



PUMP AND VALVE INSERVICE INSPECTION PROGRAM PLAN

FOR

LIMERICK GENERATING STATION

UNIT 1

PREPARED FOR

PHILADELPHIA ELECTRIC COMPANY

PHILADELPHIA, PA

Enclosure

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Project Application 5551	Copy No	Assigned To
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APPROVALS

TITLE / DEPT. - SIGNATURE - DATE

REV NO	PREPARED BY	Prog. Eng. Mgr.	Project Manager	Q.A. Manager
0				
1				
2				
3				
4	<i>N. Holland 11/28/84</i>	<i>L. Soja 11/28/84</i>	<i>T.H. Bell 11-28-84</i>	<i>ME calling for LCL 11-28-84</i>
5	<i>N. Holland 11/21/84</i> <i>J. Bell for LCL</i>	<i>Albert G. H. Smith for BBB 11/21/84</i>	<i>T.H. Bell 11-21-84</i>	<i>M.G. Dwyer for LCL 11/21/84</i>
6				
7				
8				
9				
10	Note: Transfer of signatures from Revision 4 to new title page (except for one which is no longer required due to an organizational change).			
11				

8412190292 841213  
PDR ADOCK 05000352  
G PDR



**PUMP AND VALVE INSERVICE TESTING PROGRAM PLAN**

**FOR**

**LIMERICK GENERATING STATION**

**UNIT 1**

**REVISION LOG**



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 8QA2972

PAGE 2 OF 20  
REV. 5



REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
0	4/22/82		Original Issue	
1	8/06/82	All	Completely Reissued per CRA No. 2724	<i>J. Sutton Jan 2 81.</i>
2	8/16/82	All	Revised to correct typing errors and to incorporate Bechtel comments per CRA 2731	<i>J. Sutton Jan 2 81.</i>
3	10/18/82		Renumbered First 7 Pages	<i>J. Sutton Jan 2 81.</i>
3	10/18/82	2of7	Updated Revision Log	
3	10/18/82	3of7	Updated Revision Log	
3	10/18/82	5of7	Added Clarification of Valve Stroke Timing	
3	10/18/82	6of7	Added Definition of Cold Shutdown Testing	
3	10/18/82	4of4	Revised No. of Pages for M-41, M-51 (Sh1&Sh2)	
3	10/18/82	M-01 All	Revised Page Numbers	
3	10/18/82	M-01 2of4	Revised Test Requirements	
3	10/18/82	M-01 3of4	Added Relief Request 01-01	
3	10/18/82	M-01 4of4	Added Relief Request 01-02	
3	10/18/82	M-11(1) 8of10	Corrected Typo	
3	10/18/82	M-11(1) 9of10	Corrected Typo	
3	10/18/82	M-11(1) 10of10	Corrected Typo	
3	10/18/82	M-11(2) 2of17	Corrected Typo	
3	10/18/82	M-11(2) 3of17	Corrected Typo	
3	10/18/82	M-11(2) 5of17	Corrected Typo	
3	10/18/82	M-11(3) 2of3	Corrected Typo	
3	10/18/82	M-11(3) 3of3	Added Remark	
3	10/18/82	M-12 5of6	Corrected Typo	
3	10/18/82	M-41 All	Revised Page Numbers	
3	10/18/82	M-41 2of21	Revised Test Requirements	
3	10/18/82	M-41 13of21	Added Page with 1 New Valve	
3	10/18/82	M-49 5of9	Revised Remarks	
3	10/18/82	M-49 6of9	Revised Remarks	



# REVISION LOG

DOCUMENT NO. 80A2972

NUCLEAR ENERGY SERVICES, INC.

PAGE 3 OF 20  
REV. 5

5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
3	10/18/82	M51(1) All	Revised Page Numbers	
3	10/18/82	M51(1) 3of15	Revised Test Requirements	
3	10/18/82	M51(1) 9of15	Revised Remarks	
3	10/18/82	M51(1) 15of15	Added Relief Request 51-03	
3	10/18/82	M51(2) All	Revised Page Numbers	
3	10/18/82	M51(2) 3of16	Revised Test Requirements	
3	10/18/82	M51(2) 7of16	Revised Remarks	
3	10/18/82	M51(2) 10of16	Revised Remarks	
3	10/18/82	M51(2) 13of16	Revised Remarks/Test Requirements	
3	10/18/82	M51(2) 16of16	Added Relief Request 51-03	
3	10/18/82	M52 8of12	Corrected Valve Numbers	
3	10/18/82	M52 9of12	Corrected Valve Numbers	
3	10/18/82	M55 5of11	Revised Remarks	
3	10/18/82	M55 6of11	Revised Remarks	
3	10/18/82	M55 7of11	Corrected Typo	
3	10/18/82	M56 2of4	Corrected Typo	
3	10/18/82	M59 4of7	Corrected Valve Number	
3	10/18/82	M59 5of7	Corrected Valve Number	
3	12/14/82	M51(1) 6of15	Revised Remarks	
3	12/14/82	M51(2) 6of16	Revised Remarks	
4	5/21/84	-	Revised to correct typing errors and to incorporate Bechtel and Peco comments per CRA 4237	<i>2/1/84 JCL 7/21 5/21/84</i>
4	5/21/84	All	Reformatted Entire Document Revision Log	
4	5/21/84	1	Added Title Page	
4	5/21/84	2thru 16	Revised Page Numbers	





# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 4 OF 20  
REV. 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
4	5/21/84	2 thru 16	Updated Revision Log	
			List of Effective Pages	
4	5/21/84	1 thru 9	Added List of Effective Pages Section	
			Program Plan Text	
4	5/21/84	1	Added Title Page	
4	5/21/84	2 thru 6	Revised Page Numbers	
4	5/21/84	2	Revised Referenced Page Number	
4	5/21/84	3	Revised Addenda Reference and Added	
			Paragraphs 1 thru 5	
4	5/21/84	4	Revised Paragraph 6	
4	5/21/84	5	Revised Addenda Reference	
4	5/21/84	6	Added NRC Reference	
			Pump List	
4	5/21/84	3	Changed Number of Footnotes and Added	
			Footnote Number 8	
4	5/21/84	4	Revised Drawing Revision Numbers	
			Pump Table	
4	5/21/84	2	Revised Table and Added Footnote **	
4	5/21/84	3	Revised Table	
4	5/21/84	4	Deleted Relief Request	
4	5/21/84	5	Deleted Relief Request	
			Appendix B	
4	5/21/84	2	Corrected Typos, Revised PV Test Re-	
			quirement and Added Definition of (P)	
4	5/21/84	4	Added New Systems to Index and Revised	
			No. of Page Column	
			M-01	
4	5/21/84	3	Corrected Typo	



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 5 OF 20  
REV. 5

5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
		M-11 Sh.1		
4	5/21/84	2	Revised Remarks	
4	5/21/84	3	Revised Remark (11-0001D)	
			Changed to Passive Valves (HV-11-105: HV-11-107)	
4	5/21/84	4	Changed Normal Position to C	
4	5/21/84	5	Changed Normal Position to C (HV-11-132D)	
			Changed Normal Position to O (HV-11-133C: HV-11-133D)	
4	5/21/84	6	Changed Normal Position to O	
4	5/21/84	8	Deleted Valves HV-11-205: HV-11-207: 11-0043: HV-11-231A: HV-11-231B	
4	5/21/84	9	Deleted Page	
4	5/21/84	10	Deleted Page	
		M-11 Sh.2		
4	5/21/84	2	Changed From Passive to Quarterly Testing and Added Remarks	
4	5/21/84	3	Added P in Pass. Column (11-1006) Changed From Passive to Quarterly Testing and Added Remarks (HV-11-055A,B)	
4	5/21/84	5	Deleted Remarks (11-0034A,B) Added Leak Test Requirements to Remark (11-0062)	
4	5/21/84	9	Added Leak Test Requirements to Remark	
4	5/21/84	10	Added Leak Test Requirements to Remark	
4	5/21/84	17	Added 2 Valves	
		M-11 Sh.3		
4	5/21/84	2	Changed From Passive to Quarterly Testing	



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 6 OF 20  
REV. 5



REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
			and Added Remarks	
			Deleted Valve (HV-11-227)	
4	5/21/84	3	Replaced Valve HV-11-228 With Valve	
			11-0039 and Added Remark	
			Replaced Valves 11-2006 and 11-2008 with	
			Valves HV-11-048 and HV-11-078 and Added	
			Remarks	
		M-12		
4	5/21/84	1	Corrected System Name	
4	5/21/84	2	Removed Flow Test Direction From Remarks	
			(12-0001A,B,C,D) and Corrected Flow Test	
			Direction in Remarks (12-0030: 12-0031)	
4	5/21/84	3	Changed Normal Position to 0 (HV-12-031A,	
			B,C,D). Changed Normal Position to	
			C (HV-12-032A,B)	
4	5/21/84	4	Changed Normal Position to C (HV-12-032C,D)	
4	5/21/84	5	Deleted Valves HV-12-210: HV-12-211:	
			HV-12-213	
		M-13		
4	5/21/84	2	Corrected Valve Numbers (HV-13-109:	
			HV-13-110). Revised Valve Category	
			HV-13-108: HV-13-109: HV-13-110: HV-13-111)	
			Corrected Actuator Type and Normal	
			Position (HV-13-109: HV-13-110)	
			Added Leak Testing to Test Requirements	
			(HV-13-108: HV-13-109: HV-13-110:	
			HV-13-111). Added Remarks (HV-13-109: 110)	
4	5/21/84	3	Changed Valve Category	



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972PAGE 7 OF 20  
REV. 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
		M-15 Sh.6		
4	5/21/84	1	New Page	
4	5/21/84	2	New Page	
		M-20		
4	5/21/84	1	Corrected Typo and Revised Page Number	
4	5/21/84	2 thru 13	Corrected System Name and Revised Page Numbers	
4	5/21/84	2	Corrected Class to - (All Valves)  Deleted Remarks (20-1046A,B,C,D)	
4	5/21/84	3	Corrected Class to - (All Valves)	
4	5/21/84	4	Corrected Class to - (All Valves)	
4	5/21/84	5	Corrected Class to - (All Valves)	
4	5/21/84	6	Corrected Class to - (All Valves)	
4	5/21/84	7	Corrected Class to - (20-1161A,B,C,D)	
4	5/21/84	8	Corrected Valve Type (20-1124A,B,C,D: 20-1125A)	
4	5/21/84	9	Corrected Valve Type	
4	5/21/84	13	Corrected Valve Type	
4	5/21/84	14	New Page	
4	5/21/84	15	New Page	
4	5/21/84	16	New Page	
4	5/21/84	17	New Page	
		M-26 Sh.3		
4	5/21/84	1	New Page	
4	5/21/84	2	New Page	
		M-40		
4	5/21/84	5	Corrected Valve Number (HV-40-1F008)	
		M-41		





# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 8 OF 20  
REV. 5



REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
4	5/21/84	2	Removed Stroke Timing Requirements and Revised Remarks (HV-41-1F032A,B)	
			Corrected Valve Type (HV-41-F074A,B)	
			Removed Stroke Timing Requirements and Revised Remarks (HV-41-1F074A,B)	
4	5/21/84	3	Corrected Actuator Type and Added Remarks	
4	5/21/84	4	Corrected Actuator Type and Added Remarks	
4	5/21/84	5	Corrected Drawing Coordinates (PSV41-1F037A,B). Revised Valve Category and Actuator Type (FSV41-1F013E,H,K,M,S)	
			Added Stroke Timing to Test Requirements and Changed Alternate Testing to Refueling (PSV41-1F013E,H,K,M,S)	
4	5/21/84	6	Corrected Drawing Coordinates	
4	5/21/84	7	Corrected Drawing Coordinates	
4	5/21/84	9	Corrected Class and Changed Leak Test Requirements (HV-41-133A,B)	
			Corrected Drawing Coordinates (41-1F036E,H)	
4	5/21/84	10	Corrected Drawing Coordinates	
4	5/21/84	11	Corrected Drawing Coordinates	
4	5/21/84	12	Corrected Drawing Coordinates (PSV41-1F097M,N,S)	
			Corrected Valve No. (HV-41-130A)	
			Corrected Class (HV-41-130A,B: 41-1036A,B)	
			Corrected Size (41-1036A,B)	
			Revised Leak Test Requirements (HV-41-130A,B: 41-1036A,B)	
			Added Remarks (41-1036A,B)	





# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 9 OF 20  
REV. 5




REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
4	5/21/84	13	Added 6 Valves	
4	5/21/84	14	Revised Alternate Testing Requirements	
4	5/21/84	15	Revised the Basis For Relief	
4	5/21/84	18	Changed Valve Category	
			Corrected Test Requirement	
			Revised Basis For Relief	
4	5/21/84	19	Removed Valve HV-41-154A and Added	
			Valve HV-41-130A	
			Corrected Class	
			Revised Basis for Relief	
4	5/21/84	20	Corrected Typo	
4	5/21/84	21	Corrected Class	
			Revised Alternate Testing Requirements	
		M-42		
4	5/21/84	1	New Page	
4	5/21/84	2	New Page	
		M-43		
4	5/21/84	1 thru 5	Revised Page Numbers	
4	5/21/84	2	Corrected Valve Type (HV-43-1F023A,B:	
			HV-43-1F031A,B)	
			Changed Valves to Passive, Deleted	
			Quarterly Testing, Deleted Relief Request	
			Reference and Alternate Testing	
			(HV-43-1F023A,B)	
4	5/21/84	3	New Page	
4	5/21/84	4	Deleted Valves HV-43-1F023A,B)	
			Corrected Valve Function	
4	5/21/84	5	New Page	



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 10 OF 20  
REV. 5 

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
		M-44		
4	5/21/84	2	Corrected Valve Type	
			Corrected Actuator Type	
			Removed Stroke Time Test Requirements	
			Added Remark	
		M-46		
4	5/21/84	1	New Page	
4	5/21/84	2	New Page	
4	5/21/84	3	New Page	
		M-47		
4	5/21/84	1 thru 4	Corrected System Name	
4	5/21/84	2	Corrected Valve Numbers (XV-47-1F011: XV-47-1F181: XV-47-1F010: XV-47-1F180)	
			Corrected Relief Request Reference (47-1-14)	
4	5/21/84	3	Added 4 Valves	
4	5/21/84	4	Correct Typo	
		M-48		
4	5/21/84	1 thru 9	Revised Page Numbers	
4	5/21/84	6	New Page	
4	5/21/84	9	New Page	
		M-49		
4	5/21/84	2	Revised Remark (HV-49-1F002)	
			Corrected Typo (HV-49-1F013)	
4	5/21/84	6	Corrected Drawing Coordinates	
4	5/21/84	7	Corrected Typo (HV-49-1F060)	
4	5/21/84	9	Revised Basis For Relief	
		M-50		



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 11 OF 20  
REV. 5



REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
4	5/21/84	4	Corrected Valve Number (FV-50-113)	
		M-51 Sh.1		
4	5/21/84	1 thru 16	Revised Page Numbers	
4	5/21/84	2	Changed Alternate Test Performed to Refueling	
4	5/21/84	3	Changed Alternate Test Performed to Refueling	
4	5/21/84	4	Changed From Passive to Quarterly Testing (HV-51-1F026B) Added Relief Request Reference and Alternate Testing Requirements (HV-51-1F041B)	
4	5/21/84	5	Added Relief Request Reference and Alternate Testing Requirements (HV-51-1F041D) Changed Alternate Test Performed to Refueling (HV-51-1F050B)	
4	5/21/84	13	New Page	
4	5/21/84	14	Corrected Valve Number (HV-51-1F008) Corrected Valve Number (HV-51-1F023) Revised Basis for Relief and Alternate Testing Requirements	
4	5/21/84	15	Added Valves (HV-51-1F041A,B,C,D) Added New Valves to Function Revised Basis for Relief and Alternate Testing Requirements	
4	5/21/84	16	Revised Basis for Relief and Alternate Testing Requirements	



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 12 OF 20  
REV. 5 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
		M-51 Sh.2		
4	5/21/84	2	Changed Alternate Test Performed to Refueling	
4	5/21/84	3	Changed Alternate Test Performed to Refueling	
4	5/21/84	4	Changed Alternate Test Performed to Refueling (HV-51-1F022: HV-51-1F023) Changed From Passive to Quarterly Testing (HV-51-1F026A)	
4	5/21/84	5	Added Relief Request Reference and Alternate Testing Requirements	
4	5/21/84	6	Changed Alternate Test Performed to Refueling	
4	5/21/84	12	Corrected Drawing Coordinates	
4	5/21/84	13	Added 3 Valves	
4	5/21/84	14	Corrected Valve Number (HV-51-1F008) Corrected Valve Number (HV-51-1F023) Revised Basis for Relief and Alternate Testing Requirements	
4	5/21/84	15	Added Valves (HV-51-1F041A,B,C,D) Added New Valves to Function Revised Basis for Relief and Alternate Testing Requirements	
4	5/21/84	16	Revised Basis for Relief and Alternate Testing Requirements	
		M-52		
4	5/21/84	thru 13	Revised Page Numbers	
4	5/21/84	3	Changed Remarks (52-1F003A,B,C,D)	





# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 13 OF 20  
REV. 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
			Changed Category and Removed Leak	
			Testing Requirements (52-1F004A)	
4	5/21/84	4	Added Relief Request Reference and	
			Alternate Testing Requirements	
4	5/21/84	5	Changed Remarks	
4	5/21/84	6	Changed Remark (52-1F036D)	
			Corrected Typo (HV-52-1F039A,B)	
			Deleted Stroke Time Requirement, changed	
			Alternate Test Performed to Refueling	
			and Added Remark (HV-52-108)	
4	5/21/84	8	Added Valve 52-1034 in Place of	
			Deleted Valve 52-1033	
4	5/21/84	11	Added 5 New Valves	
4	5/21/84	12	New Page	
4	5/21/84	13	New Page	
		M-55		
4	5/21/84	2	Deleted Relief Request Reference and	
			Alternate Testing Requirements	
4	5/21/84	4	Changed Category and Deleted Leak	
			Testing (HV-55-1F041)	
			Corrected Valve Number (55-1F045)	
			Corrected Class (HV-55-1F071)	
4	5/21/84	6	Corrected Valve Category	
4	5/21/84	7	Corrected Size (55-1058)	
			Deleted Valve 55-2047	
			Added Valves HV-55-120 and HV-55-121	
4	5/21/84	10	Revised Basis for Relief and Alternate	
			Testing Requirements	





# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 14 OF 20  
REV. 5 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
4	5/21/84	11	Deleted Valve HV-55-1F006	
			Deleted Valve HV-55-1F006 From Function	
			Revised Basis For Relief	
		M-56		
4	5/21/84	2	Corrected Size	
4	5/21/84	3	Added New Valve	
		M-57 Sh.1		
4	5/21/84	2	Changed Valve Category and Added Leak	
			Test Requirements (HV-57-162)	
			Revised Remark (HV-57-113)	
4	5/21/84	3	Changed Valve Category and Added Leak	
			Test Requirements (HV-57-161)	
			Corrected Size and Revised Remark	
			(HV-57-125)	
4	5/21/84	4	Corrected Drawing Coordinates and	
			Revised Remark (HV-57-122)	
			Changed Valve Category and Added Leak	
			Test Requirements (HV-57-163)	
4	5/21/84	7	Corrected Size	
4	5/21/84	8	Changed Valve Category and Added Leak	
			Test Requirements	
4	5/21/84	9	Changed Valve Category and Added Leak	
			Test Requirements (HV-57-164)	
			Added 3 New Valves	
		M-59		
4	5/21/84	13 <sup>thru</sup>	Revised Page Numbers	
4	5/21/84	2	Corrected Valve Numbers and Class.	
4	5/21/84	3	Corrected Class (59-1121; 59-1139)	



# REVISION LOG

NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 15 OF 20  
REV. 5



REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
			Added Relief Request References and	
			Alternate Testing Requirements	
			(HV-59-101: HV-59-102)	
			Corrected Actuator Type (HV-59-129A,B)	
4	5/21/84	4	Added Valve Types	
4	5/21/84	5	Deleted Fail Safe Testing Requirements	
			(HV-59-151A,B)	
			Corrected Class (SV-59-152B:	
			PSV-59-152A,B: PSV-59-153A,B)	
4	5/21/84	6	Corrected Class (SV-59-150A: SV-59-152A)	
			Added 5 New Valves	
4	5/21/84	7	New Page	
4	5/21/84	8	New Page	
4	5/21/84	9	New Page	
4	5/21/84	10	New Page	
4	5/21/84	11	New Page	
4	5/21/84	13	New Page	
		M-60		
4	5/21/84	2	Added Class (60-1073: 60-1074)	
			Added Valve 60-1026	
		M-61		
4	5/21/84	2	Added 3 New Valves	
		M-87 Sh.2		
4	5/21/84	1 thru 3	Revised Page Numbers	
4	5/21/84	2	Added 3 New Valves and Added Remark	
			for Valve HV-87-120A	
4	5/21/84	3	New Page	
		M-90		



# REVISION LOG

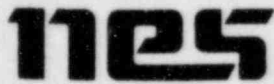
DOCUMENT NO. 80A2972

NUCLEAR ENERGY SERVICES, INC.

