

MAY 15 1988  
L-86-204

*PDR*

Dr. J. Nelson Grace  
Regional Administrator, Region II  
U. S. Nuclear Regulatory Commission  
101 Marietta Street N.W., Suite 2900  
Atlanta, Georgia 30323


Re: St. Lucie Units 1 and 2  
Docket Nos. 50-335 and 50-389  
IE Bulletin 85-03

Dear Dr. Grace:

We have reviewed IE Bulletin 85-03 (Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings) as it applies to St. Lucie Units 1 and 2. Attached, please find the design basis information and program plans/schedules for St. Lucie Units 1 and 2, as required by the Bulletin.

Should you or your staff have any questions on this information, please contact us.

Very truly yours,

  
C. O. Woody  
Group Vice President  
Nuclear Energy

COW/SAV:de

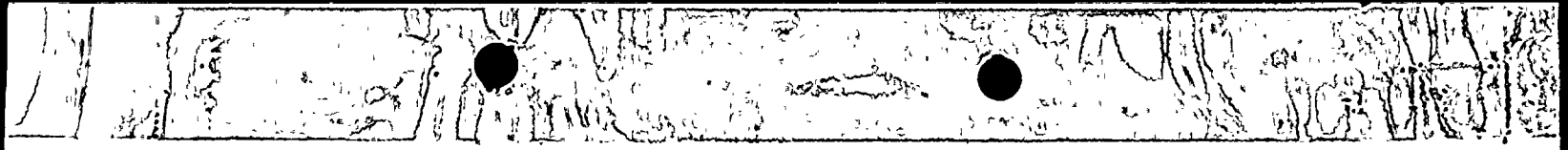
Attachment

cc: Harold F. Reis, Esquire  
USNRC Document Control Desk  
PNS-LI-86-158

8607230401 860515  
PDR ADDCK 05000335  
Q PDR

E:l:l

*extra copy*  
PEOPLE SERVING PEOPLE

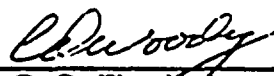


STATE OF FLORIDA )  
                          ) ss.  
COUNTY OF DADE )

C. O. Woody, being first duly sworn, deposes and says:

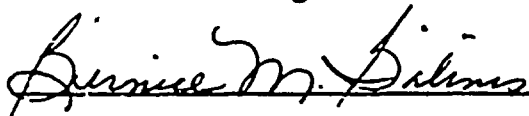
That he is a Group Vice President of Florida Power & Light Company, the licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said Licensee.

  
\_\_\_\_\_  
C. O. Woody

Subscribed and sworn to before me this

14 day of May, 1986.

  
\_\_\_\_\_

NOTARY PUBLIC, in and for the County of  
Dade, State of Florida.

NOTARY PUBLIC STATE OF FLORIDA  
MY COMMISSION EXP. DATE 05-15-89  
BONDED THRU GENERAL INS. CO.

My commission expires: \_\_\_\_\_

**ST. LUCIE PLANNED ACTIONS  
(I & E BULLETIN 85-03)**

- A. The design basis for each motor-operated valve in the Auxiliary Feedwater (AFW) and High Pressure Safety Injection (HPSI) systems was reviewed, documented, and included in this report as Attachment A.
  - B. Actual torque switch settings will be calculated and maintained in a controlled document by October 17, 1986.
  - C. Individual valve torque switch settings will be set to conform to the values in item B, above. The subject valves will be tested, to the extent where practical, at the maximum differential pressure, either using conventional differential pressure stroke testing or current maintenance techniques. In the interim period prior to the implementation of any revised switch settings, the subject MOV's will be evaluated, to the extent practical, to ensure that their operation and switch settings correspond to the most recent vendor supplied information. FPL is currently reviewing and evaluating all developments concerning alternative methods to full differential pressure testing to determine their acceptability. Justification will be provided, as deemed necessary, for those valves which cannot be practically tested at the maximum differential pressure established above. Where torque switch settings are unchanged, credit may be taken for testing done in the past. Testing will be completed by November 14, 1987.
  - D. Applicable Plant maintenance procedures will be reviewed/revised, as necessary, to ensure torque switch settings are set per the values supplied in item B, above, by November 14, 1987. Proper switch settings will be maintained as per controlled document settings supplied in Item B.
- A follow-up report will be submitted by January 14, 1988.

