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ENCLOSURE 3

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

ST. LUCIE PLANT ADMINISTRATIVE PROCEURE

ADM-29.01 REVISION 4



ST. LUCIE PLANT ADMINISTRATIVE PROCEDURE

Procedure No. **ADM-29.01**

Current Rev. No.

4

SAFETY RELATED

Effective Date: 02/24/00

Title:

INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES

Responsible Department: **OPERATIONS SUPPORT ENGINEERING**

Revision Summary

Revision 4 - Revised Section 6.25 to delete verbiage for phase in of updated program and add added reference to extension of Unit 1's first 10-year interval, revised Tables 1 and 2, added requirement to test valves V2338 and V2340 for Unit 1 and 2, and V2440, V3656, V3519, and V3547 for Unit 2, deleted relief request VR-20 and VR-22, deleted requirement to test common charging header relief valves V2311, added remote position verification test requirement for valves V2507, added quarterly closed requirement for Unit 1 HPSI recirc, deleted refueling justification RFJ-21 and added new relief request VR-08, added check valves recently installed, removed NaOH eductor check valves V07269 and V07270, added Unit 2 manual LPSI mini recir isol valves V3205 and V3676 to be cycled quarterly, and made other changes to relief requests and requirements throughout the procedure. (Jon Hallem, 02/15/00)

Revision 3 - Corrected testing interval references, deleted references to Pump Relief Request, corrected Hydrazine pump references, deleted references to vibration testing, added close stroke and fail safe testing, added new pump relief request, added new refuel justification, and added new cold shutdown justifications. (R. L. Womack, 08/17/99)

Revision 2 - Ensured that V6741 is in the closed position. (Gene Boyd, 05/27/99)

Revision	FRG Review Date	Approved By	Approval Date	SOPS
0	12/08, 12/11/97 <u>& 02/06/98</u>	J. Scarola Plant General Manager	02/06/98	DATE DOCT_ <u>PROCEDURE</u> DOCN_ADM-29.01
Revision	FRG Review Date	Approved By	Approval Date	SYS COMP_COMPLETED
4	02/15/00	R. G. West Plant General Manager	02/15/00	ITM4
		N/A Designated Approver	·	

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			ST. LUCIE PLANT					
1.0	PU	RPOSE						
	1.1 This document is the IST Program for St. Lucie Plant, Units 1 and 2, based on the requirements of the ASME Boiler and Pressure Vessel Code, Section XI and ASME/ANSI OM-Code, "Operation and Maintenance of Nuclear Power Plants (the Code)."							
2.0	REF	EREN	CES					
			NOTE					
	Or	ne or m	ore of the following symbols may be used in this procedu	re:				
	§	Condit revised	tes a Regulatory commitment made by Technical Specific ion of License, Audit, LER, Bulletin, etc., and shall NOT t d without Facility Review Group review and Plant Genera ger approval.	be 🛛				
	Indicates a management directive, vendor recommendation, plant practice or other non-regulatory commitment that should NOT be revised without consultation with the plant staff.							
	Ψ	Indicat	es a step that requires a sign-off on a data sheet.					
	2.1	Title 1	10, Code of Federal Regulations, Part 50					
	2.2	Updat	ted Final Safety Analysis Report (UFSAR), St. Lucie Units	s 1 and 2				
	2.3	St. Lu	icie Units 1 and 2 Plant Technical Specifications					
	2.4		E Boiler and Pressure Vessel Code, Section XI, Edition					
	2.5		Generic Letter 89-04, Guidance on Developing otable Inservice Testing Programs					
	2.6	Minute	es of the Public Meetings on Generic Letter 89-04					
	2.7							
	2.8	NURE	EG-1482, Guidelines for Inservice Testing at Nuclear Pow	er Plants				

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.0					
				987 w/88a Addenda, Operation and Power Plants	
				-98-243 dated September 21, 1998, IS dditional Information.	ST
2				-98-264 dated October, 1998, IST Pro	gram
	Reque	est For A	dditional l	nformation.	
1	2.12 CR 99	2-0331			
1		/ 000 /			
2	2.13 St. Lu	cie Flow	Diagrams	(P&IDs)	
•		2.0 1 10 11	2.29.4.10	(
				UNIT 1	
	Drav Numbe		Rev	Title	
	8770-G-0	78/110A	22	Reactor Coolant System	
	8770-G-0	78/110B	22	Reactor Coolant System	
	8770-G-0	78/120A	14	Chemical and Volume Control	
	8770-G-0	78/120B	13	Chemical and Volume Control	
	8770-G-0	78/121A	26	Chemical and Volume Control	
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	8770-G-0	78/130A	21	Safety Injection System	
	8770-G-0	78/130B	19	Safety Injection System	
	8770-G-0	78/131A	19	Safety Injection System	
	8770-G-0	78/131B	16	Safety Injection System	
	8770-G-0	78/150	9	Sampling System	
	8770-G-0	78/160A	13	Waste Management System	
	8770-G-07	78/163A	27	Waste Management System	1
	8770-G-07	78/163B	27	Waste Management System	1
	8770-G-07	79/1	41	Main Steam System	-1
	8770-G-07	79/7	3	Main Steam System	
	8770-G-08	30/3	41	Feedwater and Condensate Systems	1
	8770-G-08		31	Feedwater and Condensate Systems	
	8770-G-08		14	Circulating and Intake Cooling Water System	

Component Cooling System

Component Cooling System

8770-G-083/1A

8770-G-083/1B

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			Ū	· · · · · · · · · · · · · · · · · · ·	
				UNIT 1 (continued)	
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	8770-G-0	84/1C	38	Domestic & Make-up Water Systems	
	8770-G-0	85/1A	33	Service Air System	
	8770-G-0	85/2A	33	Instrument Air System	
	8770-G-0	85/3	17	Instrument Air System	
	8770-G-0	86/1	34	Miscellaneous Systems	
	8770-G-0	88/1	38	Containment Spray and Refueling Water Systems	
	8770-G-0	88/2	40	Containment Spray and Refueling Water Systems	
	8770-G-0	91/1	1	Miscellaneous Systems	
	8770-G-0	92/1	24	Miscellaneous Sampling Systems	
	8770-G-0	93	36	Miscellaneous Systems	
	8770-G-096/1A		13	Emergency Diesel Generator System - Diesel Engine 1A1	
	8770-G-0	96/1B	12	Emergency Diesel Generator System - Diesel Engine 1A2	
	8770-G-0	96/1C	13	Emergency Diesel Generator System - Air Start Pkg. 1A	
	8770-G-0	96/2A	11	Emergency Diesel Generator System - Diesel Engine 1B1	

Emergency Diesel Generator System -Diesel Engine 1B2

Emergency Diesel Generator System -

HVAC - Control Diagrams (Sheet 1)

HVAC - Control Diagrams (Sheet 2)