PAGE 16 OF 20  
REV. 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
4	5/21/84	1 thru 12	Revised Page Numbers	
4	5/21/84	2	Changed Valve Class	
4	5/21/84	3	Changed Valve Class (all)	
			Corrected Valve Category (90-0013A,B)	
4	5/21/84	4	Changed Valve Class	
4	5/21/84	5	Changed Valve Class	
4	5/21/84	6	Changed Valve Class	
4	5/21/84	7	Changed Valve Class (90-0045:	
			SV-90-045A,B: SV-90-047A,B)	
			Added Relief Request Reference	
			(SV-90-045A,B: SV-90-047A,B)	
			Added 2 New Valves (90-0069A,B)	
4	5/21/84	8	New Page	
4	5/21/84	9	New Page	
4	5/21/84	10	New Page	
4	5/21/84	11	New Page	
4	5/21/84	12	New Page	
			CRA 4237	
5	11/21/84	-	Revised to incorporate Bechtel and Peco	<i>J. Kellonperä</i>
			comments per CRA 4814	
			Revision Log	
5	"	thru 16	Revised page numbers	
5	"	17	New Page	
5	"	18	New Page	
5	"	19	New Page	
5	"	20	New Page	
			List of effective pages	
5	"	2	Added Rev. 5	





**REVISION LOG**  
 NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A2972

PAGE 18 OF 20  
 REV. 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
5	11/21/84	M-12 1 thru 6	Revised Page Numbers	
5	"	2	Added Relief Request (12-0030:12-0031)	
5	"	7	Added Page	
5	"	M-41 12	Deleted pressure test (41-1036A:41-1036B)	
5	"	21	Revised alternate testing	
5	"	M-46 2	Added Relief Request and alternate testing (HV-46-125:HV-46-126)	
5	"	3	Revised Relief Request and added valves (HV-46-125: HV-46-126)	
5	"	M49 1 thru 9	Revised page numbers	
5	"	3	Added Relief Request and alternate testing (49-1032)	
5	"	4	Added Relief Request and alternate testing (49-1033)	
5	"	5	Added Relief Request and alternate testing (49-1FO64:49-1FO65)	
5	"	10	New page	
5	"	M-51 Sh-1 1 thru 16	Revised page numbers	
5	"	7	Added Relief Request and alternate testing (51-1FO89B)	
5	"	8	Added Relief Request and alternate testing (51-1FO89D:51-1FO90B:51-1FO90D)	





# REVISION LOG

DOCUMENT NO. 80A2972

NUCLEAR ENERGY SERVICES, INC.

PAGE 19 OF 20  
REV. 5

REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
5	11/21/84	10	Added Relief Request and alternate testing (51-1032B: 51-1033B: 51-1115B: 51-1115D)	
5	"	11	Added Relief Request and alternate testing (51-1116B: 51-1116D)	
5	"	17	New page	
		M-51 SH.2		
5	"	1 thru 16	Revised page numbers	
5	"	7	Added Relief Request and alternate testing (51-1F089A)	
5	"	8	Added Relief Request and alternate testing (51-1F089C: 51-1F090A: 51-1F090C)	
5	"	10	Added Relief Request and alternate testing (51-1032A: 51-1033A)	
5	"	11	Added Relief Request and alternate testing (51-1115A: 51-1115C: 51-1116A: 51-1116C)	
5	"	17	New Page	
5	"	1 thru 12	Revised page numbers	
5	"	4	Added Relief Request and alternate testing (52-1F029A: 52-1F029B)	
5	"	5	Added Relief Request and alternate testing (52-1F030A: 52-1F030B)	
5	"	7	Added Relief Request and alternate testing (52-1048A: 52-1048B: 52-1045A: 52-1045B: 52-1046A: 52-1046B)	
5	"	13	Corrected valve I.D. (HV-52-108) and revised page numbers	







# LIST OF EFFECTIVE PAGES

Section	P&ID	Page	Rev.	Section	P&ID	Page	Rev.
Emerg. Svc.							
Water	M-11 Sh. 1	1	4				
		2	4	Emerg. Svc.			
		3	4	Water	M-11 Sh. 3	1	4
		4	4			2	4
		5	4			3	4
		6	4			total 3	
		7	4				
		8	4				
		9	4				
		10	4	RHR Svc. Water	M-12	1	5
		total 10				2	5
						3	5
						4	5
Emerg. Svc.						5	5
Water	M-11 Sh. 2	1	4			6	5
		2	4			7	5
		3	4			total 7	
		4	4				
		5	4	Reactor Encl.			
		6	4	Cooling Water	M-13	1	4
		7	4			2	4
		8	4			3	4
		9	4			total 3	
		10	4				
		11	4				
		12	4				
		13	4				
		14	4	Compressed Air	M-15 Sh. 6	1	4
		15	4			2	4
		16	4			total 2	
		17	4				
		total 17					













LIST OF EFFECTIVE PAGES

Section	P&ID	Page	Rev.	Section	P&ID	Page	Rev.
				CAC	M-57 Sh. 1	1	4
						2	4
						3	4
Fuel Pool						4	4
Cooling	M-53	1	4			5	4
		2	4			6	4
						7	4
		total				8	4
		2				9	4
						total	
HPCI	M-55	1	5			9	
		2	5				
		3	5				
		4	5	Primary Ctmt.			
		5	5	Inst. Gas	M-59	1	4
		6	5			2	4
		7	5			3	4
		8	5			4	4
		9	5			5	4
		10	5			6	4
		11	5			7	4
		12	5			8	4
		total				9	4
		12				10	4
						11	4
						12	4
						13	4
HPCI Turbine	M-56	1	4			total	
		2	4			13	
		3	4				
		4	4				
		total					
		4					

Rev 5

**INDEX**

<u>SYSTEMS</u>	<u>P&amp;ID NO.</u>	<u>REV. NO.</u>	<u>NO. OF PAGES</u>
Main Steam	M-01	29	4
Emergency Service Water	M-11 (Sh.1)	21	10
Emergency Service Water	M-11 (Sh.2)	25	17
Emergency Service Water	M-11 (Sh.3)	18	3
RHR Service Water	M-12	21	7   
Reactor Enclosure Cooling Water	M-13	18	3
Compressed Air	M-15(Sh.6)	0	2
Diesel Fuel Oil Transfer & Air Starting	M-20	24	17
Plant Process Radiation Monitor	M-26(Sh.3)	4	2
MSIV Leakage Control	M-40	11	5
Nuclear Boiler	M-41	17	21
Nuclear Boiler Vessel Instrumentation	M-42	17	2
Reactor Recirculation Pump	M-43	22	5
Reactor Water Cleanup	M-44	21	2
Control Rod Drive Hydraulic - Part A	M-46	20	3
Control Rod Drive Hydraulic - Part B	M-47	17	4
Standby Liquid Control	M-48	16	9
Reactor Core Isolation Cooling	M-49	23	10   
RCIC Pump Turbine	M-50	19	4
Residual Heat Removal	M-51 (Sh.1)	26	17
Residual Heat Removal	M-51 (Sh.2)	26	17   
Core Spray	M-52	25	14
Fuel Pool Cooling and Cleanup	M-53	22	2
High Pressure Coolant Injection	M-55	24	12   
HPCI Pump Turbine	M-56	21	4
Containment Atmosphere Control	M-57 (Sh.1)	17	9
Primary Containment Instrument Gas	M-59	17	13
Primary Containment Leak Testing	M-60	11	2
Liquid Radwaste Collection	M-61	19	2
Drywell Chilled Water	M-87 (Sh.2)	16	3
Control Enclosure Chilled Water	M-90	15	12





**VALVE INSERVICE TESTING PROGRAM PLAN**

**TABLES AND RELIEF REQUESTS**

**FOR**

**LIMERICK GENERATING STATION**

**UNIT 1**

**P&ID NO. M-12**

**RHR SERVICE WATER SYSTEM**



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
I2-0001A	3	E-6	C		20	CK	SA	--	ET-Q			Exercise during pump test.
I2-0001B	3	E-4	C		20	CK	SA	--	ET-Q			Exercise during pump test.
I2-0001C	3	E-5	C		20	CK	SA	--	ET-Q			Exercise during pump test.
I2-0001D	3	E-3	C		20	CK	SA	--	ET-Q			Exercise during pump test.
I2-0030	3	C-7	C		6	CK	SA	--	ET-Q	12-01		Reverse flow test only.
I2-0031	3	C-7	C		6	CK	SA	--	ET-Q	12-01		Reverse flow test only.
HV-12-017A	3	A-6	B		20	BF	MO	C	ET-Q ST-Q			





Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-12-017B	3	A-4	B		20	BF	MO	C	ET-Q ST-Q			
HV-12-031A	3	B-6	B		30	BF	MO	O	ET-Q ST-Q			
HV-12-031B	3	B-3	B		30	BF	MO	O	ET-Q ST-Q			
HV-12-031C	3	B-6	B		30	BF	MO	O	ET-Q ST-Q			
HV-12-031D	3	B-3	B		30	BF	MO	O	ET-Q ST-Q			
HV-12-032A	3	B-5	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-032B	3	B-4	B		30	BF	MO	C	ET-Q ST-Q			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-12-032C	3	B-5	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-032D	3	B-4	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-034A	3	A-5	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-034B	3	A-4	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-110	3	E-8	B	P	4	GT	MO	C	PV			
HV-12-111	3	A-6	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-112	3	D-7	B		36	BF	MO	C	ET-Q ST-Q			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-12-113	3	A-6	B		30	BF	MO	C	ET-Q ST-Q			
HV-12-114	3	D-7	B		36	BF	MO	C	ET-Q ST-Q			
12-0002A	3	D-6	B	P	20	GT	MA	O	PV			
12-0002B	3	D-5	B	P	20	GT	MA	O	PV			



RHR SERVICE WATER SYSTEM

P&ID NO: M-12 #1  
DOCUMENT NO. 80A2972

PAGE: 6 of 7  
REV 5



Valve No.	Class	Coord.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
I2-0002C	3	D-4	B	P	20	GT	MA	O	PV			
I2-0002D	3	D-3	B	P	20	GT	MA	O	PV			

**RELIEF REQUEST BASIS**

12-01

**System:** Residual Heat Removal Service Water **P&ID:** M-12

**Valve ID:** 12-0030:12-0031

**Valve Category:** C

**ASME Class:** 3

**Function:** Schuylkill make-up header to spray pond.

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** There are currently no design provisions to reverse flow test these check valves. Since the Schuylkill make-up header is normally pressurized leakage would be into the spray pond. A suitable test connection will be in place by the time of the first refueling outage.