ATTACHMENT A

ST. LUCIE UNIT 1

HIGH PRESSURE SAFETY INJECTION SYSTEM

MOTOR-OPERATED VALVES

AND

AUXILIARY FEEDWATER SYSTEM

MOTOR-OPERATED VALVES

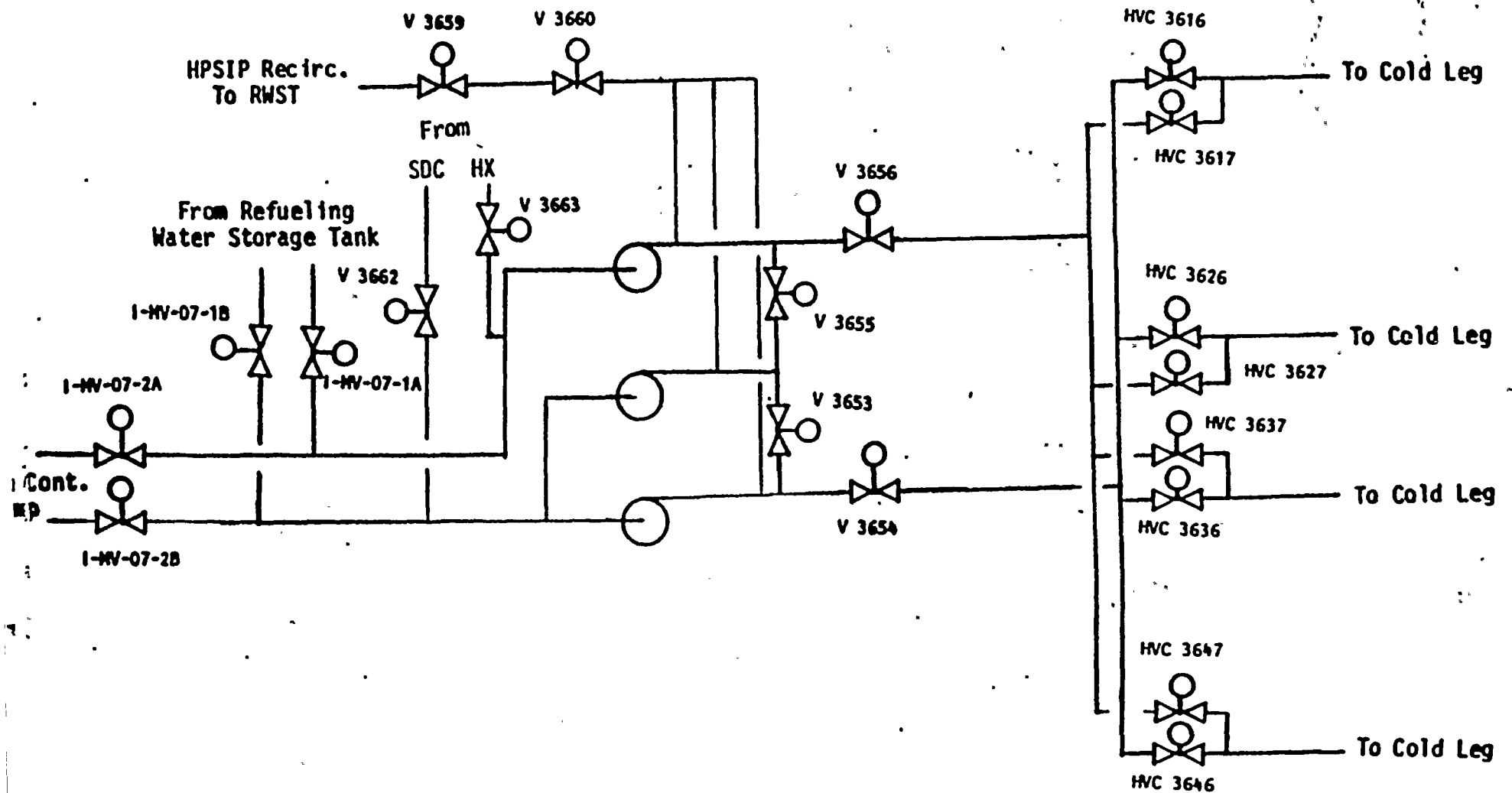
St. Lucie Unit 1 Design Bases for Operation of HPSIS MOVs

<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Manually open from Control Room	V 3653 V 3655	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump discharge X conn.
Manually close from Control Room	V 3653 V 3655	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump discharge X conn.
Manually close from Control Room	V 3654 V 3656	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump discharge header isolation
Manually open from Control Room	V 3654 V 3656	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump discharge header isolation
Auto close on RAS	V 3660 V 3659	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump recirc. to RWT
Manually open from Control Room	V 3660 V 3659	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump recirc to RWT
Manually open from Control Room	V 3662 V 3663	High: Max. cont. spray header press.	Low: atmos. press.	From SDC HX
Manually close from Control Room	V3662 V3663	High: Max cont. spray header press.	Low: atmos. press.	From: SDCHX
Auto close on RAS	I-MV-07-1A I-MV-07-1B	High: head due to max. RWT level	Low: atmos. press.	RWT suction valves
Manually open from Control Room	I-MV-07-1A I-MV-07-1B	High: head due to max. RWT level	Low: atmos. press.	RWT suction valves
Auto open on RAS	I-MV-07-2A I-MV-07-2B	High: head due to max cont. sump level	Low: atmos. press.	Cont. sump suction valve
Manually close from Control Room	I-MV-07-2A I-MV-07-2B	High: head due to max. cont. sump level	Low: atmos. press.	Cont. sump suction valve

St. Lucie Unit 1 Design Bases for Operation of HPSIS MOVs

<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Auto open on SIAS	HVC 3616 HVC 3617 HVC 3626 HVC 3627 HVC 3636 HVC 3637 HVC 3646 HVC 3647	High: HPSI pump shutoff head	Low: atmos. press.	Cold leg injection valves
Manually close from Control Room	HVC 3616 HVC 3617 HVC 3626 HVC 3627 HVC 3636 HVC 3637 HCV 3646 HVC 3647	High: HPSI pump shutoff head	Low: atmos. press.	Cold leg injection valves

# St. Lucie Unit 1 HPSIS Schematic





ST. LUCIE UNIT 1  
 HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
-3653 Isolation Rate -35036-6* "00#	Limiterque SMB-00-10 1800 rpm	HPSIP Discharge X-Connect	1285 psi/ 1285 psi			
-3655 Isolation Rate -35036-6* "00#	Limiterque SMB-00-10 1800 rpm	HPSIP Discharge X-Connect	1285 psi/ 1285 psi			
-3654 Isolation Rate -35036-5* "00#	Limiterque SMB-00-25 1800 rpm	HPSIP Discharge Header Isolation	1285 psi/ 1285 psi			
-3656 Isolation Rate -35036-5* 500#	Limiterque SMB-0-40 1800 rpm	HPSIP Discharge Header Isolation	1285 psi/ 1285 psi			