Air Start Pkg. 1B

8770-G-096/2B

8770-G-096/2C

8770-G-878

8770-G-879

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	Drawi Number/	-	Rev	UNIT 2 Title		
	0000 0 070					
2998-G-078/108 3 Reactor Coolant System				Reactor Coolant System		
	2998-G-078 2998-G-078		8 3			
-		3/108				
	2998-G-078	3/108 3/109	3	Reactor Coolant System		

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2998-G-078/107	8	Reactor Coolant System
2998-G-078/108	3	Reactor Coolant System
2998-G-078/109	10	Reactor Coolant System
2998-G-078/120	13	Chemical and Volume Control
2998-G-078/121A	21	Chemical and Volume Control
2998-G-078/121B	20	Chemical and Volume Control
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2998-G-078/130A	16	Safety Injection System
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2998-G-080/2A	30	Feedwater and Condensate Systems
2998-G-080/2B	31	Feedwater and Condensate Systems
2998-G-082/2	43	Circulating and Intake Cooling Water System
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2998-G-085/2A	32	Instrument Air System
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	2998-G-0	88/2	28	Containment Spray and Refueling Water Systems			
	2998-G-0	91/1	21	Miscellaneous Systems			
	2998-G-0	92/1	18	Miscellaneous Sampling Systems			
	2998-G-0	96/1A	11	Emergency Diesel Generator System - Diesel Engine 2A1			
	2998-G-0	96/1B	11	Emergency Diesel Generator System - Diesel Engine 2A2			
	2998-G-0	96/1C	11	Emergency Diesel Generator System - Air Start Pkg. 2A			
	2998-G-0	96/2A	10	Emergency Diesel Generator System - Diesel Engine 2B1			
	2998-G-0	96/2B	10	Emergency Diesel Generator System - Diesel Engine 2B2			
	2998-G-096/2C		8	Emergency Diesel Generator System - Air Start Pkg. 2B			
	2998-G-8	78	23	HVAC - Control Diagrams (Sheet 1)			
	2998-G-8	79/2	17	HVAC - Control Diagrams (Sheet 2)			
	2998-G-8	79/3	23	HVAC - Control Diagrams (Sheet 3)			
	2298-101	4	2	Air Control and Hydraulic Spd Control			

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3.0			SIBILITIES			
	3.1	The	Systems Performance Group (SPG) is responsible for	the following:		
		1.	Ensuring plant changes that affect the scope and test pumps and valves within the jurisdiction of the Code a to incorporate any required changes into the Program applicable pumps and valves. Plant changes include limited to, the following:	are reviewed		
			A. Revisions to Operating Procedures (normal, abn emergency)	ormal and		
			B. Revisions to plant operating parameters that are determining acceptance criteria; and	used for		
			C. Plant modifications			
		2.	Obtaining approval for relief from Code requirements.			
		3.	Reviewing this procedure when required as a result o updating in accordance with 10 CFR 50.55a or other directives.			
		4.	Filing the Inservice Testing Program Plan and change appropriate regulatory authorities.	es with the		
4.0	DEF	INITIC	ONS			
	4.1	All definitions pertinent to the Inservice Testing Program are included in the appropriate appendices.				
5.0	REC	ORDS REQUIRED				
	5.1	This procedure shall be maintained in the plant files in accordance with QI-17-PSL-1, Quality Assurance Records.				

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6.0 IN	ISTRUCT	IONS				
_						
6.	1 Inserv	vice Testing Requirements				
	opera have	nservice testing requirements identified in this Plan verify tional readiness of ISI Class 1, 2 and 3 pumps and valve a specific function in mitigating the consequences of an bringing the reactor to a safe shutdown.	es which			
	Part 1 deterr	s regard, the general requirements of Part 6, Paragraph I0, Paragraph 1.1 of the Code are applied to the Program mination as it applies to ISI Class 1, 2 and 3. Specificall onents to be included are:	n scope			
		Centrifugal and positive displacement pumps that are provided with an emergency power source and required to perform a specific function in shutting down the reactor to the safe shutdown condition, maintaining the safe shutdown condition, or in mitigating the consequences of an accident.				
	; 1 5	Valves (and their actuating and position indicating system are required to perform a specific function in shutting dov reactor to the safe shutdown condition, maintaining the s shutdown condition, or in mitigating the consequences of accident.	vn the afe			
	syster inclus includ Parag	se cases where FPL has optionally classified and constru- m, or portion of a system, to Class 2 or Class 3 requirem ion of pumps and valves so classified are not required to ed in the testing program per ASME B&PV Code, Sectio graph IWA-1320(e). Where such components are include am at FPL's option, they will be identified as such.	ents, o be n XI,			
	to det review limited syster Code	eneral Code requirements were applied to St. Lucie Unit ermine the Program scope using a systematic approach ving the function of each of the plant systems as they rel d number of bounding accident scenarios. This review e ms (and associated components) that clearly do not fit th definitions including that of ISI boundary classification or ically excluded by the Code.	by first ate to a liminated e basic			

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6.0	DM-2		ST. LUCIE PLANT FIONS (continued)	: 			
0.0	INO	INUCI					
	6.1	Inser	vice Testing Requirements (continued)				
		the ci comp were outlin indivit (and each	a series of rules or guidelines were developed that establish riteria to be used during the review of the remaining system onents. These rules establish the policies and assumption applied in the analysis to ensure consistency. Each of the ed below. From this point, in a series of steps, each of the dual components in the remaining significant safety system supporting systems) were evaluated with respect to the ful component and the need for its function as it relates to the ction XI. These steps included:	ems and ons that nese is he ms unction of			
			A review of flow diagrams of each system and identification of any components (pumps or valves) that could potentially be included in he IST Program scope. Based on the reviewer's experience, valves used for maintenance isolation, vents, drains, etc. were excluded. Typically, all pumps, power-operated valves, check valves and safety valves remained in the population designated for urther evaluation.				
		9	Each system was broken down by component and, based general system operational requirements, a narrative des of each components' safety function(s) during various pro scenarios was drafted.	cription			
	safe in d to th app		Sequentially, plant documents that refer to or discuss safety-related components or system functions were revie in detail, and information from these documents was com to the information developed in the above step 2. Where appropriate, corrections and references were applied to the individual narratives. Documents reviewed included the fe	pared ne			
			 Updated Final Safety Analysis Reports (UFSARs) Technical Specifications Plant System Descriptions (Training) Documents Special Analyses Commitment Correspondence Plant Operating Procedures Emergency Operating Procedures 10 CFR 50, Appendix J, Leakrate Test Program PSL Design Basis Documents 				

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6.0		TIONS (continued)	
	0.4		
	6.1 Inser	vice Testing Requirements (continued)	
	4.	Based on the finalized component safety function eva derived from the document review and the corrected r the IST Program testing requirements were then estal applying the guidelines listed in Section 6.2 to each o	narratives. plished by
	5.	The functional descriptions of the system components subjected to a comprehensive final review by knowled personnel to confirm the accuracy of the document.	