**Alternate Testing:** None during the first fuel cycle. Assume quarterly testing following the first refueling outage.



NUCLEAR BOILER SYSTEM

P&ID NO: M-41  
DOCUMENT NO. 80A2972

PAGE: 12 of 21  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV41-1F097M	3	C-4	C		6	CK	SA	--	ET-Q	41-04	ET-R	
PSV41-1F097N	3	C-4	C		6	CK	SA	--	ET-Q	41-04	ET-R	
PSV41-1F097S	3	C-4	C		6	CK	SA	--	ET-Q	41-04	ET-R	
HV-41-130A	1	D-7	A		1½	GL	MO	C	ET-Q ST-Q LJ-R	41-06	ET-C ST-C	
HV-41-130B	1	D-7	A		1½	GL	MO	C	ET-Q ST-Q LJ-R	41-06	ET-C ST-C	
41-1036A	1	D-7	A C		1	CK	SA	--	ET-Q LJ-R	41-08	ET-C	
41-1036B	1	D-7	A C		1	CK	SA	--	ET-Q LJ-R	41-08	ET-C	

5

**RELIEF REQUEST BASIS**

41-08

**System:** Nuclear Boiler **P&ID:** M-41

**Valve ID:** 41-1036A,B

**Valve Category:** A C

**ASME Class:** 1

**Function:** Safeguard piping fill system injection to feedwater isolation valve for seal water.

**Test Requirement:** Exercise valve quarterly.

**Basis for Relief:** Forward flow operability can only be verified by injecting safeguard piping fill system water into the feedwater system. The safeguard piping fill system operates at a lower pressure than the normal operating feedwater system. Flow from the safeguard piping fill system into the feedwater system can only be accomplished when the feedwater system pressure is low enough to allow water injection from the safeguard piping fill system.

**Alternate Testing:** Valve will be forward flow exercised at cold shutdown and reverse flow closure will be verified during Appendix J, type C, valve leak testing at refueling.



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-46-125	--	C-3	B		1	GL	MO	C	ET-Q ST-Q	46-01	ET-R ST-R	
HV-46-126	--	C-3	B		1	GL	MO	C	ET-Q ST-Q	46-01	ET-R ST-R	
HV-46-127	--	C-4	B		1	GL	MO	O	ET-Q ST-Q	46-01	ET-R ST-R	
HV-46-128	--	C-4	B		1	GL	MO	O	ET-Q ET-Q	46-01	ET-R ST-R	





**RELIEF REQUEST BASIS**

46-01

**System:** Control Rod Hydraulic - Part A **P&ID:** M-46

**Valve ID:** HV-46-127: HV-46-128: HV-46-125: HV-46-126

**Valve Category:** B

**ASME Class:** -

**Function:** Reactor Recirculation Pump seal water block and purge valves

**Test Requirement:** Exercise and time quarterly.

**Basis for Relief:** Exercising these valves results in loss of or unnecessary transients to the seal water flow to the Reactor Recirculation Pump seals. Loss of seal water could result in extensive damage to the pump seals.

**Alternate Testing:** Exercise and time at refueling when the Reactor Recirculation Pumps are secured and loss of seal water will not cause pump damage.





**VALVE INSERVICE TESTING PROGRAM PLAN**

**TABLES AND RELIEF REQUESTS**

**FOR**

**LIMERICK GENERATING STATION**

**UNIT 1**

**P&ID NO. M-49**

**REACTOR CORE ISOLATION COOLING SYSTEM**

REACTOR CORE ISOLATION COOLING SYSTEM

P&ID NO: M-49  
DOCUMENT NO. 80A2972

PAGE: 2 of 10  
Rev 5



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
49-1F001	2	C-5	C	P	8	SK	SA MA	-- LO	ET-Q PV			Forward flow test only. Manual locked open stop check valve.
HV-49-1F002	2	C-6	A C		2	SK	SA MO	-- O	ET-Q ST-Q LJ-R			Motor operated stop check. Use motor operator to verify closure.
HV-49-1F007	1	E-6	A		3	GL	MO	O	ET-Q ST-Q LJ-R	49-01	ET-C ST-C	
HV-49-1F008	1	E-6	A		3	GL	MO	O	ET-Q ST-Q LJ-R	49-01	ET-C ST-C	
HV-49-1F010	2	E-3	B		6	GT	MO	O	ET-Q ST-Q			
HV-49-1F012	2	D-5	B		6	GT	MO	O	ET-Q ST-Q	49-02	ET-C ST-C	
HV-49-1F013	2	D-5	A		6	GT	MO	C	ET-Q ST-Q LJ-R	49-03	ET-C ST-C	

REACTOR CORE ISOLATION COOLING SYSTEM

P&ID NO: M-49  
DOCUMENT NO. 80A2972

PAGE: 3 of 10  
Rev 5



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-49-1F019	2	C-6	A		2	GL	MO	C	ET-Q ST-Q LJ-R			
HV-49-1F022	2	E-5	B		4	GL	MO	C	ET-Q ST-Q			
HV-49-1F025	2	C-2	B		1	GL	AO	O	ET-Q ST-Q			
HV-49-1F026	2	B-2	B		1	GL	AO	O	ET-Q ST-Q			
HV-49-1F029	2	B-4	B		6	GT	MO	C	ET-Q ST-Q			
HV-49-1F031	2	B-7	A		6	GT	MO	C	ET-Q ST-Q LJ-R			
49-1032	2	B-5	C		1½	CK	SA	--	ET-Q	49-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.



REACTOR CORE ISOLATION COOLING SYSTEM

P&ID NO: M-49  
DOCUMENT NO. 80A2972

PAGE: 4 of 10  
Rev 5



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
49-1033	2	B-5	C		1½	CK	SA	--	ET-Q	49-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation
HV-49-1F060	2	C-6	A		8	GT	MO	O	ET-Q ST-Q LJ-R	49-01	ET-C ST-C	
HV-49-1F076	1	E-6	A		1½	GL	MO	C	ET-Q ST-Q LJ-R			
HV-49-1F080	2	A-7	A		3	GT	MO	O	ET-Q ST-Q LJ-R			
HV-49-1F084	2	C-8	A		3	GT	MO	O	ET-Q ST-Q LJ-R			
49-1F011	2	E-3	C		6	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
49-1F014	2	D-4	C		6	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.







Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
49-1F021	2	C-4	C		2	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
49-1F030	2	B-6	C		6	CK	SA	--	ET-Q			Forward flow test only.
49-1F064	2	B-5	C		2	CK	SA	--	ET-Q	49-04	ET-C	Valve cycling is verified by system check to verify water inventory.
49-1F065	2	C-5	C		2	CK	SA	--	ET-Q	49-04	ET-C	Valve cycling is verified by system check to verify water inventory.
49-1F068	2	A-8	C		3	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.
49-1F081	2	A-7	C		3	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.
49-1017	2	A-8	C		3	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.



REACTOR CORE ISOLATION COOLING SYSTEM

P&ID NO: M-49  
DOCUMENT NO. 80A2972

PAGE: 6 of 10  
Rev 5



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
49-1018	2	A-7	C		3	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.
49-1F009	2	F-3	B	P	6	GT	MA	LO	PV			
49-1031	2	B-5	B	P	1½	GL	MA	O	PV			
49-1F028	2	C-3	C		2	CK	SA	--	ET-Q LJ-R			Forward flow test only.



### RELIEF REQUEST BASIS

49-01

**System:** Reactor Core Isolation Cooling **P&ID:** M-49

**Valve ID:** HV-49-1F007, HV-49-1F008, HV-49-1F060

**Valve Category:** A

**ASME Class:** 1 (HV-49-1F007: HV-49-1F008)  
2 (HV-49-1F060)

**Function:** RCIC steam supply containment isolation valves  
(HV-49-1F007) and (HV-49-1F008)  
RCIC Turbine steam discharge to suppression pool isolation valve  
(HV-49-1F060)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Failure of one of these valves in the closed position would cause total loss of system function which would put the plant in an unsafe condition.

**Alternate Testing:** Exercise and time during cold shutdown.



**RELIEF REQUEST BASIS**

49-02

**System:** Reactor Core Isolation Cooling **P&ID:** M-49

**Valve ID:** HV-49-1F012

**Valve Category:** B

**ASME Class:** 2

**Function:** RCIC pump discharge line

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Failure of valve in closed position would cause total loss of system function which would put the plant in an unsafe condition.

**Alternate Testing:** Exercise and time during cold shutdown.



**RELIEF REQUEST BASIS**

49-03

**System:** Reactor Core Isolation Cooling **P&ID:** M-49

**Valve ID:** HV-49-1F013

**Valve Category:** A

**ASME Class:** 2

**Function:** RCIC injection to feedwater line

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Valve isolates Feedwater System Pressure from the RCIC System during plant operation. In order to protect the RCIC low pressure pump suction piping, valve HV-49-1F012 would have to be closed before HV-49-1F013 could be exercised. Failure of HV-49-F012 in the closed position would cause total loss of system function.