## ST. LUCIE UNIT 1

## HIGH PRESSURE SAFETY ACTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Re- sponse to Bulletin Open/Close</u>
<u>Component ID, Manufacturer, Type, Model, Size, Rating</u>	<u>Manufacturer, Model, Motor RPM, Output Speed (RPM)</u>					
V-3660. Valve Gate P-35036-10* 3" 900#	Limiterque SMB-00-7-1/2 3600 rpm	HPSIP Recirculation to RWT	1285 psi/ 1285 psi			
V-3659 Valve Gate P-35036-10* 3" 900#	Limiterque SMB-00-7-1/2 3600 rpm	HPSIP Recirculation to RWT	1285 psi/ 1285 psi			
V-3662 Valve Gate P-35036-8* 4" 300#	Limiterque SMB-000-5 1800 rpm	Supply from SDC HX	246 psi/ 246 psi			
V-3663 Valve Gate P-35036-8* 4" 300#	Limiterque SMB-000-5 1800 rpm	Supply from SDC HX	246 psi/ 246 psi			

ST. LUCIE I 1  
HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
AVC-3616 Globe -35036-4* 500#	Limatorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
AVC-3626 Globe -35036-4* 500#	Limatorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
AVC-3636 Globe -35036-4* 500#	Limatorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
AVC-3646 Globe -35036-4* 500#	Limatorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			

## HIGH PRESSURE SAFETY INJECTION SYSTEM

Valve	Valve Operator	Valve Function	Data Summary		Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Re- sponse to Bulletin Open/Close
			Design Basis $\Delta P$ Open/Close	Test $\Delta P$ Open/Close		
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
VC-3617 Plan Globe 35036-4*	Limitorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
500#						
VC-3627 Plan Globe 35036-4*	Limitorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
500#						
C-3637 Plan Globe 35036-4*	Limitorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
00#						
C-3647 Plan Globe 35036-4*	Limitorque SMB-00-10 3600 rpm	HPSI Cold Leg Isolation	1282 psi/ 1282 psi			
00#						

## HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
MV-07-1A Henry Pratt Butterfly K II 0#	Limitorque SMB-00 1800 rpm	RWT Suction	16 psi/ 16 psi			
MV-07-1B Henry Pratt Butterfly K II 0#	Limitorque SMB-00 1800 rpm	RWT Suction	16 psi/ 16 psi			
MV-07-2A Henry Pratt Butterfly K II 0#	Limitorque SMB-00 1800 rpm	Containment Sump Suction	44 psi/ 44 psi			
MV-07-2B Henry Pratt Butterfly K II 0#	Limitorque SMB-00 1800 rpm	Containment Sump Suction	44 psi/ 44 psi			