END OF SECTION 6.1

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6.0			TIONS (continued)	·				
	6.2	IST F	Program Testing Requirement Guidelines					
		comp	following guidelines are set forth for evaluation of system ponents (pumps and valves) with respect to their inclusion IST Program and to what extent testing will be performe					
			Where multiple components are capable of performing the equivalent and redundant specified function (e.g., multiple closing in series) and where the components are not sup alternate and redundant power supplies, only one needs included in the program. The component must be relied perform and not simply have the capability of performance exemption only applies where licensing documents do not credit for the designed redundancy (e.g., single failure cr Components performing a redundant function shall be inter the testing program if, in the process of analysis or licens justification, they are relied upon to be operable.	e valves oplied by to be upon to ce. This ot take iteria). cluded in				
			The St. Lucie Unit 1 and 2 UFSARs and related design be documents shall be the primary references for determining components are required to perform specified functions re the spectrum of predicated accidents. Although several of plant source documents (e.g., Tech Specs and EOPs) ide various components that may be important to plant safety be operated in conjunction with recovery from an accident specific credit is taken in the plant safety analysis (or is in the analysis) for a pump or valve, the component need no included in the IST Program. The exceptions to this are cases where the NRC may impose test requirements at t discretion.	ng which elated to other entify y or may nt, unless mplied in ot be those				
			Valves installed primarily for the purpose of providing cor operational flexibility (e.g., system cross-connects) that a required to operate, assuming that the designated first-lin systems and components operate satisfactorily, need not included in the IST Program. This does not exclude activithat could be called upon as a result of optional system line existing prior to the initiation of an accident.	re not e be ve valves				

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	6.2	IST F	Program Testing Requirement Guidelines (continued)	
		4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 13 of 236 29.01 ST. LUCIE PLANT STRUCTIONS (continued)		
			redundancy related to failure of passive components nee included if a set of all of the active components (pumps a valves) needed to fulfill the specified system (train) functi tested - double or unrelated simultaneous failures need n assumed. In some cases where protection of critical sys from passive failures is a commitment or licensing basis, appropriate mitigating components shall be included in th	d not be and on as ot be tems the
			of the valve is to provide overpressure protection to syste components that perform a specific function in shutting de reactor to the safe shutdown condition, maintaining the sa shutdown condition, or in mitigating the consequences of	m own the afe
		I	complying with 10 CFR 50, Appendix J, shall be included	
		I	(pressure isolation valves) shall be included in the IST Pr	
				ŋg

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6.0	INST	RUCT	IONS (continued)	
4INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES14 of 236ADM-29.01ST. LUCIE PLANT				
4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 14 of 236 ADM-29.01 ST. LUCIE PLANT 5.0 6.0 INSTRUCTIONS (continued) 6.2 IST Program Testing Requirement Guidelines (continued) 10. When a valves' normal position during operation is its position required to perform its designated safety function, and valve movement may be required due to plant evolutions or possible repositioning during accident response or recovery operations, then predice exercising per the Code is required (i.e., the valve can not be considered passive). For check valves, if the valve is physically locked or held in position or flow in the line is blocked with a normally closed stop valve, then the check valve may be considered to be passive. (Ref. NUREG-1482) 11. Where an air- or hydraulic-operated valve is provided with a simple non-redundant pilot valve arrangement, the pilot valve(s) need not be specifically included in the IST Program provided that the testing performed on the main valve verifies the proper operation of the pilot valve(s). 12. Control valves are specifically excluded from testing per Part 10, Paragraph 1.2(a); however, if a control valve must change position to perform a safety-related function, then it must be included in the IST Program and tested as applicable. 13. Check valves are included where a valve serves as the only effective boundary between piping associated with a necessary safety function and non-safety grade (non-seismic) piping. Unless otherwise stated in the plant design documents, failure of passive system components is assumed only for non-safety grade systems.				
		s r t	simple non-redundant pilot valve arrangement, the pilot vaneed not be specifically included in the IST Program provide the testing performed on the main valve verifies the properties the	alve(s) vided that
	1	F	Paragraph 1.2(a); however, if a control valve must change o perform a safety-related function, then it must be include	e position
	1		effective boundary between piping associated with a nece safety function and non-safety grade (non-seismic) piping otherwise stated in the plant design documents, failure of system components is assumed only for non-safety grade	essary . Unless passive
	1	a F	and closed), exercising in both directions is required. For power-operated valves, stroke time measurements in both	these
	1	р а	plant shutdown and recovery from a fire per a commitmer as a result of 10 CFR 50, Appendix R, are not necessarily	nt made

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6.0	INS	TRUC	TION	IS (continued)	
	6.2	IST	Progi	ram Testing Requirement Guidelines (continued)	
		16.	nee	nps and valves that are not categorized as ISI Clas d not be included in the IST Program; however, in may be included as "augmented" testing.	
		17.	eval	ck valves that have a safety function to close shou uated with respect to categorization as Category A respect to the following issues:	
			Α.	Whether the flow requirements for connected sys be achieved with the maximum possible leakage check valve.	
			В.	The effect on the performance of other component systems due to the reduced flow resulting from the	
			C.	The consequences of loss of fluid from the system	m.
			D.	The effect that backflow through a valve may hav and components, such as the effect of high temp thermal stresses.	•••
			E.	The radiological exposure to plant personnel and caused by the leak.	the public
		18.	com com the s indiv gove	ere a major component contains pumps or valves the posite subsystem such that overall operation of the ponent reflects proper operation of the subcomponent subcomponents can be designated as skid-mount vidual testing is not required. For example, steam ernor valves are considered to be an integral part of the and, as such, need not be included in the IST f	e major ents, then ed and turbine of the

END OF SECTION 6.2

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	6.3	Inser	vice Testing Program for Pumps			
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of the Code and any interpretations or additional requirements, as appropriate, imposed by NRC Generic Letter 89-04 and NUREG-1482. Where these requirements have been determined to be impractical, conformance would cause unreasonable hardship without any compensating increase in safety, or an alternate test provides an acceptable level of quality and safety, relief from Code requirements is requested pursuant to the requirements of 10 CFR 50.55a, NRC Generic Letter 89-04 and NUREG-1482. Where pumps are included in the Program and testing is determined to be optional per ASME B&PV Code, Section XI, Paragraph IWA-1320(e), deviations from Code requirements may arise due to practicality considerations. In success relief may not be requested; however, if relief is formalized in a relief request, it should be considered as a means for						
		2.	Allowable Ranges of Test Quantities			
			Table 3, will be used for all measurements of pressure, fl	low and		
		3.	Testing Intervals			
		:	set forth in Part 6, Paragraph 5.1, and related relief reque A band of +25 percent of the test interval may be applied schedule as allowed by the St. Lucie Technical Specifica	ests. I to a test		
		4.	Pump Program Table			
	4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 16 of 23 ADM-29.01 ST. LUCIE PLANT 16 of 23 ADM-29.01 ST. LUCIE PLANT 16 of 23 INSTRUCTIONS (continued) 6.3 Inservice Testing Program for Pumps 1 Code Compliance This IST Program for pumps meets the requirements of Part 6 of the Code and any interpretations or additional requirements, as appropriate, imposed by NRC Generic Letter 89-04 and NUREG-1482. Where these requirements have been determined to be impractical, conformance would cause unreasonable hardship without any compensating increase in safety, or an atternate test provides an acceptable level of quality and safety, relief from Code requirements is requested pursuant to the requirements of 10 CFR 50.55a, NRC Generic Letter 89-04 and NUREG-1482. Where pumps are included in the Program and testing is determined to be optional per ASME B&PV Code, Section XI, Paragraph IWA-1320(e), deviations from Code requirements may arise due to practicality considerations. In such cases relief may not be requested; however, if relief is formalized in a relief request, it should be considered as a means for documentation only and regulatory approval is not required. 2. Allowable Ranges of Test Quantities The allowable ranges for test parameters as specified in Part 6, Table 3, will be used for all measurements of pressure, flow and vibration except as provided for in specific relief requests. A band of +25 percent of the test interval may be applied to a test schedule as allowed by the St. Lucie Technical Specifications to provide for operational flexibility. 4. <td< td=""><td></td></td<>					