**Alternate Testing** Exercise and time during cold shutdown.

**RELIEF REQUEST BASIS**

49-04

**System:** Reactor Core Isolation Cooling **P&ID:** M-49**Valve ID:** 49-1032;49-1033;49-1F064;49-1F065**Valve Category:** C**ASME Class:** 2**Function:** ECCS pumps discharge line stay fill check valves from Condensate Transfer System. (49-1F064;49-1F065) ECCS pump discharge line stay fill check valve from Safeguard Piping Fill System. (49-1032;49-1033)**Test Requirement:** Exercise test quarterly**Basis for Relief:** Monthly system venting requirements will verify these ECCS injection lines are water filled during normal operation. Complete operability testing of these fill line check valves requires operator entry to a restricted high radiation area of greater than 100mR/hr during normal operation. Testing of each valve is estimated to take at least 20 minutes to complete. Area radiation levels during cold shutdown are reduced to approximately 2.5mR/hr. Thus, exercise testing of these check valves during cold shutdown reduces man Rem. exposure by a factor of 40 for each valve.**Alternate Testing** Exercise test at cold shutdown.





VALVE INSERVICE TESTING PROGRAM PLAN

TABLES AND RELIEF REQUESTS

FOR

LIMERICK GENERATING STATION

UNIT 1

P&ID NO. M-51 (SH.1)

RESIDUAL HEAT REMOVAL SYSTEM

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 2 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F003B	2	E-3	B		18	GT	MO	O	ET-Q ST-Q			
HV-51-1F004B	2	C-7	A		24	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-1F004D	2	C-7	A		24	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-1F006B	2	B-7	B		20	GT	MO	C	ET-Q ST-Q			
HV-51-1F007B	2	C-6	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F007D	2	C-5	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F009	1	E-8	A		20	GT	MO	C	ET-Q ST-Q LC-R	51-01	ET-R ST-R	

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 3 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F010B	2	D-5	B		18	GL	MO	C	ET-Q ST-Q			
HV-51-1F011B	2	D-4	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F014B	3	B-3	B		20	GT	MO	C	ET-Q ST-Q			
HV-51-1F015B	1	F-6	A		12	GL	MO	C	ET-Q ST-Q LC-R	51-01	ET-R ST-R	
HV-51-1F016B	2	G-5	A		16	GT	MO	C	ET-Q ST-Q LJ-R			
HV-51-1F017B	1	F-6	A		12	GT	MO	C	ET-Q ST-Q LC-R	51-03	ET-R ST-R	
HV-51-1F017D	1	G-7	A		12	GT	MO	C	ET-Q ST-Q LC-R	51-03	ET-R ST-R	

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 4 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F021B	2	G-7	A		16	GT	MO	C	ET-Q ST-Q LJ-R			
HV-51-1F024B	2	E-6	B		18	GL	MO	C	ET-Q ST-Q			
HV-51-1F026B	2	B-4	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F027B	2	E-6	A		6	GL	MO	C	ET-Q ST-Q LJ-R			
51-1F031B	2	C-5	C		18	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
51-1F031D	2	B-5	C		18	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
HV-51-1F041B	1	F-7	A C		12	CK	SA AO	--	ET-Q LC-R	51-02	ET-R	Air operator used for test only.

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 5 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F041D	1	G-7	A C		12	CK	SA AO	--	ET-Q LC-R	51-02	ET-R	Air operator used for test only.
51-1F046B	2	D-6	C		4	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
51-1F046D	2	D-5	C		4	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
HV-51-1F047B	2	D-4	B		18	GT	MO	O	ET-Q ST-Q			
HVC51-1F048B	2	E-4	B		18	BF	MO	O	ET-Q ST-Q			
HV-51-1F050B	1	F-7	A C		12	CK	SA AO	--	ET-Q LC-R	51-02	ET-R	Air operator used for test only.

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 6 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PVC51-1F051B	2	E-2	B		6	GL	AO	C	FS-Q			Pressure control valve not required to be tested under Section XI. Verify fail safe closure quarterly.
HV-51-1F052B	2	E-1	B		10	GL	MO	C	ET-Q ST-Q			
LVC51-1F053B	2	D-4	B		3	GL	AO	C	FS-Q			Level control valve not required to be tested under Section XI. Verify fail safe closure quarterly.
PSV51-1F055B	2	D-4	A C		6	RL	SA	C	RT-R LJ-R			
51-1F067B	2	B-8	B	P	20	GT	MA	LC	PV			
HV-51-1F068B	3	B-4	B		20	GL	MO	C	ET-Q ST-Q			



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 7 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F073	3	E-2	B		18	GT	MO	C	ET-Q ST-Q			
HV-51-1F074	3	E-3	B		1	GL	AO	O	ET-Q ST-Q FS-Q			
HV-51-1F075	2	E-3	B		18	GT	MO	C	ET-Q ST-Q			
51-1F078	2	E-3	C		18	CK	SA	--	ET-Q			Manual actuator for testing.
HV-51-1F079B	2	D-2	B		1	GL	AO	C	ET-Q ST-Q FS-Q			
HV-51-1F080B	2	D-1	B		1	GL	AO	C	ET-Q ST-Q FS-Q			
51-1F089B	2	H-6	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 8 of 17  
Rev 5

5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
51-1F089D	2	H-6	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1F090B	2	G-6	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1F090D	2	G-6	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
HVC51-1F103B	2	C-3	B		1	GL	MO	C	ET-Q ST-Q			
HVC51-1F104B	2	C-2	A		1	GL	MO	C	ET-Q ST-Q LJ-R			
HVC51-103B	2	E-3	B	P	8	GL	AO	C	PV			
HV-51-105B	2	D-6	A		4	GT	MO	O	ET-Q ST-Q LJ-R			

5

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 9 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-125B	2	D-6	A		18	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-142B	1	F-7	A	P	1	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-51-142D	1	G-7	A	P	1	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-51-151B	1	E-7	A	P	1½	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-51-153B	2	E-1	B		1½	GL	MO	C	ET-Q ST-Q			
HVC-51-154B	2	E-2	B		6	GL	MO	C	ET-Q ST-Q			
PSV-51-101B	2	D-4	A C		6	CK	SA	C	RT-R LJ-R			A check valve used as a vacuum breaker. Valve will be bench tested at refueling.

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 10 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV-51-106B	2	C-3	A C		3/4	RL	SA	C	RT-R LJ-R			
HV-51-182B	2	C-5	B	P	22	GT	MO	C	PV			
51-1023	2	H-4	B	P	16	GT	MA	LC	PV			
51-1032B	2	G-6	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1033B	2	G-6	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1115-B	2	A-4	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1115-D	2	A-5	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 11 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
51-1116B	2	A-4	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1116D	2	A-5	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1F065D	1	G-8	B	P	12	GT	MA	LO	PV			
51-1114B	2	B-4	B	P	1½	GL	MA	O	PV			
51-1114D	2	A-5	B	P	1½	GL	MA	O	PV			
HV-51-157B	3	B-3	B	P	2	GL	AO	C	PV			Used only at cold shutdown to flush heat exchanger.
HV-51-156B	3	B-3	B	P	2	GL	AO	C	PV			Used only at cold shutdown to flush heat exchanger.



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 12 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV51-1F025B	2	G-5	C		1	RL	SA	C	RT-R			
PSV51-1F025D	2	G-6	C		1	RL	SA	C	RT-R			
PSV51-1F030B	2	C-6	A C		1	RL	SA	C	RT-R LJ-R			
PSV51-1F030D	2	C-7	A C		1	RL	SA	C	RT-R LJ-R			
51-1F060B	1	F-7	B	P	12	GT	MA	LO	PV			
51-1F065B	1	F-8	B	P	12	GT	MA	LO	PV			



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #1  
DOCUMENT NO. 80A2972PAGE: 13 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-158B	3	B-4	B	P	2	GL	AO	C	PV			Used only at cold shutdown to flush heat exchangers
51-1F018B	2	C-6	B	P	4	GT	MA	LO	PV			
51-1F018D	2	C-5	B	P	4	GT	MA	LO	PV			

**RELIEF REQUEST BASIS**

51-01 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** HV-51-1F008: HV-51-1F009: HV-51-1F015A,B: HV-51-1F022: HV-51-1F023

**Valve Category:** A

**ASME Class:** 1 (HV-51-1F008: HV-51-1F009: HV-51-1F015A,B: HV-51-1F022)  
2 (HV-51-1F023)

**Function:** Shutdown cooling valves (HV-51-1F008, HV-51-1F009 and HV-51-1F015A and B) and head spray isolation valves (HV-51-1F022 and HV-51-1F023)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Valves are interlocked to prevent opening at reactor pressures greater than 75 psig. Exercising at reactor pressure greater than 75 psig would result in over pressurization of the system piping and could result in an inter-system LOCA. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested, timed and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**

51-02 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** HV-51-1F050A,B: HV-51-1F041A,B,C,D

**Valve Category:** A C

**ASME Class:** 1

**Function:** RHR Shutdown cooling return containment isolation (HV-51-1F050A,B) Low Pressure Coolant Injection Check Valves (HV-51-1F041A,B,C,D)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** These valves perform a pressure isolation function between the high pressure Reactor Coolant System and the low pressure RHR System. There are no provisions for monitoring leakage across the valves. If the valves were exercised during normal operation and failed to re-close the potential for an inter-system LOCA exists. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**

51-03 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** HV-51-1F017 A,B,C,D

**Valve Category:** A

**ASME Class:** 1

**Function:** LPCI Injection Valves

**Test Requirement:** Exercise valve quarterly

**Basis for Relief:** Exercising these valves during normal operation increases the possibility of an inter-system loss-of-coolant accident. If one of these valves are opened a single downstream check valve becomes the sole pressure boundary between the Reactor Coolant System and the low pressure RHR system. There are no provisions for monitoring leakage across the valves. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**

51-04 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** 51-1F089 A, B, C, D:51-1F090 A, B, C, D:51-1032 A, B, 51-1033 A, B:51-1115 A, B, C, D:51-1116 A, B, C, D

**Valve Category:** C

**ASME Class:** 2

**Function:** ECCS pump discharge line stay fill check valves from Condensate Transfer System. (51-1F089 A, B, C, D:51-1F090 A, B, C, D:51-1032 A, B:51-1033A, B) ECCS pump discharge line stay fill check valves from Safeguards Piping Fill System (51-1115 A, B:51-1116A, B)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Monthly system venting requirements will verify these ECCS injection lines are water filled during normal operation. Complete operability testing of these fill line check valves requires operator entry to a restricted high radiation area of greater than 100mR/hr during normal operation. Testing of each valve is estimated to take at least 20 minutes to complete. Area radiation levels during cold shutdown are reduced to approximately 2.5 mR/hr. Thus, exercise testing of these check valves during cold shutdown reduces man. rem exposure by a factor of 40 for each valve.