# St. Lucie Unit 1 Design Bases for Operation of AFWS MOVs

## Following Feedwater Line Break in B System (A System)

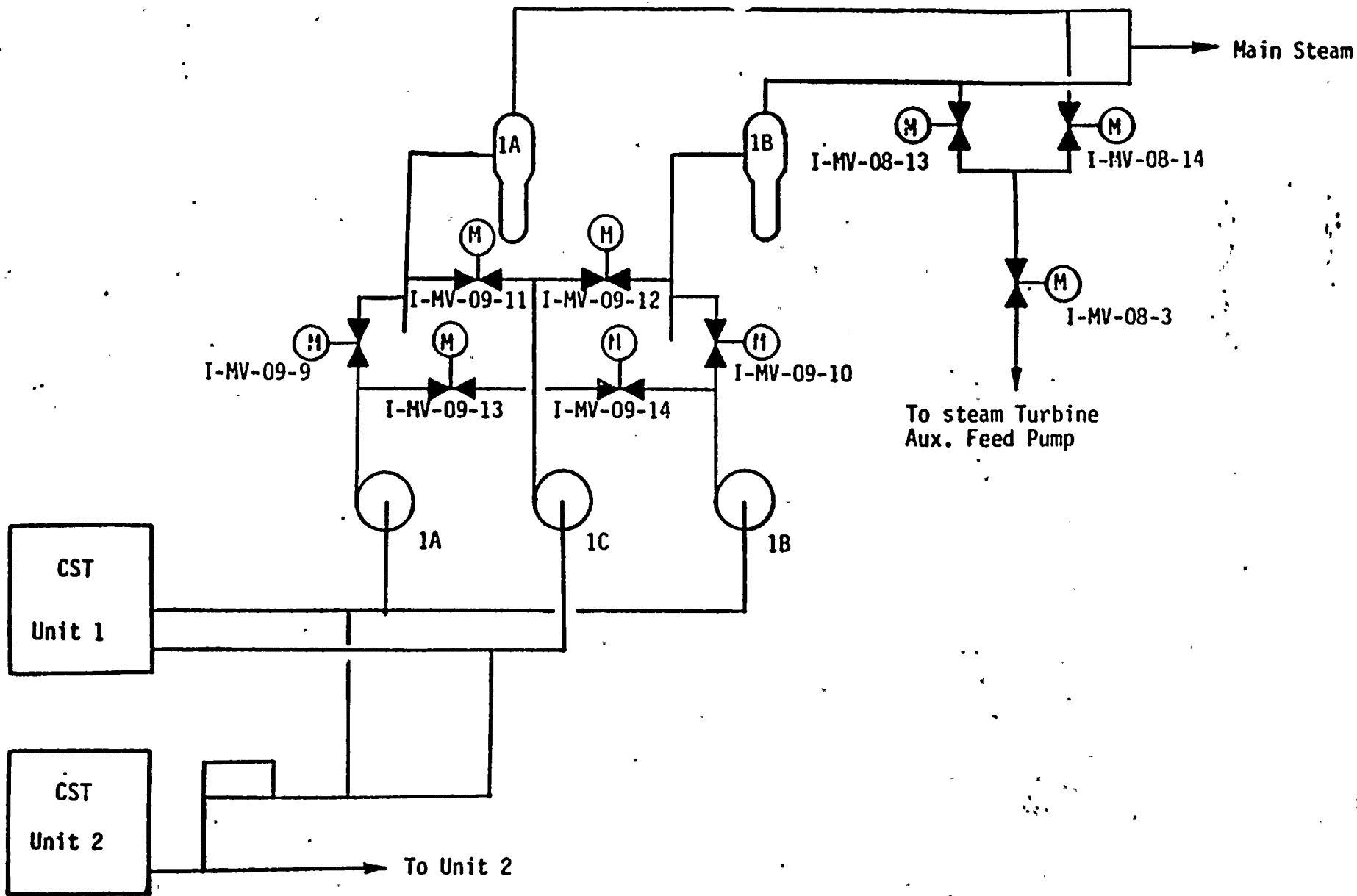
<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Auto open on AFAS	1-MV-09-9 1-MV-09-10 1-MV-09-11 1-MV-09-12	High: AFWP shutoff head	Low: atmos. pressure	AFW flow control control valves
Manually open from control room	1-MV-08-3	High: Main steam press.	Low: Atmos. pressure	Steam turbine driven pump steam inlet valve
Manually close from control room	1-MV-08-3	High: Main steam press.	Low: Atmos. pressure	
Manual close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-10 1-MV-09-12 (1-MV-09-9) (1-MV-09-11)	High: AFWP shutoff head	Low: Atmos. pressure	Following loss of offsite power
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-10 1-MV-09-12 (1-MV-09-9) (1-MV-09-11)	High: AFWP shutoff head	Low: Atmos. pressure	Following inadvertent closure of AFWP suction line valve.
Manually open or close to establish AFW flow to SG-1A (SG-1B)	1-MV-09-13* 1-MV-09-14*	High: AFWP shutoff head	Low: Atmos. pressure	Following inadvertent closure of AFWP suction line valve or following failure of steam driven pump steam inlet valve to open

\*ΔP may occur across each valve in either direction.

St. Lucie Unit 1 Design Bases for Operation of AFWS MOVs

Following Feedwater Line Break in B System (A System)

<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-10 (1-MV-09-9)	High: AFW shutoff head	Low: Atmos. pressure	Following failure of steam driven pump steam inlet valve to open
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-12 (1-MV-09-11)	High: AFW shutoff head	Low: Atmos. pressure	Following failure of motor driven pump to start
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-10 (1-MV-09-9)	High: AFW shutoff head	Low: Atmos. pressure	Following failure of 1-MV-09-11 or 1-MV-09-12 to open.
Manually open to establish AFW flow to SG-1A (SG-1B)	1-MV-09-13* 1-MV-09-14*	High: AFW shutoff head	Low: Atmos. pressure	Following failure of 1-MV-09-11 or 1-MV-09-12 to open
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-12 (1-MV-09-11)	High: AFW shutoff head	Low: Atmos. pressure	Following failure of one MO flow control to open
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-12 (1-MV-09-11)	High: AFW shutoff head	Low: Atmos. pressure	Following failure of Diesel Generator A (B) to start
Manually open to establish AFW flow to SG-1A (SG-1B)	1-MV-09-11 (1-MV-09-12)	High: AFW shutoff head	Low: Atmos. pressure	Following failure of Diesel Generator A (B) to start
Manually close to isolate AFW flow to SG-1B (SG-1A)	1-MV-09-12 (1-MV-09-11)	High: AFW shutoff head	Low: Atmos. pressure	Following loss of 125V B (A) bus
Close manually from control room	1-MV-08-13 1-MV-08-14	High: Main steam press.	Low: Atmos. pressure	Following AFW 2C trip
Auto open on AFAS	1-MV-08-13 1-MV-08-14	High: Main steam press.	Low: Atmos. press.	



ST. LUCIE UNIT 1 AUXILIARY FEEDWATER SYSTEM SCHEMATIC



ST. LUCIE UN'  
AUXILIARY FEEDWATER SYSTEM

Data Summary

<u>Component ID, Manufacturer, Model, Rating</u>	<u>Valve Operator Function</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Re- sponse to Bulletin Open/Close</u>
MV-09-9 M obe -28-2M0  0#	Limiterque SMB-000 1700 rpm	AFWP 1A Discharge to SG 1A	1451 psi/ 1451 psi			
MV-09-10 M obe -28-2M0  0#	Limiterque SMB-000 1700 rpm	AFWP 1B Discharge to SG 1A	1451 psi/ 1451 psi			
MV-09-11 M obe -28-2M0  0#	Limiterque SMB-000 1900 rpm	AFWP 1C Discharge to SG 1A	1375 psi/ 1375 psi			
MV-09-12 M obe -28-2M0  0#	Limiterque SMB-000 1900 rpm	AFWP 1C Discharge to SG 1B	1375 psi/ 1375 psi			

