV-14	1/1	INSIDE	OUT	GATE	SOLENOID	1	CIS-A	REM/MAN	5	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	A,C
GSV-033	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: CONT. ATM.

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

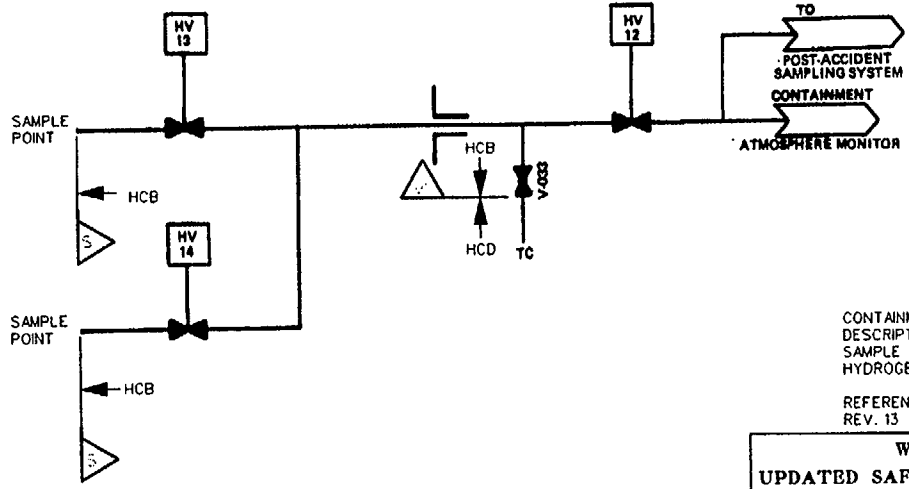
APPLICABLE GDC NO. 56

GENERAL COMMENTS:

THIS PENETRATION IS ASSOCIATED WITH THE POST-ACCIDENT SAMPLING SYSTEM AND THE CONTAINMENT HYDROGEN CONTROL SYSTEM, WHICH IS REQUIRED TO MITIGATE THE CONSEQUENCES OF A LOCAL.

THE HYDROGEN ANALYZER IS LOCATED SYSTEM OUTSIDE THE CONTAINMENT WHICH IS DESIGNED AND CONSTRUCTED COMMENSURATE WITH THE DESIGN AND CONSTRUCTION OF THE CONTAINMENT.

TO ASSURE LEAKTIGHT INTEGRITY, THE VALVES ARE SUBJECTED TO TYPE C TESTING, AND THE SAMPLE LINES ARE OPENED DURING THE TYPE A TESTING.



CONTAINMENT PENETRATION NO. P-101
DESCRIPTION:
SAMPLE LINE
HYDROGEN CONTROL SYSTEM
REFERENCE SECTION(S) 6.2.5
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 71 OF 74

VALVE NO	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GSHV-31	1/1	INSIDE	OUT	GATE	SOLENOID	1	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSHV-32	1/1	OUTSIDE	OUT	GATE	SOLENOID	4	CIS-A	REM/MAN	5	OPEN	OPEN	CLOSED	CLOSED	OPEN	C
GSV-050	1/1	OUTSIDE	N/A	GLOBE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

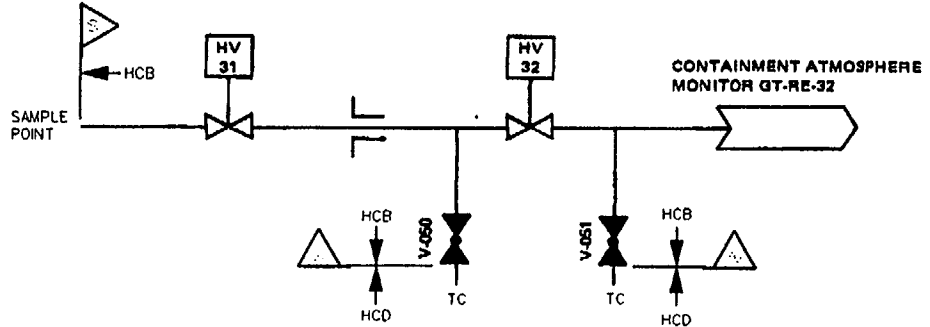
ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: CONT. ATM.