EVISI	ON NO	.:	PROCEDURE TITLE:	PAGE
4			INSERVICE TESTING (IST) PROGRAM	
ROCE	DURE	NO.:	FOR PUMPS AND VALVES	17 of 236
٨٣	DM-29	0.01	ST. LUCIE PLANT	
			TIONS (continued)	
	6.3	Inser	vice Testing Program for Pumps (continued)	
		5.	Relief Requests for Pump Testing	
			Assessive A includes the unlist service soluted to pure	an tooting
			Appendix A includes the relief requests related to pur	np testing.
			END OF SECTION 6.3	

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4			INSERVICE TESTING (IST) PROGRAM	18 of 236	
4 PROCEDURE NO.:		NO.:	FOR PUMPS AND VALVES		
	<u>DM-29</u>		ST. LUCIE PLANT		
6.0	1112	RUC	TIONS (continued)		
	6.4	Inser	vice Testing Program for Valves		
		1.	Code Compliance		
			This IST Program for valves meets the requirements of of the Code and any interpretations or additional require as appropriate, imposed by NRC Generic Letter 89-04 a NUREG-1482. Where these requirements have been d to be impractical, conformance would cause unreasona hardship without any compensating increase in safety, o alternate test provides an acceptable level of quality and relief from Code requirements is requested pursuant to requirements of 10 CFR 50.55a, NRC Generic Letter 89 NUREG-1482. Where valves are included in the Progra testing is determined to be optional per ASME B&PV Co Section XI, Paragraph IWA-1320(e), deviations from Co requirements may arise due to practicality consideration cases relief may not be requested; however, if relief is f in a relief réquest, it should be considered as a means documentation only and regulatory approval is not requirements	ements, and etermined ble or an d safety, the 9-04 and am and ode, de s. In such ormalized for	
		2.	Testing Intervals		
			The test frequency for valves (excluding safety/relief val included in the Program will be as set forth in Part 10, F 4.2 and 4.3, and related relief requests. A band of +25 the test interval may be applied to a test schedule as al the St. Lucie Technical Specifications to provide for ope flexibility. Where quarterly exercise testing of valves is or otherwise undesirable, testing may be performed duri shutdown and refueling periods as permitted by Part 10 Paragraphs 4.2.1.2 and 4.3.2.2. Justifications for such testing are provided in Appendices C, D and E.	Paragraphs percent of lowed by rational impractical ng cold	
		3.	Check Valve Testing		
			Full-stroke exercising of check valves to the open position system flow requires that a test be performed whereby the predicted (required) full accident condition flowrate throut valve be verified and measured. Any deviation to this re- must satisfy the requirements of NRC Generic Letter 89 Position 1.	he igh the equirement	

4 INSERVICE TESTING (IST) PROGRA	M			
FOR PUMPS AND VALVES	19 of 236			
4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 19 of 236				
6.0 INSTRUCTIONS (continued)				
6.4 Inservice Testing Program for Valves (continued)				
4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 19 of 236 ADM-29.01 ST. LUCIE PLANT 19 of 236 0 INSTRUCTIONS (continued) 6.4 Inservice Testing Program for Valves (continued) 4. Valve Program Table Tables 2 and 3 list those valves included in the IST Program with references to required testing, respective test intervals and applicable requests for relief. 5. Relief Requests for Valve Testing Appendix B includes the relief requests related to valve testing. Unless otherwise stated, relief requests are common to both units. When alternate testing or inspection plans are specified using sampling plans, unless otherwise stated, the two units are considered to be separate and independent - Units 1 and 2 valves				
4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 19 of 236 ADM-29.01 ST. LUCIE PLANT 10 6.0 INSTRUCTIONS (continued) 6.4 Inservice Testing Program for Valves (continued) 10 6.4 Inservice Testing Program Table Tables 2 and 3 list those valves included in the IST Program with references to required testing, respective test intervals and applicable requests for Valve Testing Appendix B includes the relief requests related to valve testing. Unless otherwise stated, relief requests are common to both units. When alternate testing or inspection plans are specified using sampling plans, unless otherwise stated, the two units a re considered to be separate and independent - Units 1 and 2 valves are not to be considered part of the same sample population.				
END OF SECTION 6.4				

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4	INSERVICE TESTING (IST) PROGRAM	20 of 226
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6.0 INSTRUC	TIONS (continued)	

6.5 Authority

The St. Lucie IST Program is based on the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition and ASME/ANSI OM-Code, including OMA-88 Addenda, "Operation and Maintenance of Nuclear Power Plants."

This combined (Units 1 and 2) St. Lucie ASME Inservice Testing (IST) Program will be in effect for both units through the end of each unit's current 120-month (10-year) interval unless revised and reissued for reasons other than routine update required at the start of each unit's next 120-month interval per 10 CFR 50.55a. The inspection intervals are defined as follows:

UNIT	INTERVAL	BEGINS	ENDS
1	3	February 11, 1998*	February 10, 2008
2	2	August 8, 1993	August 7, 2003

By letter L-85-431 dated November 13, 1985, Florida Power & Light Company (FPL) requested NRC's approval to extend the first ten-year inspection interval for St. Lucie Unit 1 to February 11, 1988. By letter dated November 20, 1985 (Denton to Williams), the NRC staff approved the expansion and, as a result, the second ten-year inservice testing interval for St. Lucie Unit 1 began February 11, 1988, and the third interval began February 11, 1998.