ST. LUCIE UN  
AUXILIARY FEEDWATER SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
MV-09-13* M obe  1/2" 0#	Limitorque SMB-00 1700 rpm	AFWP 1A Discharge to SG 1B	1460 psi/ 1460 psi			
MV-09-14* M obe  1/2" 0#	Limitorque SMB-00 1700 rpm	AFWP 1B Discharge to SG 1A	1460 psi/ 1460 psi			
MV-08-13 ackwell valve Stop 24 MT	Limitorque SMB-00 1900 rpm	AFWP 1C Steam Isolation	1085 psi/ 1085 psi			
MV-08-14 ackwell valve Stop 24 MT	Limitorque SMB-00 1900 rpm	AFWP 1C Steam Isolation	1085 psi/ 1085 psi			

ST. LUCIE 1" ~ 1  
 AUXILIARY FEEDWA. SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Re- sponse to Bulletin Open/Close</u>
<u>Component ID, Manufacturer, Type, Model, Size, Rating</u>	<u>Manufacturer, Model, Motor RPM, Output Speed (RPM)</u>					
1-MV-08-3 Schutte & Koerting Trip & Throttle 1/2-XE-3 1"	Limiterque SMB-000 1900 rpm	AFWP 1C Trip + Throttle	1085 psi/ 1085 psi			

ST. LUCIE UNIT 2

HIGH PRESSURE SAFETY INJECTION SYSTEM

MOTOR-OPERATED VALVES

AND

AUXILIARY FEEDWATER SYSTEM

MOTOR-OPERATED VALVES

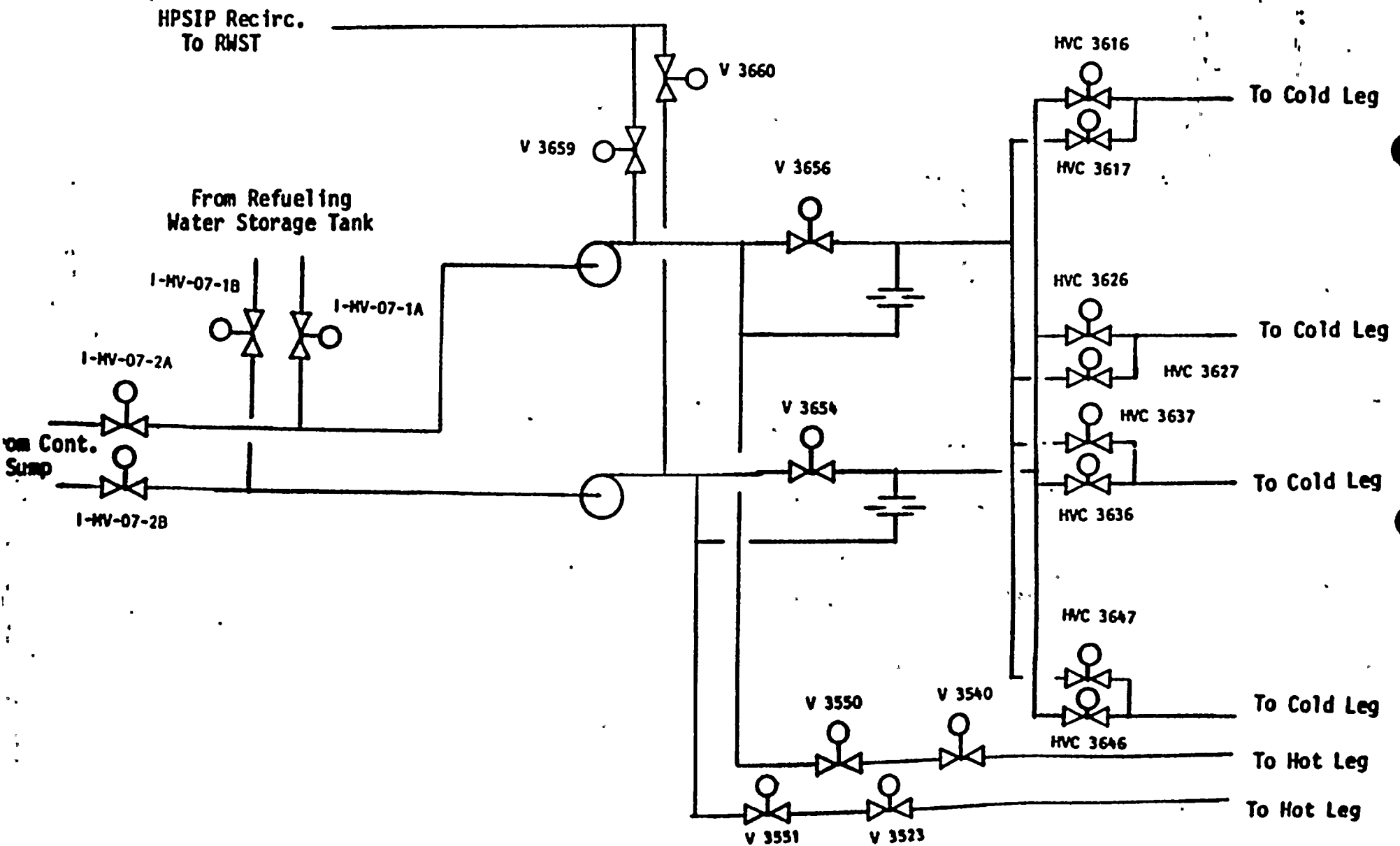
St. Lucie Unit 2 Design Basis for Operation of HPSIS MOVs