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: LATER

APPLICABLE GDC NO. 56

GENERAL COMMENTS: NONE



CONTAINMENT PENETRATION NO. P-101
DESCRIPTION:
SAMPLE LINE
CONTAINMENT ATMOSPHERE MONITOR
REFERENCE SECTION(S) 9.4.6
REV. 11

WOLF CREBK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 71a OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
PRESSURE TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: DOW CORNING D C 702 PURIFIED AND SUPPLIED BY WESTINGHOUSE

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: N/A

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

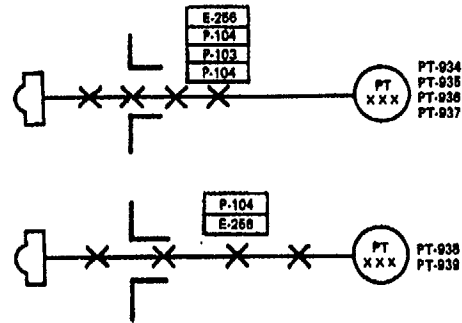
PT-934, 935, 936 AND 937 THERE ARE FOUR INSTRUMENT LINES WHICH PENETRATE THE CONTAINMENT AND WHICH ARE REQUIRED TO REMAIN FUNCTIONAL FOLLOWING A LOCA OR STEAM BREAK. THESE LINES SENSE THE PRESSURE OF CONTAINMENT ATMOSPHERE ON THE INSIDE AND ARE CONNECTED TO PRESSURE TRANSMITTERS ON THE OUTSIDE. SIGNALS FROM THESE TRANSMITTERS CAN INITIATE SAFETY INJECTION AND CONTAINMENT ISOLATION ON HIGH CONTAINMENT PRESSURE. THEY ALSO, UPON HIGH CONTAINMENT PRESSURE, PRODUCE THE ONLY SIGNAL TO INITIATE CONTAINMENT SPRAY. IN VIEW OF THIS FUNCTION, IT IS ESSENTIAL THAT THE LINES REMAIN OPEN AND NOT BE ISOLATED FOLLOWING AN ACCIDENT. BASED ON THIS REQUIREMENT, A SEALED SENSING LINE, AS DESCRIBED BELOW, IS USED.

PT-936 AND PT-938 ARE THE WIDE RANGE CONTAINMENT PRESSURE TRANSMITTERS REQUIRED BY NUREG-6787 AND REGULATORY GUIDE 1.97.

EACH OF THE FOUR CHANNELS HAS A SEPARATE PENETRATION, AND EACH PRESSURE TRANSMITTER IS LOCATED IMMEDIATELY ADJACENT TO THE OUTSIDE OF THE CONTAINMENT WALL. IT IS CON-

NECTED TO A SEALED BELLOWS, LOCATED IMMEDIATELY ADJACENT TO THE INSIDE CONTAINMENT WALL, BY MEANS OF A SEALED FLUID FILLED TUBE. THIS TUBING, ALONG WITH THE TRANSMITTER AND BELLOWS, IS CONSERVATIVELY DESIGNED AND SUBJECT TO STRICT QUALITY CONTROL AND TO REGULAR IN-SERVICE INSPECTIONS TO ASSURE ITS INTEGRITY. THIS ARRANGEMENT PROVIDES A DOUBLE BARRIER (ONE INSIDE AND ONE OUTSIDE) BETWEEN THE CONTAINMENT AND THE OUTSIDE ATMOSPHERE. SHOULD A LEAK OCCUR INSIDE THE CONTAINMENT, THE SEALED BELLOWS INSIDE THE CONTAINMENT, WHICH IS DESIGNED TO WITHSTAND FULL CONTAINMENT DESIGN PRESSURE, WILL PREVENT THE ESCAPE OF THE CONTAINMENT ATMOSPHERE. SHOULD A LEAK OCCUR OUTSIDE THE CONTAINMENT, THE DIAPHRAGM IN THE TRANSMITTER, WHICH IS DESIGNED TO WITHSTAND FULL CONTAINMENT DESIGN PRESSURE, WILL PREVENT ANY ESCAPE FROM THE CONTAINMENT. THIS ARRANGEMENT PROVIDES AUTOMATIC DOUBLE-BARRIER ISOLATION WITHOUT OPERATOR ACTION AND WITHOUT SACRIFICING ANY RELIABILITY. BOTH THE BELLOWS AND TUBING INSIDE THE CONTAINMENT ARE ENCLOSED BY PROTECTIVE SHIELDING, THIS SHIELDING (BOX, CHANNEL OR GUARD PIPE, ETC.) PREVENT MECHANICAL DAMAGE TO THE COMPONENTS FROM MISSILES, WATER JETS, DROPPED TOOLS, ETC.