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END OF SECTION 6.5

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4	INSERVICE TESTING (IST) PROGRAM				
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ADM-29.01	ST. LUCIE PLANT				
	TABLE 1UNITS 1 AND 2 PUMP TABLES(Page 1 of 3)				
	LEGEND				
Pump Number	Alpha-numeric designator indicated on the respect diagram.	ctive flow			
Description Generic name/function of the pump.					
CL	ISI Classification per the associated ISI boundary	drawing(s).			
Coord Corresponds to the flow diagram coordinates of the pump.					
Test Parameters The table indicates by a Y (yes) or N (no) that the specific parameter is measured, evaluated and recorded per the applicable Code requirement. If an N is indicated, the associated relief request number is also noted in the same column.					
PR-XX	Where indicated this refers to the specific relief re (see Appendix B) related to any deviation regarding measuring or analysis of a parameter.	•			

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4 INSE			NSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES						22 of 236	
ADM-29	9.01		ST. LUCIE PLANT							
		· · · · · · · · · · · · · · · · · · ·		ABLE 1						
		UNI		PUMP Tage 2 of 3						
			(r a	ige z ui c	,					
PUMP NUMBER		DESCRIPTION	CL	COORD	SPEED	DIFF PRES.	FLOW RATE	VIBRA.		
AFW 1A	AL	ixiliary Feedwater	3	E-4	NA	Y	Y:PR-2	Y		
AFW 1B	AL	ixiliary Feedwater	3	C-4	NA	Y	Y:PR-2	Y		
AFW 1C	AL	Auxiliary Feedwater		F-4	Y	Y	Y:PR-2	Y		
BAM 1A	Во	Boric Acid Makeup		G-4	NA	Y	Y:PR-3	Y		
BAM 1B	Boric Acid Makeup		2	F-4	NA	Y	Y:PR-3	Y		
CHG 1A		Charging	2	C-2	NA	Y	Y	Y:PR-7		
CHG 1B		Charging	2	E-2	NA	Y	Y	Y:PR-7		
CHG 1C		Charging	2	G-2	NA	Y	Y	Y:PR-7		
CCW 1A	Comp	onent Cooling Water	3	F-6	NA	Y	Y	Y		
CCW 1B	Comp	onent Cooling Water	3	F-7	NA	Y	Y	Y		
CCW 1C	Comp	onent Cooling Water	3	F-7	NA	Y	Y	Y		
CS 1A	Co	ontainment Spray	2	G-6	NA	Y	Y:PR-4	Y		
CS 1B	Co	ontainment Spray	2	H-6	NA	Y	Y:PR-4	Y		
DOT 1A	Dies	el Fuel Oil Transfer	3**	B-2	NA	Y	Y:PR-10**	Y		
DOT 1B	Dies	el Fuel Oil Transfer	3**	D-2	NA	Y	Y:PR-10**	Y		
HPSI 1A	Hi Pr	ess Safety Injection	2	C-3	NA	Y	Y:PR-5	Y		
HPSI 1B	Hi Pr	ess Safety Injection	2	G-3	NA	Y	Y:PR-5	Y		
ICW 1A	Inta	ike Cooling Water	3	H-5	NA	Y	Y	Y		
ICW 1B	Inta	ke Cooling Water	3	H-7	NA	Y	Y	Y		
ICW 1C	Inta	ke Cooling Water	3	H-6	NA	Y	Y	Y		
LPSI 1A	Lo Pr	ess Safety Injection	2	F-3	NA	Y:PR-13	Y:PR-6	Y:PR-12	/	
LPSI 1B	Lo Pr	ess Safety Injection	2	G-3	NA	Y:PR-13	Y:PR-6	Y:PR-12	/	

** Optional Classification - Relief Request approval not required - provided for information only.

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4 ROCEDURE I	NO.:	INSERVIC FOF		ESTING JMPS AN			٨	23 of 2	236
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		<u>,</u>	Т	ABLE 1					
		UNI	T 2	PUMP T	ABLE				
			(Pa	ge 3 of 3	3)				
								<u> </u>	
PUMP NUMBER		DESCRIPTION	CL	COORD	SPEED	DIFF PRES.	FLOW RATE	VIBRA.	
AFW 2A	AL	ixiliary Feedwater	3	B-4	NA	Y	Y:PR-2	Y	
AFW 2B	Au	ixiliary Feedwater	3	E-4	NA	Y	Y:PR-2	Y	
AFW 2C	AL	ixiliary Feedwater	3	F-3	Y	Y	Y:PR-2	Y	
BAM 2A	Bo	oric Acid Makeup	2	F-4	NA	Y	Y:PR-3	Y	
BAM 2B	Bo	oric Acid Makeup	2	G-4	NA	Y	Y:PR-3	Y	
CCW 2A	Comp	onent Cooling Water	3	E-6	NA	Y	Y	Y	
CCW 2B	Comp	onent Cooling Water	3	E-6	NA	Y	Y	Y	
CCW 2C	Comp	onent Cooling Water	3	E-6	NA	Y	Y	Y	
CHG 2A		Charging	2	G-2	NA	Y	Y	Y:PR-7	
CHG 2B		Charging	2	E-2	NA	Y	Y	Y:PR-7	
CHG 2C		Charging	2	B-2	NA	Y	Y	Y:PR-7	
CS 2A	Co	ontainment Spray	2	G-5	NA	Y	Y:PR-4	Y	
CS 2B	Co	ontainment Spray	2	H-5	NA	Y	Y:PR-4	Y	
DOT 2A	Dies	el Fuel Oil Transfer	3**	B-2	NA	Y	Y:PR-10**	Y	
DOT 2B	Dies	el Fuel Oil Transfer	3**	D-2	NA	Y	Y:PR-10**	Y	
HPSI 2A		ess Safety Injection	2	B-3	NA	Y	Y:PR-5	Y	
HPSI 2B	Hi Pr	ess Safety Injection	2	F-3	NA	Y	Y:PR-5	Y	
HYD 2A		Hydrazine	2	G-3	Y	Y:PR-9	Y:PR-9	N:PR-8	/F
HYD 2B		Hydrazine	2	H-3	Y	Y:PR-9	Y:PR-9	N:PR-8	/F
ICW 2A	Inta	ake Cooling Water	3	H-5	NA	Y	Y	Y	
ICW 2B		ake Cooling Water	3	H-7	NA	Y	Y	Y	
ICW 2C		ake Cooling Water	3	H-6	NA	Y	Y	Y	
LPSI 2A		ess Safety Injection	2	E-3	NA	Y:PR-13	Y:PR-6	Y	/F
LPSI 2B	Lo Pr	ess Safety Injection	2	F-3	NA	Y:PR-13	Y:PR-6	Y	/F

** Optional Classification - Relief Request approval not required - provided for information only.

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4	INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES	24 of 236
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ADM-29.01	ST. LUCIE PLANT	
	TABLE 2UNIT 1 VALVE TABLE(Page 1 of 40)	
	LEGEND	
VALVE NUMBER	FPL alpha-numeric designator for the subject valve	
COORD	Coordinate location of the valve on the designated drawing	3
CL	ISI classification of the valve as per the respective ISI bou	ndary drawing
CAT	Valve category per Part 10, Paragraph 1.4	
SIZE	Valve nominal size (NPS) in inches	
TYPE	Valve type	
(A/P)	Active (A) or Passive (P) determination for the valve	
ACT. TYPE	Valve actuator type as follows:	
AO	Air-operated	
DO	Diaphragm-operated (Air)	
MO	Electric motor-operated	
MAN	Manual valve	
PO	Piston-operated (Air)	
S/A	Self-actuated	
SO	Solenoid-operated	
NORM POS.	Designates the normal position of the valve during plant op power	peration at
REM IND	Notes if a valve has remote position indication	
FAIL MODE	Identifies the failure mode (open or closed) for a valve. FAI- valve fails as-is.	
EXAM	Identifies the test requirements for a valve as follows:	
CV/C	Check valve exercise to closed position	
CV/O	Check valve full-stroke exercise to open position	
CV/PO	Check valve partial-stroke exercise to open position	
EC	Exercise to closed position. For all category A or B power- valves stroke times will be measured unless excluded by a relief request.	