<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Manually close from Control Room	V 3654 V 3656	High: HPSI pump shutoff head	Low: atmos. press.	Hot leg injection orifice bypass
Manually open from Control Room	V 3654 V 3656	High: HPSI pump shutoff head	Low: atmos. press.	Hot leg injection orifice bypass
Auto close on RAS	V 3659 V 3660	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump recirc. to RWT
Manually open from Control Room	V 3659 V 3660	High: HPSI pump shutoff head	Low: atmos. press.	HPSI pump recirc. to RWT
Manually open from Control Room	V 3550 V 3540 V 3551 V 3523	High: HPSI pump shutoff head	Low: atmos. press.	Hot leg injection valves
Manually close from Control Room	V 3550 V 3540 V 3551 V 3523	High: HPSI pump shutoff head	Low: atmos. press.	Hot leg injection valves
Auto close on RAS	1-MV-07-1A 1-MV-07-1B	High: head due to max. RWT level	Low: atmos. press.	RWT suction valves
Manually open from Control Room	1-MV-07-1A 1-MV-07-1B	High: head due to max. RWT level	Low: atmos. press.	RWT suction valves
Auto open on RAS	1-MV-07-2A 1-MV-07-2B	High: head due to max cont. sump level	Low: atmos. press.	Cont. sump suction valve
Manually close from Control Room	1-MV-07-2A 1-MV-07-2B	High: head due to max. cont. sump level	Low: atmos. press.	Cont. sump suction valve

St. Lucie Unit 2 Design Bases for Operation of HPSIS MOVs

<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Auto open on SIAS	HVC 3616	High: HPSI pump shutoff head	Low: Atmos. press.	Cold leg injection valves
	HVC 3617			
	HVC 3626			
	HVC 3627			
	HVC 3636			
	HVC 3637			
	HVC 3646			
Manually close from Control Room	HVC 3616	High: HPSI pump shutoff head	Low: atmos. press.	Cold leg injection valves
	HVC 3617			
	HVC 3626			
	HVC 3627			
	HVC 3636			
	HVC 3637			
	HVC 3646			
HVC 3647				

### St. Lucie Unit 2 HPSIS Schematic



## HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
V-3654 Westinghouse Gate 06000GM87S- 5H07D00S74 6" 900#	Limitorque SB-0-15 3600 rpm	Hot Leg Injection Orifice Bypass	1285 psi/ 1285 psi			
V-3656 Westinghouse Gate 06000GM88S- 5H07D00S74 6" 1500#	Limitorque SB-0-15 3600 rpm	Hot Leg Injection Orifice Bypass	1285 psi/ 1285 psi			
V-3659 Westinghouse Gate 03000GM87F- 817D00S74 6" 900#	Limitorque SB-0015 3600 rpm	HPSIP Recirculation to RWT	1285 psi/ 1285 psi			
V-3660 Westinghouse Gate 03000GM87F- 817D00S74 6" 900#	Limitorque SB-00-15 3600 rpm	HPSIP Recirculation to RWT	1285 psi/ 1285 psi			



## HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis <math>\Delta P</math> Open/Close</u>	<u>Test <math>\Delta P</math> Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
<u>Component ID, Manufacturer, Type, Model, Size, Rating</u>	<u>Manufacturer, Model, Motor RPM, Output Speed (RPM)</u>					
1-3550 Target Rock Globe 75C023 3" 500#	Limitorque SMB-0-25 1800 rpm	HPSI Hot Leg Injection	1273 psi/ 1273 psi			
1-3540 Target Rock Globe 75C003 3" 500#	Limitorque SMB-00-5 1800 rpm	HPSI Hot Leg Injection	1273 psi/ 1273 psi			
1-3551 Target Rock Globe 75C023 3" 500#	Limitorque SMB-0-25 1800 rpm	HPSI Hot Leg Injection	1273 psi/ 1273 psi			
1-3523 Target Rock Globe 75C003 3" 500#	Limitorque SMB-00-5 1800 rpm	HPSI Hot Leg Injection	1273 psi/ 1273 psi			

## HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
I-MV-07-1A Henry Pratt Butterfly NMK II 24" 150#	Limitorque SMB-000-5 1800 rpm	RWT Suction	16 psi/ 16 psi			
I-MV-07-1B Henry Pratt Butterfly NMK II 24" 150#	Limitorque SMB-000-5 1800 rpm	RWT Suction	16 psi/ 16 psi			
I-MV-07-2A Henry Pratt Butterfly NMK II 24" 150#	Limitorque SMB-00-10 1800 rpm	Containment Sump Suction	49 psi/ 49 psi			
I-MV-07-2B Henry Pratt Butterfly NMK II 24" 150#	Limitorque SMB-00-10 1800 rpm	Containment Sump Suction	49 psi/ 49 psi			

## HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Re- sponse to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
HCV-3616 Target Rock Globe 75-C-002 2" 1500#	Limitorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1284 psi/ 1284 psi			
HCV-3626 Target Rock Globe 75-C-002 2" 1500#	Limitorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1284 psi/ 1284 psi			
HCV-3617 Target Rock Globe 75-C-002 2" 1500#	Limitorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1284 psi/ 1284 psi			
HCV-3627 Target Rock Globe 75-C-002 2" 1500#	Limitorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1284 psi/ 1284 psi			