**Alternate Testing:** Exercise test at cold shutdown.





**VALVE INSERVICE TESTING PROGRAM PLAN**

**TABLES AND RELIEF REQUESTS**

**FOR**

**LIMERICK GENERATING STATION**

**UNIT 1**

**P&ID NO. M-51 (SH.2)**

**RESIDUAL HEAT REMOVAL SYSTEM**



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 2 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F003A	2	D-6	B		18	GT	MO	O	ET-Q ST-Q			
HV-51-1F004A	2	C-3	A		24	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-1F004C	2	C-2	A		24	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-1F006A	2	B-2	B		20	GT	MO	C	ET-Q ST-Q			
HV-51-1F007A	2	C-4	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F007C	2	C-4	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F008	1	E-3	A		20	GT	MO	C	ET-Q ST-Q LC-R	51-01	ET-R ST-R	

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 3 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F010A	2	D-4	B		18	GL	MO	C	ET-Q ST-Q			
HV-51-1F011A	2	D-5	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F014A	3	B-7	B		20	GT	MO	C	ET-Q ST-Q			
HV-51-1F015A	1	E-3	A		12	GL	MO	C	ET-Q ST-Q LC-R	51-01	ET-R ST-R	
HV-51-1F016A	2	G-6	A		16	GT	MO	C	ET-Q ST-Q LJ-R			
HV-51-1F017A	1	F-3	A		12	GT	MO	C	ET-Q ST-Q LC-R	51-03	ET-R ST-R	
HV-51-1F017C	1	F-3	A		12	GT	MO	C	ET-Q ST-Q LC-R	51-03	ET-R ST-R	

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 4 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV51-1F029	2	C-4	C		1	RL	SA	C	RT-R			
HV-51-1F021A	2	G-3	A		16	GT	MO	C	ET-Q ST-Q LJ-R			
HV-51-1F022	1	H-2	A		6	GT	MO	C	ET-Q ST-Q LC-R	51-01	ET-R ST-R	
HV-51-1F023	2	H-3	A		6	GT	MO	C	ET-Q ST-Q LC-R	51-01	ET-R ST-R	
HV-51-1F024A	2	D-4	B		18	GL	MO	C	ET-Q ST-Q			
HV-51-1F026A	2	C-5	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F027A	2	D-3	A		6	GL	MO	C	ET-Q ST-Q LJ-R			

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 5 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
51-1F031A	2	B-5	C		18	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
51-1F031C	2	B-5	C		18	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
HV-51-1F040	2	G-6	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F041A	1	F-2	A C		12	CK	SA AO	--	ET-Q LC-R	51-02	ET-R	Air operator used for test only.
HV-51-1F041C	1	F-2	A C		12	CK	SA AO	--	ET-Q LC-R	51-02	ET-R	Air operator used for test only.
51-1F046A	2	C-4	C		4	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
51-1F046C	2	C-4	C		4	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 6 of 17  
Rev 5

5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-1F047A	2	C-5	B		18	GT	MO	O	ET-Q ST-Q			
HVC51-1F048A	2	E-5	B		18	BF	MO	O	ET-Q ST-Q			
HV-51-1F049	2	G-6	B		4	GT	MO	C	ET-Q ST-Q			
HV-51-1F050A	1	E-3	A C		12	CK	SA AO	--	ET-Q LC-R	51-02	ET-R	Air operator used for test only.
PVC51-1F051A	2	F-7	B		6	GL	AO	C	FS-Q			Pressure control valve not required to be tested under Section XI. Verify fail safe closure quarterly.
HV-51-1F052A	2	F-8	B		10	GL	MO	C	ET-Q ST-Q			
LVC51-1F053A	2	D-6	B		3	GL	AO	C	FS-Q			Level control valve not required to be tested under Section XI. Verify fail safe closure quarterly.

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 7 of 17  
Rev 5

5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV-51-I22	2	H-2	A C		1	RL	SA	C	LJ-R			Thermal relief valve not required to be tested under Section XI. Containment Isolation Boundary Valve.
PSV51-1F055A	2	D-5	A C		6	RL	SA	C	RT-R LJ-R			
51-1F067A	2	B-2	B	P	20	GT	MA	LC	PV			
HV-51-1F068A	3	B-6	B		20	GL	MO	C	ET-Q ST-Q			
HV-51-1F079A	2	D-7	B		1	GL	AO	C	ET-Q ST-Q FS-Q			
HV-51-1F080A	2	D-8	B		1	GL	AO	C	ET-Q ST-Q FS-Q			
51-1F089A	2	G-4	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.

5



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 8 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
51-1F089C	2	G-4	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1F090A	2	G-4	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1F090C	2	G-4	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
HVC51-1F103A	2	C-7	A		1	GL	MO	C	ET-Q ST-Q LJ-R			
HVC51-1F104A	2	C-7	B		1	GL	MO	C	ET-Q ST-Q			
HVC51-103A	2	E-7	B	P	8	GL	AO	C	PV			
HV-51-105A	2	D-3	A		4	GT	MO	O	ET-Q ST-Q LJ-R			



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 9 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-51-125A	2	D-3	A		18	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-130	2	D-3	A		6	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-131	2	D-6	A		6	GT	MO	O	ET-Q ST-Q LJ-R			
HV-51-142A	1	F-2	A	P	1	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-51-142C	1	F-2	A	P	1	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-51-151A	1	E-3	A	P	1½	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-51-153A	2	F-7	B		1½	GL	MO	C	ET-Q ST-Q			

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 10 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HVC-51-154A	2	F-7	B		6	GL	MO	C	ET-Q ST-Q			
PSV-51-101A	2	D-6	A C		6	RL	SA	C	RT-R LJ-R			A check valve used as a vacuum breaker. Valve will be bench tested at refueling.
PSV-51-106A	2	C-7	A C		3/4	RL	SA	C	RT-R LJ-R			
HV-51-182A	2	C-5	B	P	22	GT	MO	C	PV			
51-1007	2	A-4	B	P	16	GT	MA	C	PV			
51-1032A	2	G-4	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.
51-1033A	2	G-4	C		4	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory.



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 11 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
51-1115A	2	A-5	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1115C	2	A-4	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1116A	2	A-5	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1116C	2	A-4	C		1½	CK	SA	--	ET-Q	51-04	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
51-1F060A	1	E-2	B	P	12	GT	MA	LO	PV			
51-1F065A	1	F-2	B	P	12	GT	MA	LO	PV			
51-1F065C	1	F-2	B	P	12	GT	MA	LO	PV			



## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 12 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
5I-1F083	2	E-4	B	P	4	GL	MA	LC	PV			
HV-51-157A	3	B-7	B	P	2	GL	AO	C	PV			Used only at cold shutdown to flush heat exchanger.
HV-51-156A	3	A-7	B	P	2	GL	AO	C	PV			Used only at cold shutdown to flush heat exchanger.
PSV51-1F025A	2	F-5	C		1	RL	SA	C	RT-R			
PSV51-1F025C	2	G-4	C		1	RL	SA	C	RT-R			
PSV51-1F030A	2	C-3	A C		1	RL	SA	C	RT-R LJ-R			
PSV51-1F030C	2	C-2	A C		1	RL	SA	C	RT-R LJ-R			

## RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO: M-51 #2  
DOCUMENT NO. 80A2972PAGE: 13 of 17  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV51-1F097	2	A-5	A C		4	RL	SA	C	RT-R LJ-R			
PSV51-155	2	E-2	A C		3/4	RL	SA	C	LJ-R			Thermal relief valve not required to be tested under Section XI. Containment isolation boundary valve.
51-1114A	2	A-5	B	P	1 1/2	GL	MA	O	PV			
51-1114C	2	A-4	B	P	1 1/2	GL	MA	O	PV			
HV-51-158A	3	B-6	B	P	2	GL	AO	C	PV			Used only at cold shutdown to flush heat exchanger.
51-1F018A	2	C-4	B	P	4	GT	MA	O	PV			
51-1F018C	2	C-4	B	P	4	GT	MA	O	PV			



**RELIEF REQUEST BASIS**

51-01 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** HV-51-1F008: HV-51-1F009: HV-51-1F015A,B: HV-51-1F022: HV-51-1F023

**Valve Category:** A

**ASME Class:** 1 (HV-51-1F008: HV-51-1F009: HV-51-1F015A,B: HV-51-1F022)  
2 (HV-51-1F023)

**Function:** Shutdown cooling valves (HV-51-1F008, HV-51-1F009 and HV-51-1F015A and B) and head spray isolation valves (HV-51-1F022 and HV-51-1F023)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Valves are interlocked to prevent opening at reactor pressures greater than 75 psig. Exercising at reactor pressure greater than 75 psig would result in over pressurization of the system piping and could result in an inter-system LOCA. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested, timed and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**

51-02 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** HV-51-1F050A,B; HV-51-1F041A,B,C,D

**Valve Category:** A C

**ASME Class:** I

**Function:** RHR Shutdown cooling return containment isolation (HV-51-1F050A,B) Low Pressure Coolant Injection Check Valves (HV-51-1F041A,B,C,D)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** These valves perform a pressure isolation function between the high pressure Reactor Coolant System and the low pressure RHR System. There are no provisions for monitoring leakage across the valves. If the valves were exercised during normal operation and failed to re-close the potential for an inter-system LOCA exists. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**