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4	INSERVICE TESTING (IST) PROGRAM	
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ADM-29.01	ST. LUCIE PLANT	
	TABLE 2	
	UNIT 1 VALVE TABLE (Page 2 of 40)	
	(Fage 2 01 40)	
	LEGEND	
	(continued)	
EXAM (continued	(ل	
EE	Exercise valve to verify proper operation and stroking with r measurements. Requires observation of system parameter observation of valve operation.	
EO	Exercise to open position. For all category A or B power-op valves stroke times will be measured unless excluded by an relief request.	
FS	Fail-safe test	
INSP	Disassembly and inspection of check valves	
PI	Position indication verification	
REPL	Replacement per Paragraph 1.3.4.2	
SLT-1	Seat leakrate test per 10 CFR 50, Appendix J	
SLT-2	Seat leakrate test for pressure isolation valves	
SP	Special test - see applicable relief request	
SRV	Set point check for safety/relief valves	
VBT	Set point check for vacuum breaker valves	
TEST FREQ	The required test interval as follows:	
QR	Quarterly (during plant operation)	
CI	Determined by Containment Leakage Rate Testing Program accordance with 10 CFR 50, Appendix J, Option B.	in
CS	Cold shutdown as defined by Technical Specifications	
RF	Each reactor refueling outage (cycle)	
SP	Special test frequency - refer to relief request for details	
6M	Every six months	
18M	Every 18 months	
2Y	Every 2 years	
5Y	Every 5 years per Part 1, Paragraph 1.3.3.1(b) or 1.3.4.2	
10Y	Every 10 years per Part 1, Paragraph 1.3.41(b)	
RELIEF REQ	Refers to the specific relief request associated with the adja requirement. (See Appendix E)	cent test

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4				INSE	RVIC						GRAM	1	1	
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						(Pag	je 3 (of 40)						
P&ID: 877	0-G-078	8 SH	110A	4										
SYSTEM:	REACT	OR		LANT	SYST	EM	·		·····	· · · · · · · · · · · · · · · · · · ·	1	r	,	······································
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
PCV-1100E	F-7	1	В	3.000	Angle	A	DO	O/C	Yes	FC	EC FS PI	CS CS 2Y		
PCV-1100F	G-7	1	В	3.000	Angle	A	DO	O/C	Yes	FC	EC FS PI	CS CS 2Y		
V1200	C-4	1	С	3.000	Safety	A	S/A	С	No		SRV	5Y		
V1201	C-4	1	С	3.000	Safety	A	S/A	С	No		SRV	5Y		
V1202	C-5	1	С	3.000	Safety	А	S/A	С	No		SRV	5Y		
V1402	C-2	1	В	2.500	Globe	A	SO	С	Yes	FC	EO FS PI	CS CS 2Y		
V1403	C-3	1	В	2.500	Gate	A	мо	0	Yes	FAI	EC Pl	QR 2Y		
V1404	B-2	1	В	2.500	Globe	A	SO	С	Yes	FC	EO FS PI	CS CS 2Y		
V1405	В-3	1	В	2.500	Gate	A	мо	0	Yes	FAI	EC Pl	QR 2Y		
V1441	F-1	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V1442	G-1	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V1443	D-2	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V1444	D-2	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y		

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ADM-2	9 01					ST	LUC	IE PL	ANT						
7.0101 2	0.01	I					ABLI	_					ł		
					UNIT	-		ΈΤΑ	BLE						
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P&ID: 877				-	OVOT			لا م							
SYSTEM:	REACI				51511	±1V1 (0			Deer	Fail		Test	Relief	·	
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Mode	Exam	Freq	Req.	Remarks	
V1445	E-1	2	В	1.000	Globe	Α	SO	LC	Yes	FC	EC	CS			
											EO FS	CS CS			
											PI	2Y			
	1		-											1	
V1446	E-1	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC	CS			
V1446	E-1	2	В	1.000	Globe	A	SO	LC	Yes	FC	EO	CS			
V1446	E-1	2	В	1.000	Globe	A	SO	LC	Yes	FC					
V1446 V1449	E-1 G-2	2	В	1.000	Globe	A	so so	LC	Yes Yes	FC FC	EO FS PI EC	CS CS 2Y CS			
											EO FS PI	CS CS 2Y			

P&ID: 8770-G-078 SH 120B SYSTEM: CHEMICAL AND VOLUME CONTROL

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-02-1	F-5	2	В	2.000	Gate	Ρ	MO	С	Yes	FAI	PI	2Y		
MV-02-2	F-5	2	В	2.000	Globe	Р	мо	С	Yes	FAI	PI	2Y		
SE-02-01	D-6	1	В	2.000	Globe	A	SO	0	Yes	FO	EC EO FS PI	QR QR QR 2Y		
SE-02-02	C-6	1	В	2.000	Globe	A	SO	0	Yes	FO	EC EO FS PI	QR QR QR 2Y		
SE-02-03	F-6	1	В	2.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y		
SE-02-04	E-6	1	В	2.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V02132	C-3	2	С	2.000	Check	A	S/A	С	No		CV/C CV/O	QR QR		
V02133	E-3	2	С	2.000	Check	A	S/A	С	No		CV/C CV/O	QR QR		

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4 PROCEDURE	E NO.:			INS				'ING (S ANI			GRAM S	1	a pipe a Aunu dile riversi u s	28 of 2	236
ADM-2	9 01					ST	111	CIE P	LAN	т			4 (14)		
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P&ID: 877						2011		(
SYSTEM:	CHEN	IICAL	. ANI		UME		Act.	(CONU Norm		Fail	1	Test	Relief	r	
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Type	Pos.	Ind	Mode	Exam	Freq	Req.	Remarks	
V02134	G-3	2	С	2.000	Check	А	S/A	С	No		CV/C	QR			
											CV/O	QR			
V2315	B-2	2	C		Relief	A	S/A	<u>с</u>	No		SRV	10Y			
V2318	D-2	2	C C	0.500		A	S/A S/A	с с	No No		SRV SRV	10Y 10Y			
V2321 V2324	F-2 F-3	2	C C	1.500		A	S/A S/A	с С	No		SRV	10 T		<u> </u>	
V2324 V2325	D-3	2	C	1.500			S/A	C C	No		SRV	10Y			
V2326	B-3	2	c	1.500		A	S/A	C	No		SRV	10Y	u.,		
V2338	C-3	2	В	2	Gate	Α	MAN	LO	No		EC	QR			/R4
V2340	A-3	2	в	2	Gate	A	MAN	С	No		EO	QR			/R4
V2430	B-5	2	С	2.000	Check	A	S/A	0	No		CV/PO CV/O	QR RF	RFJ-01		
V2431	F-7	1	С	2.000	Check	A	S/A	С	No		CV/PO CV/0	CS RF	RFJ-01		
V2432	D-7	1	С	2.000	Check	A	S/A	0	No		CV/PO CV/O	QR CS			
V2433	C-7	1	С		Check	A	S/A	0	No		CV/O	QR			
V2515	G-7	1	A	2.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2516	G-6	1	A	2.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2435	C-6	1	С	2.000	Check	Α	S/A	С	No		CV/O	QR			/R4