## HIGH PRESSURE SAFETY INJECTION SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
HCV-3636 Target Rock Globe 75-C-002 2" 1500#	Limatorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1283 psi/ 1283 psi			
HCV-3637 Target Rock Globe 75-C-002 2" 1500#	Limatorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1284 psi/ 1284 psi			
HCV-3646 Target Rock Globe 75-C-002 2" 1500#	Limatorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1283 psi/ 1283 psi			
HCV-3647 Target Rock Globe 75-C-002 2" 1500#	Limatorque SMB-00-10 1800 rpm	HPSI Cold Leg Injection	1284 psi/ 1284 psi			

St. Lucie Unit 2 Design Bases for Operation of AFWS MOVs

Following Feedwater or Main Steam Line Break in  
SC-2B (SC-2A) and Loss of Offsite Power

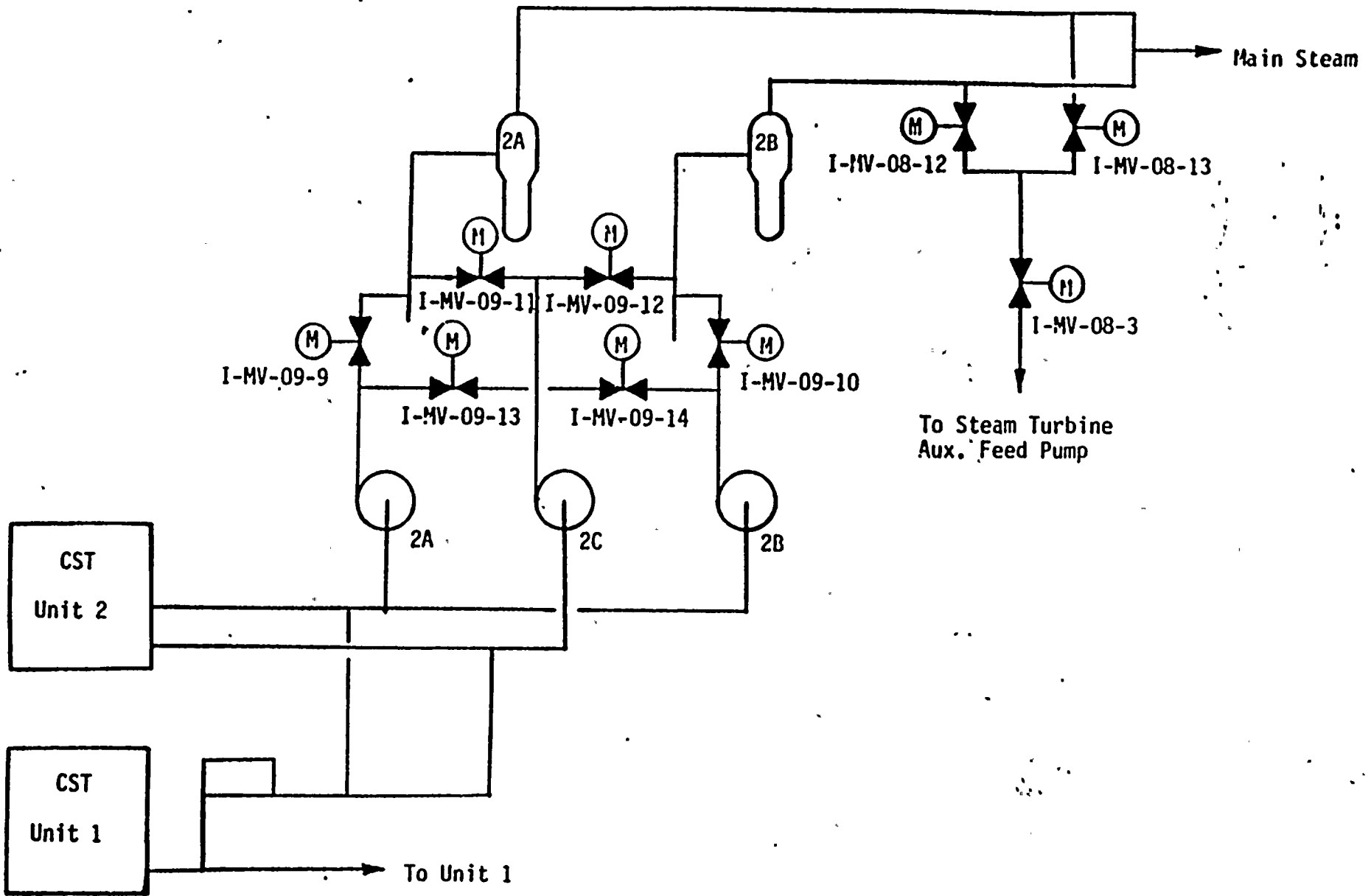
<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
Auto open on AFAS	1-MV-09-9 1-MV-09-10 1-MV-09-11 1-MV-09-12	High: AFWP Shut-off head	Low: atmos. press.	AFW flow control valves
Manually close from Control Room	1-MV-08-3	High: main steam press.	Low: atmos. press.	Steam turbine driven pump steam inlet valve
Manually open from Control Room	1-MV-08-3	High: main steam press.	Low: atmos. press.	
Manually open or close to direct AFW flow to available SG	1-MV-09-13* 1-MV-09-14*	High: AFWP shutoff head	Low: atmos. press.	Steam supply valve to turbine driven pump.
Manually close from Control Room to isolate AFW flow to SC-2B(SC-1A)	1-MV-09-10 1-MV-09-12 (1-MV-09-9) (1-MV-09-11)	High: AFWP shutoff head	Low: atmos. press.	Following loss of Offsite Power or Following failure of 1-MV-08-3 to close or Following failure of 1-MV-08-13 (1-MV-08-12) to open or Following failure of Motor Driven Pump 2A (2B) to start or Following failure of 1-MV-09-9 (1-MV-09-10) or 1-SE-09-2 (1-SE-09-3) to open or (Cont'd.)