51-03 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51**Valve ID:** HV-51-1F017 A,B,C,D**Valve Category:** A**ASME Class:** 1**Function:** LPCI Injection Valves**Test Requirement:** Exercise valve quarterly

**Basis for Relief:** Exercising these valves during normal operation increases the possibility of an inter-system loss-of-coolant accident. If one of these valves are opened a single downstream check valve becomes the sole pressure boundary between the Reactor Coolant System and the low pressure RHR system. There are no provisions for monitoring leakage across the valves. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**

51-04 (SH.1 &amp; SH.2)

**System:** Residual Heat Removal **P&ID:** M-51

**Valve ID:** 51-1F089 A, B, C, D; 51-1F090 A, B, C, D; 51-1032 A, B, 51-1033 A, B; 51-1115 A, B, C, D; 51-1116 A, B, C, D

**Valve Category:** C

**ASME Class:** 2

**Function:** ECCS pump discharge line stay fill check valves from Condensate Transfer System. (51-1F089 A, B, C, D; 51-1F090 A, B, C, D; 51-1032 A, B; 51-1033A, B) ECCS pump discharge line stay fill check valves from Safeguards Piping Fill System (51-1115 A, B; 51-1116A, B)

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Monthly system venting requirements will verify these ECCS injection lines are water filled during normal operation. Complete operability testing of these fill line check valves requires operator entry to a restricted high radiation area of greater than 100mR/hr during normal operation. Testing of each valve is estimated to take at least 20 minutes to complete. Area radiation levels during cold shutdown are reduced to approximately 2.5 mR/hr. Thus, exercise testing of these check valves during cold shutdown reduces man. rem exposure by a factor of 40 for each valve.

**Alternate Testing:** Exercise test at cold shutdown.





VALVE INSERVICE TESTING PROGRAM PLAN

TABLES AND RELIEF REQUESTS

FOR

LIMERICK GENERATING STATION

UNIT 1

P&ID NO. M-52

CORE SPRAY SYSTEM



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-52-1F001A	2	B-6	A		16	GT	MO	O	ET-Q ST-Q LJ-R			
HV-52-1F001B	2	B-7	A		16	GT	MO	O	ET-Q ST-Q LJ-R			
HV-52-1F001C	2	B-7	A		16	GT	MO	O	ET-Q ST-Q LJ-R			
HV-52-1F001D	2	B-8	A		16	GT	MO	O	ET-Q ST-Q LJ-R			
52-1F002A	2	B-5	B	P	14	GT	MA	LC	PV			
52-1F002B	2	B-3	B	P	14	GT	MA	LC	PV			
52-1F002C	2	B-5	B	P	14	GT	MA	LC	PV			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1F002D	2	B-3	B	P	14	GT	MA	LC	PV			
52-1F003A	2	C-5	C		12	CK	SA	--	ET-Q			Exercise during pump test.
52-1F003B	2	C-3	C		12	CK	SA	--	ET-Q			Exercise during pump test.
52-1F003C	2	C-4	C		12	CK	SA	--	ET-Q			Exercise during pump test.
52-1F003D	2	C-3	C		12	CK	SA	--	ET-Q			Exercise during pump test.
52-1F004A	2	F-5	B		12	GT	MO	O	ET-Q ST-Q			
52-1F004B	2	F-5	B		12	GT	MO	O	ET-Q ST-Q			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-52-1F005	I	F-6	A		12	GT	MO	C	ET-Q ST-Q LC-R	52-01	ET-R ST-R	
HV-52-1F006A	1	F-6	A C		12	CK AO	SA O	--	ET-Q LC-R	52-01	ET-R	Air Operator used for test only.
HV-52-1F006B	1	F-6	A C		12	CK AO	SA O	--	ET-Q LC-R	52-01	ET-R	Air Operator used for test only.
HV-52-1F015A	2	D-6	A		10	GL	MO	C	ET-Q ST-Q LJ-R			
HV-52-1F015B	2	D-6	A		10	GL	MO	C	ET-Q ST-Q LJ-R			
52-1F029A	2	F-4	C		2	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory
52-1F029B	2	G-4	C		2	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory



## CORE SPRAY SYSTEM

P&ID NO: M-52  
DOCUMENT NO. 80A2972PAGE: 5 of 14  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1F030A	2	F-4	C		2	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory
52-1F030B	2	G-4	C		2	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory
HV-52-1F031A	2	C-6	A		4	GL	MO	O	ET-Q ST-Q LJ-R			
HV-52-1F031B	2	C-6	A		4	GL	MO	O	ET-Q ST-Q LJ-R			
52-1F036A	2	C-5	C		3	CK	SA	--	ET-Q			Exercise during pump test.
52-1F036B	2	C-3	C		3	CK	SA	--	ET-Q			Exercise during pump test.
52-1F036C	2	C-4	C		3	CK	SA	--	ET-Q			Exercise during pump test.





Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1F036D	2	C-3	C		3	CK	SA	--	ET-Q			Exercise during pump test.
HV-52-1F037	2	F-5	A		12	GT	MO	C	ET-Q ST-Q LP-R	52-01	ET-R ST-R	
HV-52-1F039A	1	E-6	A	P	1	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-52-1F039B	1	F-6	A	P	1	GL	AO	C	PV LC-R			Valve opens and automatically recloses to equalize pressure across testable check valve.
HV-52-108	1	F-6	A C		12	SK	SA AO	-- O	ET-Q FS-Q LC-R	52-01	ET-R FS-R	Not air testable. Air operator to assist closing only.
HV-52-127	2	B-2	A		6	GT	MO	C	ET-Q ST-Q LJ-R			
HV-52-128	2	B-2	A		6	GT	MO	C	ET-Q ST-Q LJ-R			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1048A	2	B-7	C		1	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
52-1048B	2	B-8	C		1	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguards piping fill pump operation.
52-1045A	2	C-5	C		1½	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
52-1045B	2	C-3	C		1½	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
52-1046A	2	C-5	C		1½	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
52-1046B	2	C-3	C		1½	CK	SA	--	ET-Q	52-02	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation.
52-1051A	2	F-3	C		1½	CK	SA	--	ET-Q			Exercise during pump test. Forward flow test only.



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1051B	2	E-3	C		1½	CK	SA	--	ET-Q			Exercise during pump test. Forward flow test only.
52-1052A	2	F-3	B	P	1½	GL	MA	O	PV			
52-1052B	2	E-3	B	P	1½	GL	MA	O	PV			
52-1F007A	1	F-6	B	P	12	GT	MA	LO	PV			
52-1F007B	1	F-6	B	P	12	GT	MA	LO	PV			
52-1034	2	D-5	B	P	4	GL	MA	C	PV			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1F020A	2	C-5	B	P	12	GT	MA	LO	PV			
52-1F020B	2	C-3	B	P	12	GT	MA	LO	PV			
52-1F020C	2	C-4	B	P	12	GT	MA	LO	PV			
52-1F020D	2	C-2	B	P	12	GT	MA	LO	PV			
PSV52-1F012A	2	D-5	C		2	RL	SA	C	RT-R			
PSV52-1F012B	2	F-4	C		2	RL	SA	C	RT-R			
PSV52-1F032A	2	B-5	C		2	RL	SA	C	RT-R			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Norm'l Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
PSV52-1F032B	2	B-3	C		2	RL	SA	C	RT-R			
PSV52-1F032C	2	B-5	C		2	RL	SA	C	RT-R			
PSV52-1F032D	2	B-3	C		2	RL	SA	C	RT-R			
52-1047A	2	B-7	B	P	1	GT	MA	O	PV			
52-1047B	2	B-8	B	P	1	GT	MA	O	PV			
52-1044A	2	C-5	B	P	1½	GT	MA	O	PV			
52-1044B	2	C-3	B	P	1½	GL	MA	O	PV			

## CORE SPRAY SYSTEM

P&ID NO: M-52  
DOCUMENT NO. 80A2972PAGE: 11 of 14  
Rev 5

5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1050A	2	F-3	B	P	2	GL	MA	O	PV			
52-1050B	2	E-3	B	P	2	GL	MA	O	PV			
52-1F010A	2	C-5	B	P	3	GL	MA	LO	PV			
52-1F010B	2	C-3	B	P	3	GL	MA	LO	PV			
52-1F010C	2	C-4	B	P	3	GL	MA	LO	PV			
52-1F010D	2	C-3	B	P	3	GL	MA	LO	PV			
52-1065A	2	F-2	B	P	1½	GL	MA	LO	PV			

## CORE SPRAY SYSTEM

P&ID NO: M-52  
DOCUMENT NO. 80A2972PAGE: 12 of 14  
Rev 5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
52-1065B	2	E-2	B	P	1 1/2	GL	MA	LO	PV			
PSV-52-127	2	B-2	AC		3/4	RL	SA	C	LJ-R			Thermal relief valve. Not required to be tested under Section XI. Containment Isolation boundary valve.
HV-52-139	2	B-7	A		1	GL	MO	O	ET-Q ST-Q LJ-R			
SV-52-139	2	A-7	A		1	GL	SO	O	ET-Q ST-Q FS-Q LJ-R			

**RELIEF REQUEST BASIS**

52-01

**System:** Core Spray **P&ID:** M-52

**Valve ID:** HV-52-1F005: HV-52-108: HV-52-1F006A,B HV-52-1F037

**Valve Category:** A (HV-52-1F005: HV-52-1F037)  
AC (HV-52-1F006A,B: HV-52-108)

**ASME Class:** 1 (HV-52-1F005: HV-52-1F006A,B: HV-52-108)  
2 (HV-52-1F037)

**Function:** Core Spray System Containment isolation check and block valves.

**Test Requirement:** Verify valve operability quarterly (HV-52-1F006A,B). Verify valve operability and fail-safe function quarterly (HV-52-108). Exercise and stroke time quarterly (HV-52-1F005: HV-52-1F037).

**Basis for Relief:** These valves perform a pressure isolation function between the high pressure Reactor Coolant System and the low pressure Core Spray System. There are no provisions for monitoring leakage across any of the valves. If the valves were exercised during normal operation and failed to fully re-close the potential for an inter-system-LOCA exists. Measurement of post-operation leakage requires entry into the Primary Containment which is maintained with an inerted nitrogen atmosphere, except at refueling.

**Alternate Testing:** Valves will be operability tested and Section XI, Category A, seat leak tested at refueling when entry can be made to the Primary Containment.