4	D.:	PRC				- -	COTI		от\ ¹					AGE	
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ADM-2	9.01					ST.	LUC	IE PL	ANT						,
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								<u>'E TA</u>							
						(Pag	јебо	of 40)							
&ID: 877 YSTEM:					JME C	ONT	ROL								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
SE-01-01	C-2	2	A	0.750	Globe	A	SO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2115	D-5	3	С	4.000	Relief	A	S/A	С	No		SRV	10Y			
V2118	E-5	2	с	4.000	Check	A	S/A	0	No		CV/C CV/0	CS QR			
V2191	F-5	2	С	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO	QR RF CS	RFJ-02 RFJ-02		/R
V2501	E-5	2	В	4.000	Gate	A	мо	0	Yes	FAI	EC EO PI	CS CS 2Y			
V2504	F-5	3	В	3.000	Gate	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y			
V2505	C-3	2	A	0.750	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2507	B-2	2	в	0.750	Gate	Р	so	С	Yes	FC	PI	2Y			/R
V2525	G-4	3	В	4.000	Gate	A	мо	С	Yes	FAI	EC Pl	QR 2Y			
V2526	D-5	3	с	4.000	Check	A	S/A	0	No		CV/O	QR			
V2621	C-4	3	в	3.000	Gate	A	MAN	0	No	FAI	EE	QR			

REVISION NO	D .:	PRC		IRE TIT									P	AGE:
4 PROCEDURE	NO.:			INSE				NG (I AND			GRAM			30 of 23
ADM-2	9.01					ST.	LUC		ANT					
						<u>. 1 v</u>		E 2 / <u>E TA</u> of 40)						
P&ID: 877 SYSTEM:					JME C	ONT	ROL							
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-2161	G-5	2	В	1.000	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y		
V2177	H-5	2	с	3.000	Check	A	S/A	с	No		CV/O CV/PO	RF CS	RFJ-02 RFJ-02	1
V2190	G-2	2	С	3.000	Check	A	S/A	С	No		CV/O CV/PO	RF CS	RFJ-02 RFJ-02	1 1
V2443	F-4	2	С	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO	QR RF QR	RFJ-02 RFJ-02	
∨2444	G-4	2	С	3.000	Check	A	S/A	с	No		CV/C CV/O CV/PO		RFJ-02 RFJ-02	
V2508	F-3	2	В	3.000	Gate	A	мо	С	Yes	FAI	EO Pl	QR 2Y		
V2509	F-2	2	В	3.000	Gate	A	мо	С	Yes	FAI	EO PI	QR 2Y		
V2510	H-3	2	в	1.000	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y		
V2511	D-4	2	В	1.000	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y		
V2514	H-5	2	В	3.000	Gate	А	мо	С	Yes	FAI	EO PI	QR 2Y		

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4 PROCEDURE	E NO.:			INSE				NG (I S AND			GRAM			31 of 2	36
ADM-2	9.01					ST.	LUC	IE PL	ANT	-					
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					UNIT			E TA	BLE						
						(Pag	je 8	of 40)	l						
P&ID: 877 SYSTEM:		· ·											_		
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3101	B-4	2	С	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO	QR RF QR	RFJ-03 RFJ-03	1 1	/R4
V3103	F-4	2	с	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO	QR RF QR	RFJ-03 RFJ-03		/R4
V3401	C-2	2	С	6.000	Check	A	S/A	с	No		CV/O CV/PO	RF QR	RFJ-04 RFJ-04	1	
V3410	G-2	2	с	8.000	Check	A	S/A	с	No		CV/O CV/PO	RF QR	RFJ-04 RFJ-04	1 1	
V3412	F-6	2	С	1.000	Relief	Α	S/A	с	No	:	SRV	10Y			
V3414	G-4	2	с	3.000	Stp-Ck	A	S/A	С	No		CV/C CV/O CV/PO	QR RF CS	RFJ-05 RFJ-05	1	
V3417	C-6	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
∨3427	C-4	2	С	3.000	Stp-Ck	A	S/A	С	No		CV/C CV/O CV/PO	QR RF CS	RFJ-05 RFJ-05		
V3430	F-2	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
V3431	B-2	2	с	1.000	Relief	А	S/A	С	No		SRV	10Y			
V3654	G-5	2	В	6.000	Gate	Ρ	мо	LO	Yes	FAI	PI	2Y			
V3656	D-5	2	В	6.000	Gate	Ρ	мо	LO	Yes	FAI	EC Pl	QR 2Y			/R4
V3662	F-2	2	В	4.000	Gate	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y			
V3663	B-2	2	В	4.000	Gate	A	MO	С	Yes	FAI	EC EO PI	QR QR 2Y			

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REVISION N	D.:	PR	OCED	URE TIT	LE:								P	AGE
4				INSE							RAM			
ROCEDUR	E NO.:				FOR	PU	MPS	AND	VAL	.VES				32 of 2
ADM-2	9.01					ST.	LUC	IE PL	ANT					
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					UNIT				BLE					
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P&ID: 877	70-G-07	8 SH	130	в										
SYSTEM:	SAFE	ry in	JEC.	TION		r —	ı				1		I	T
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-3306	G-5	2	В	10.000	Globe	A	PO	LO	Yes	FO	EC PI	QR 2Y		
HCV-3657	F-6	2	В	10.000	Globe	A	DO	LC	Yes	FC	EO Pl	QR 2Y		
MV-03-2	H-5	2	В	10.000	Globe	A	мо	LO	Yes	FAI	EC Pl	QR 2Y		
SR-07-1A	F-2	2	С	1.500	Relief	А	S/A	С	No		SRV	10Y		
SR-07-1B	G-2	2	С	1.500	Relief	А	S/A	С	No		SRV	10Y		
V03920	B-4	3	В	2.000	Globe	А	MAN	с	No	FAI	EE	QR		
∨07000	F-2	2	С	14.000	Check	А	S/A	С	No		CV/O CV/PO	RF QR	RFJ-06 RFJ-06	1 1
V07001	G-2	2	С	14.000	Check	A	S/A	С	No		CV/O CV/PO	RF QR	RFJ-06 RFJ-06	
V07009	A-4	2	A	2.000	Globe	A	MAN	LC	No		EE SLT-1	QR CI		
V3104	F-4	2	С	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO		RFJ-07 RFJ-07	
V3105	F-4	2	С	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO		RFJ-07 RFJ-07	
V3106	F-4	2	С	10.000	Check	Α	S/A	с	No		CV/C CV/O	QR CS		
V3107	G-4	2	С	10.000	Check	A	S/A	С	No		CV/C CV/O	QR CS		
V3206	F-4	2	В	10.000	Gate	A	мо	LO	Yes	FAI	EC EO PI	QR QR 2Y		
V3207	G-4	2	В	10.000	Gate	A	мо	LO	Yes	FAI	EC EO PI	QR QR 2Y		
V3407	A-4	3	С	0.500	Relief	Α	S/A	с	No		SRV	10Y		