\* ΔP may occur across each valve in either direction.

St. Lucie Unit 2 Design Bases for Operation of AFWs MOVs

Following Feedwater or Main Steam Line Break in  
SG-2B (SG-2A) and Loss of Offsite Power

<u>Valve Function</u>	<u>Valve Tag No.</u>	<u>Postulated Upstream Condition</u>	<u>Postulated Downstream Condition</u>	<u>Notes</u>
				Following failure of 1-MV-09-11 (1-MV-09-12) or 1-SE-09-4 (1-SE-09-5) to open. or Following failure of redundant valve 1-SE-09-3 (1-SE-09-2) or 1-SE-09-5 (1-SE-09-4) to close.
Manually close from Control Room to isolate AFW flow to SG-2B(SG-2A)	1-MV-09-12 (1-MV-09-11)	High: AFW shutoff head	Low: atmos. press.	Following failure of Diesel Generator B (A) to start. Loss of AFW 2B (AFW 2A)
Manually close from Control Room to isolate AFW flow to SG-2B (SG-2A)	1-MV-09-10 1-MV-09-12 (1-MV-09-9) (1-MV-09-11)	High: AFW shutoff head	Low: atmos. press.	Following failure of Diesel Generator A (B) to start. Loss of AFW 2B (AFW 2A)
Manually close from Control Room to isolate AFW flow to SG-2B (SG-2A)	1-MV-09-10 (1-MV-09-9)	High: AFW shutoff head	Low: atmos. press.	Following failure of 125v dc B bus (A bus). Loss of AFW 2B (AFW 2A)
Manually close from Control Room to isolate AFW flow to SG-2B (SG-2A)	1-MV-09-10 (1-MV-09-9)	High: AFW shutoff head	Low: atmos. press.	Following failure of 125v dc A bus (B bus). Loss of AFW 2B (AFW 2A)
Close manually from control room	1-MV-08-12 1-MV-08-13	High: main steam press.	Low: atmos. press.	Following AFW 2C trip.
Auto open on AFAS	1-MV-08-12 1-MV-08-13	High: main steam press.	Low: atmos. press.	



ST. LUCIE UNIT 2 AUXILIARY FEEDWATER SYSTEM SCHEMATIC

## AUXILIARY FEEDWATER SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis ΔP Open/Close</u>	<u>Test ΔP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Re- sponse to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
I-MV-09-9 WKM Globe 72-28-2M0 4" 600#	Limiterque SMB-000-5 1700 rpm	AFWP 2A Discharge to SG 2A	1375 psi/ 1375 psi			
I-MV-09-10 WKM Globe 70-28-2M0 4" 600#	Limiterque SMB-000-5 1700 rpm	AFWP 2B Discharge to SG 2A	1375 psi/ 1375 psi			
I-MV-09-11 WKM Globe 70-28-2M0 4" 600#	Limiterque SMB-000-5 1900 rpm	AFWP 2C Discharge to SG 2A	1332 psi/ 1332 psi			
I-MV-09-12 WKM Globe 70-28-2M0 4" 600#	Limiterque SMB-000-5 1900 rpm	AFWP 2C to Discharge to SG 2B	1332 psi/ 1332 psi			



ST. LUCIE ; 2  
 AUXILIARY FEEDWATER SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
I-MV-09-13* Pacific Gate 650-7-WE-(80)-E-X 2-1/2" 600#	Limiterque SMC-4 1700 rpm	AFWP 2A Discharge to SG 2B	1385 psi/ 1385 psi			
I-MV-09-14* Pacific Gate 650-7-WE-(80)-E-X 2-1/2" 600#	Limiterque SMC-4 1700 rpm	AFWP 2B Discharge to SG 2A	1385 psi/ 1385 psi			
I-MV-08-12 Pacific Gate 650-7-WE(80)-E 4" 600#	Limiterque SMB-000-5 1900 rpm	AFWP 2C Steam Isolation	1085 psi/ 1085 psi			
I-MV-08-13 Pacific Gate 650-7-WE-(80)-E 4" 600#	Limiterque SMB-000-5 1900 rpm	AFWP 2C Steam Isolation	1085 psi/ 1085 psi			

## AUXILIARY FEEDWATER SYSTEM

Data Summary

<u>Valve</u>	<u>Valve Operator</u>	<u>Valve Function</u>	<u>Design Basis AP Open/Close</u>	<u>Test AP Open/Close</u>	<u>Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close</u>	<u>Final Switch Settings in Response to Bulletin Open/Close</u>
Component ID, Manufacturer, Type, Model, Size, Rating	Manufacturer, Model, Motor RPM, Output Speed (RPM)					
I-MV-08-3 Terry Turbine Trip and Throttle NP-1355* 4" 900#	Limatorque SMB-000 1900 rpm	AFWP 2C Trip 8 Throttle	1085 psi/ 1085 psi			