BECAUSE OF THE SEALED FLUID FILLED SYSTEM, A POSTULATED BEVERAGE OF THE LINE DURING EITHER NORMAL OPERATION OR ACCIDENT CONDITIONS WILL NOT RESULT IN ANY RELEASE FROM THE CONTAINMENT.



CONTAINMENT PENETRATION NO. P-103 & 104
DESCRIPTION: E-256

CONTAINMENT PRESSURE TRANSMITTERS

REFERENCE SECTION(S) 6.3, 9.4
REV. 11

<p>WOLF CREEK UPDATED SAFETY ANALYSIS REPORT</p>
<p>CONTAINMENT PENETRATIONS FIGURE 6.2.4-1 PAGE 72 OF 74</p>

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GTHZ-9	36/36	OUTSIDE	OUT	BUTTERFLY	AIR/SPR	1	CPIS	NONE	10	CLOSED	OPEN	CLOSED	CLOSED	N/A	C
GTHZ-8	36/36	INSIDE	OUT	BUTTERFLY	AIR/SPR	4	CPIS	NONE	10	CLOSED	OPEN	CLOSED	CLOSED	N/A	C
GTHZ-12	18/18	OUTSIDE	OUT	BUTTERFLY	AIR/SPR	1	CPIS	NONE	3	NOTE 1	CLOSED	CLOSED	CLOSED	N/A	C
GTHZ-11	18/18	INSIDE	OUT	BUTTERFLY	AIR/SPR	4	CPIS	NONE	3	NOTE 1	CLOSED	CLOSED	CLOSED	N/A	C
GTVO223	1/1	OUTSIDE	N/A	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS: YES NO

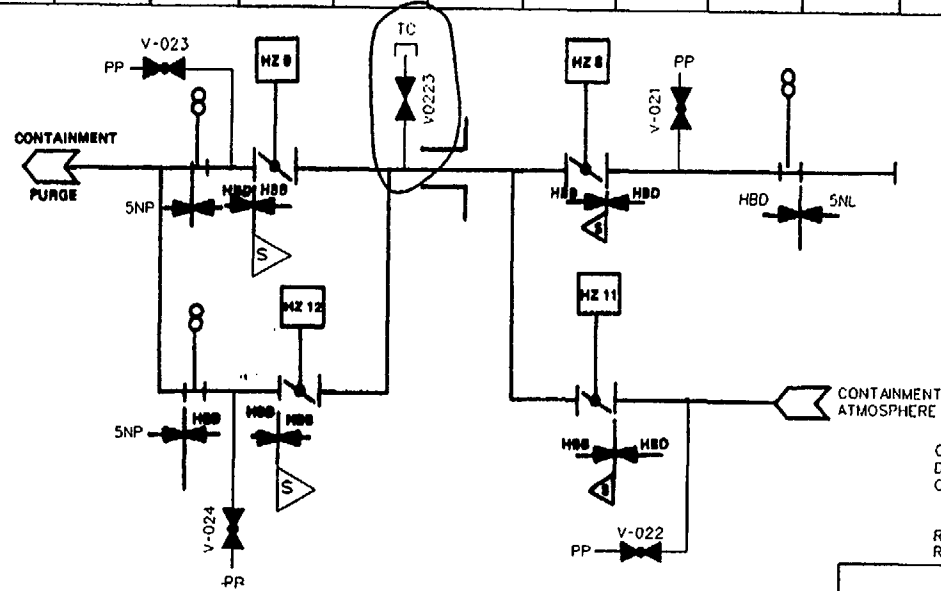
FLUID CONTAINED: CONT. ATM.

LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 12.0 ft

APPLICABLE GDC NO 56

GENERAL COMMENTS:

NOTE 1
THIS VALVE IS INTERMITTENTLY OPENED TO PROVIDE FOR CONTAINMENT MINI-PURGE DURING POWER OPERATION



CONTAINMENT PENETRATION NO. V-160
DESCRIPTION:
CONTAINMENT PURGE SYSTEM

REFERENCE SECTION(S) 9.4
REV. 13

WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 73 OF 74

VALVE NO.	LINE/ VALVE SIZE, IN.	INSIDE/ OUTSIDE CONT.	NORMAL FLOW DIRECTION	VALVE TYPE	VALVE OPERATOR	POWER SOURCE	PRIMARY ACTUATION SIGNAL	SECONDARY ACTUATION SIGNAL	MAXIMUM CLOSURE TIME (SEC.)	VALVE POSITION					APPENDIX J REQUIREMENT
										NORMAL	SHUTDOWN	FAIL	PRIMARY	SECONDARY	
GTHZ-7	36/36	INSIDE	IN	BUTTERFLY	AIR/SPR	1	CPIS	NONE	10	CLOSED	OPEN	CLOSED	CLOSED	N/A	C
GTHZ-5	18/18	INSIDE	IN	BUTTERFLY	AIR/SPR	1	CPIS	NONE	3	NOTE 1	CLOSED	CLOSED	CLOSED	N/A	C
GTHZ-4	18/18	OUTSIDE	IN	BUTTERFLY	AIR/SPR	4	CPIS	NONE	3	NOTE 1	CLOSED	CLOSED	CLOSED	N/A	C
GTHZ-6	36/36	OUTSIDE	IN	BUTTERFLY	AIR/SPR	4	CPIS	NONE	10	CLOSED	OPEN	CLOSED	CLOSED	N/A	C
GTV0222	1/1	OUTSIDE	N/A	GATE	MANUAL	N/A	N/A	N/A	N/A	CLOSED	CLOSED	N/A	CLOSED	N/A	N/A

ASSOCIATED WITH A SAFETY FEATURES SYS. YES NO

FLUID CONTAINED: AIR.

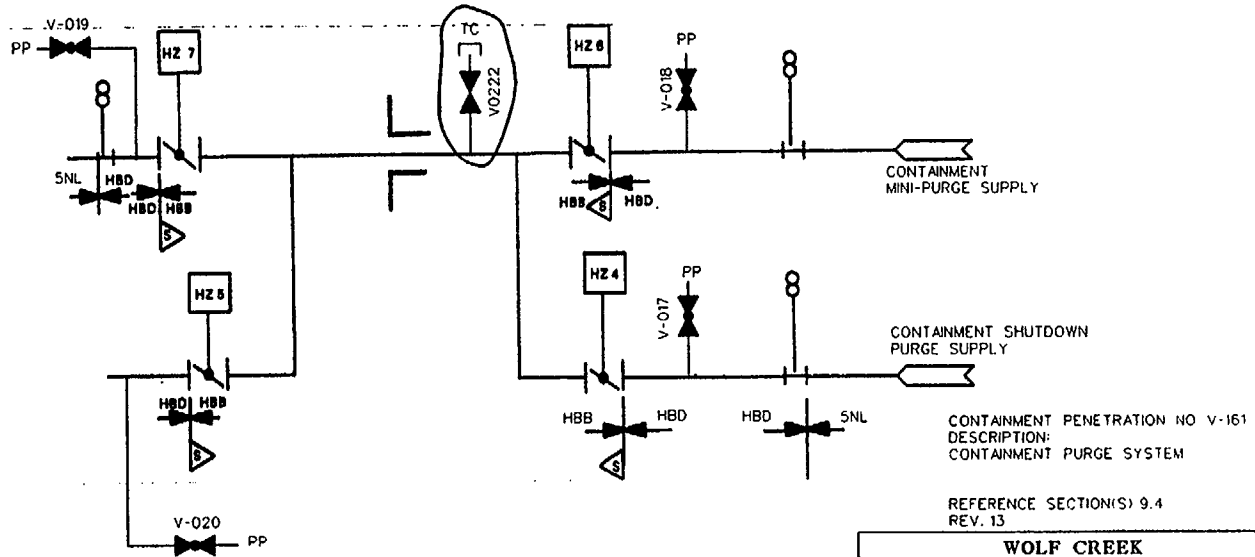
LENGTH OF PIPING TO OUTERMOST ISOLATION VALVE: 12.5 ft

APPLICABLE GDC NO. 56

GENERAL COMMENTS:

NOTE 1

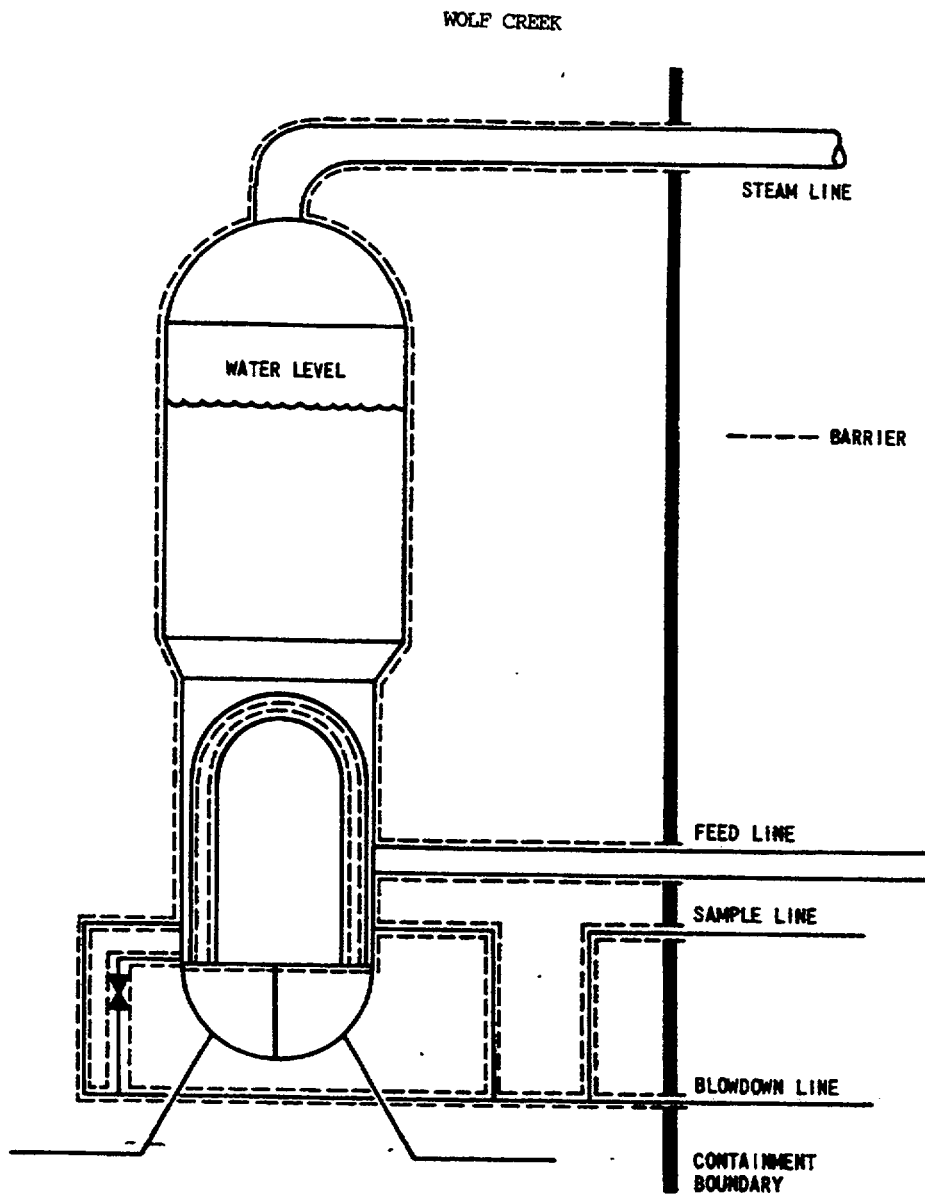
THIS VALVE IS INTERMITTENTLY OPENED FOR PROVIDE FOR CONTAINMENT MINI-PURGE DURING POWER OPERATION



WOLF CREEK
UPDATED SAFETY ANALYSIS REPORT

CONTAINMENT PENETRATIONS
FIGURE 6.2.4-1
PAGE 74 OF 74

*



Rev. 0

<p>WOLF CREEK UPDATED SAFETY ANALYSIS REPORT</p>
<p>FIGURE 6.2.4-2</p>
<p>STEAM GENERATOR AND ASSOCIATED SYSTEMS AS A BARRIER TO THE RELEASE OF RADIOACTIVITY POST LOCA</p>