**RELIEF REQUEST BASIS**  
52-02

**System:** Core Spray **P&ID:** M-52

**Valve ID:** 52-1F029 A, B; 52-1F030A, B; 52-1048 A, B; 52-1046 A, B; 52-1045 A, B

**Valve Category:** C

**ASME Class:** 2

**Function:** ECCS pump discharge line stay fill check valves from Condensate Transfer System. (52-1F029 A, B; 52-1F030 A, B) ECCS pump discharge line stay fill check valves from Safeguards Piping Fill System. (52-1048 A, B; 52-1046 A, B; 52-1045 A, B)

**Test Requirement:** Exercise test quarterly.

**Basis for Relief:** Monthly system venting requirements will verify these ECCS injection lines are water filled during normal operation. Complete operability testing of these fill line check valves requires operator entry to a restricted high radiation area of greater than 100mR/hr during normal operation. Testing of each valve is estimated to take at least 20 minutes to complete. Area radiation levels during cold shutdown are reduced to approximately 2.5 mR/hr. Thus, exercise testing of these check valves during cold shutdown reduces man Rem. exposure by a factor of 40 for each valve.

**Alternate Testing:** Exercise test at cold shutdown.





VALVE INSERVICE TESTING PROGRAM PLAN

TABLES AND RELIEF REQUESTS

FOR

LIMEPICK GENERATING STATION

UNIT 1

P&ID NO. M-55

HIGH PRESSURE COOLANT INJECTION SYSTEM



HIGH PRESSURE COOLANT INJECTION SYSTEM

P&ID NO: M-55  
DOCUMENT NO. 80A2972

PAGE: 2 of 12  
Rev 5



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-55-1F001	2	D-3	B		12	GT	MO	C	ET-Q ST-Q			
HV-55-1F002	1	F-6	A		10	GL	MO	O	ET-Q ST-Q LJ-R	55-01	ET-C ST-C	
HV-55-1F003	1	F-6	A		10	GL	MO	O	ET-Q ST-Q LJ-R	55-01	ET-C ST-C	
HV-55-1F004	2	E-4	B		16	GT	MO	O	ET-Q ST-Q			
55-1F005	2	D-5	C		14	CK	SA	--	ET-Q			Exercise during pump test. Forward flow test only.
HV-55-1F006	2	D-6	B		12	GT	MO	C	ET-Q ST-Q			
HV-55-1F007	2	D-5	B		14	GT	MO	O	ET-Q ST-Q	55-02	ET-C ST-C	



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-55-1F008	2	D-5	B		10	GL	MO	C	ET-Q ST-Q			
HV-55-1F010	2	E-3	B	P	16	GT	MA	LO	PV			
HV-55-1F011	2	F-5	B		10	GT	MO	C	ET-Q ST-Q			
HV-55-1F012	2	C-6	A		4	GL	MO	C	ET-Q ST-Q LJ-R			
55-1F019	2	E-3	C		16	CK	SA	--	ET-Q			Exercise during pump test. Forward flow test only.
55-1F021	2	C-4	C	P	12	SK	SA MA	-- LO	ET-Q PV			Forward flow test only. Manual locked open stop check valve.
HV-55-1F028	2	C-3	B		1	GL	AO	O	ET-Q ST-Q FS-Q			

## HIGH PRESSURE COOLANT INJECTION SYSTEM

P&ID NO: M-55  
DOCUMENT NO. 80A2972PAGE: 4 of 12  
Rev 5

5

Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-55-1F029	2	B-3	B		1	GL	AO	O	ET-Q ST-Q FS-Q			
HV-55-1F041	2	E-4	B		16	BF	MO	C	ET-Q ST-Q			
HV-55-1F042	2	B-7	A		16	GT	MO	C	ET-Q ST-Q LJ-R			
55-1F045	2	B-7	C		16	CK	SA	--	ET-Q			Forward flow test only.
55-1F046	2	C-4	C		4	CK	SA	--	ET-Q			Exercise with pump test. Forward flow test only.
HV-55-1F071	2	C-6	A		4	GT	MO	C	ET-Q ST-Q LJ-R			



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
HV-55-1F072	2	C-6	A		12	GT	MO	O	ET-Q ST-Q LJ-R	55-01	ET-C ST-C	
55-1F077	2	B-5	C		2	CK	SA	--	ET-Q	55-05	ET-C	Valve cycling is verified by system check to verify water inventory
55-1F078	2	B-5	C		2	CK	SA	--	ET-Q	55-05	ET-C	Valve cycling is verified by system check to verify water inventory
55-1F080	2	B-8	C		4	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.
HV-55-1F093	2	A-7	A		4	GT	MO	O	ET-Q ST-Q LJ-R			
55-1F094	2	B-8	C		4	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.
HV-55-1F095	2	C-8	A		4	GT	MO	O	ET-Q ST-Q LJ-R			





Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks	
HV-55-1F100	1	F-6	A		1½	GL	MO	C	ET-Q ST-Q LJ-R				
55-1048	2	D-5	C		1½	CK	SA	--	ET-Q	55-05	ET-C	Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation	
55-1049	2	D-5	C		1½	CK	SA	--	ET-Q	55-05	ET-C		Valve cycling is verified by system check to verify water inventory in conjunction with safeguard piping fill pump operation
55-1025	2	A-8	C		4	CK	SA	--	ET-Q				Upstream and downstream test taps used to verify valve operability. Forward flow test only.
55-1026	2	A-8	C		4	CK	SA	--	ET-Q			Upstream and downstream test taps used to verify valve operability. Forward flow test only.	
HV-55-1F105	2	E-4	A		8	GT	MO	C	ET-Q ST-Q LJ-R	55-04	ET-C ST-C		



HIGH PRESSURE COOLANT INJECTION SYSTEM

P&ID NO: M-55  
DOCUMENT NO. 80A2972

PAGE: 7 of 12  
Rev 5



Valve No.	Class	Coor.	Valve Cat.	Pass.	Size (in.)	Valve Type	Actu. Type	Normal Posit.	Test Req.	Relief Req.	Alt. Test Perf.	Remarks
55-1047	2	D-5	B	P	1½	GL	MA	O	PV			
55-1058	2	E-4	C		8	CK	SA	--	ET-Q	55-03	ET-C	
55-1059	2	D-6	C		12	CK	SA	--	ET-Q	55-03	ET-R	
HV-55-120	2	B-6	A		2	GL	MO	O	ET-Q ST-Q LJ-R			
HV-55-121	2	B-6	A		2	GL	MO	O	ET-Q ST-Q LJ-R			







**RELIEF REQUEST BASIS**

55-01

**System:** HPCI **P&ID:** M-55

**Valve ID:** HV-55-1F002; HV-55-1F003; HV-55-1F072

**Valve Category:** A

**ASME Class:** 1 (HV-55-1F002; HV-55-1F003)  
2 (HV-55-1F072)

**Function:** HPCI Steam supply and turbine exhaust valves

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Failure of one of these valves in the closed position would cause total loss of system function which would put the plant in an unsafe condition.

**Alternate Testing:** Exercise and time during cold shutdown.





**RELIEF REQUEST BASIS**

55-02

**System:** HPCI

**P&ID:** M-55

**Valve ID:** HV-55-1F007

**Valve Category:** B

**ASME Class:** 2

**Function:** HPCI Pump discharge line

**Test Requirement** Exercise test quarterly

**Basis for Relief:** Failure of valve in closed position would cause total loss of system function which would put the plant in an unsafe condition.

**Alternate Testing:** Exercise and time during cold shutdown.

**RELIEF REQUEST BASIS**

55-03

**System:** HPCI **P&ID:** M-55

**Valve ID:** 55-1059; 55-1058

**Valve Category:** C

**ASME Class:** 2

**Function:** HPCI Pump Discharge to Core Spray  
HPCI Pump Discharge to Feedwater

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** Check valve 55-1058 is located downstream of motor operated valve HV-55-1F105 which is tested at cold shutdown. Since flow is required through this valve to verify operability, it cannot be tested until HV-55-1F105 is tested. Operability of valve 55-1059 can only be verified by pumping HPCI System water through downstream check valve HV-52-108 into the Core Spray System. Valve HV-52-108 is a pressure isolation valve and is tested at refueling (See Relief Request 52-01).

**Alternate Testing:** Operability of valve 55-1058 will be determined at cold shutdown. Operability of valve 55-1059 will be determined at refueling.



**RELIEF REQUEST BASIS**

55-04

**System:** HPCI **P&ID:** M-55

**Valve ID:** HV-55-1F105

**Valve Category:** B

**ASME Class:** 2

**Function:** HPCI Pump discharge to feedwater

**Test Requirement:** Exercise test quarterly

**Basis for Relief:** HV-55-1F105 valve is upstream from HPCI injection check valve 55-1058 which is the high pressure boundary valve between the feedwater and HPCI systems during plant operation. There is no provision to detect leakage past valve 55-1058. In order to protect the HPCI low pressure pump suction piping from being overpressurized valve HV-55-1F007 would have to be closed before valve HV-55-1F105 could be exercised. Failure of HV-55-1F007 in the closed position would cause total loss of system function.

**Alternate Testing:** Exercise and time during cold shutdown.

**RELIEF REQUEST BASIS**  
55-05**System:** HPCI**P&ID:** M-55**Valve ID:** 55-1F077:55-1F078:55-1048:55-1049**Valve Category:** C**ASME Class:** 2**Function:** ECCS pump discharge line stay fill check valves from Condensate Transfer System (55-1077:55-1078) ECCS pump discharge line stay fill check valves from Safeguard Piping Fill System (55-1048:55-1049)**Test Requirement:** Exercise test quarterly**Basis for Relief:** Monthly system venting requirements will verify these ECCS injection lines are water filled during normal operation. Complete operability testing of these fill line check valves requires operator entry to a restricted high radiation area of greater than 100mR/hr during normal operation. Testing of each valve is estimated to take at least 20 minutes to complete. Area radiation levels during cold shutdown are reduced to approximately 2.5 mR/hr. Thus, exercise testing of these check valves during cold shutdown reduce man Rem. exposure by a factor of 40 for each valve.**Alternate Testing:** Exercise test at cold shutdown.