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ADM-2						ST		IE PL	ANT					
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					<u>UNIT</u>	<u>1 V</u>	ALV							
P&ID: 873 SYSTEM:					·	C		·	, ,					
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V3432	G-2	2	в	14.000	Gate	A	мо	LO	Yes	FAI	EC Pl	QR 2Y		
V3439	H-7	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y		
V3444	F-2	2	В	14.000	Gate	А	мо	LO	Yes	FAI	EC Pl	QR 2Y		
V3452	C-2	2	В	12.000	Gate	А	мо	LC	Yes	FAI	EO PI	QR 2Y		
V3453	D-2	2	В	12.000	Gate	А	мо	LC	Yes	FAI	EO PI	QR 2Y		
V3456	D-7	2	в	10.000	Gate	A	МО	LC	Yes	FAI	EO PI	QR 2Y		
V3457	E-7	2	в	10.000	Gate	A	мо	LC	Yes	FAI	EO Pl	QR 2Y		
V3463	A-4	2	A	2.000	Globe	Р	MAN	LC	No		EE SLT-1	QR CI		
V3466	A-3	3	С	2.000	Relief	А	S/A	С	No		SRV	10Y		
V3659	A-7	2	в	3.000	Gate	A	MO	LO	Yes	FAI	EC PI	CS 2Y		
V3660	B-7	2	В	3.000	Gate	А	МО	LO	Yes	FAI	EC Pl	CS 2Y		
	1			1.000	Globe	Р	DO	С	Yes	FC	PI	2Y		

REVISION NO	J.:	PRC				<u>с</u> т	COTI		CT) I					AGE
4 PROCEDURE NO.:		-	INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES											
ADM-2	9.01					ST.	LUC	IE PL		•				
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P&ID: 877 SYSTEM:														
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-03-1E	G-4	2	A	0.375	Needle	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-03-1F	G-4	2	A	0.375	Needle	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2 CI		
HCV-3615	A-2	2	В	6.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3616	B-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3617	B-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3625	C-2	2	В	6.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3626	C-2	2	В	2.000	Globe	А	мо	С	Yes	FAI	EC EO PI	QR QR PI		
HCV-3627	D-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR Pl		
HCV-3635	E-2	2	В	6.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR PI		
HCV-3636	F-2	2	В	2.000	Globe	А	мо	С	Yes	FAI	EC EO PI	QR QR PI		
HCV-3637	F-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR PI		

	J.:	PRC	JUEDI				-071							AGE
4 PROCEDURE NO.:		-	INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES											
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P&ID: 877 SYSTEM:					(contini	ued)								
Valve Number	Coord.	CL	Cat.	r	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-3645	G-2	2	В	6.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3646	H-2	2	В	2.000	Globe	A	MO	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3647	H-2	2	в	2.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-03-1A	C-2	2	В	2.000	Globe	A	МО	LC	Yes	FAI	EC EO Pl	QR QR 2Y		
MV-03-1B	E-3	2	в	2.000	Globe	A	мо	LC	Yes	FAI	EC EO PI	QR QR 2Y		
V3113	B-3	1	AC	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF SP 2Y	VR-04 RFJ-08 RFJ-08	
V3114	A-3	1	AC	6.000	Check	А	S/A	С	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04	
V3123	C-3	1	AC	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF SP 2Y	VR-04 RFJ-08 RFJ-08	
V3124	C-3	1	AC	6.000	Check	A	S/A	С	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04	
V3133	F-3	1	AC	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF SP 2Y	VR-04 RFJ-08 RFJ-08	
V3134	E-3	1	AC	6.000	Check	А	S/A	с	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04	

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ADM-2	20 01					ST	LUC	IE PL	ANT						
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&ID: 87	70-G-07	8 SH	131	A											
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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3143	H-3	1	AC	2.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF SP 2Y	VR-04 RFJ-08 RFJ-08		
V3144	G-3	1	AC	6.000	Check	A	S/A	С	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04		
V3468	D-2	2	С	2.000	Relief	А	S/A	С	No		SRV	10Y			
V3469	D-6	1	С	1.000	Relief	A	S/A	с	No		SRV	5Y			
V3480	D-7	1	A	10.000	Gate	A	мо	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y 2Y			
V3481	D-5	1	A	10.000	Gate	А	мо ,	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y 2Y			
V3482	D-6	1	С	1.000	Relief	А	S/A	С	No		SRV	5Y			
V3483	D-2	2	С	2.000	Relief	А	S/A	С	No		SRV	10Y			
V3651	E-5	1	A	10.000	Gate	A	мо	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y 2Y			
V3652	E-7	1	A	10.000	Gate	A	мо	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y			

REVISION NO	D.:	PR	DCED	URE TIT	LE:								P.	AGE	
4				INSE							RAM				
PROCEDURE	NO.:	1			FOR	PU	MPS	AND	VAL	VES				37 of 2	236
ADM-2	9.01					ST	LUC	IE PL	ANT				1		
	0.01	1					ABLE		<u> </u>						
					UNIT				BLE						
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P&ID: 877 SYSTEM:															
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
HCV-3618	D-5	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
HCV-3628	D-2	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
HCV-3638	H-2	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
HCV-3648	H-5	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
V3211	H-6	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
V3215	C-6	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-05 VR-05	1 1	
V3217	E-7	1	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-06 VR-06		
V3221	A-3	2	С	1.000	Relief	А	S/A	с	No		SRV	10Y			
V3225	C-3	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-05 VR-05		
V3227	D-4	1	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-06 VR-06		
V3231	E-3	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
V3231	E-3	2	С	1.000	Relief	A	S/A	С	No						

REVISION N	0.:	PR	OCED	URE TIT	LE:								P	AGE	
4				INSE	RVIC	E TI	ESTI	NG (I	ST) F	PROC	GRAM				
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							Act	Norm	Rom	Fail	1	Test	Relief]
Valve Number	Ċoord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Freq	Req.	Remarks	
V3235	G-3	2	AC	12.000	Check	А	S/A	С	No			SP CS	VR-04 VR-05		
	Ì										CV/PO CV/O	RF	VR-05		
											SLT-2	2Y			
V3237	H-4	1	AC	12.000	Check	А	S/A	С	No		CV/C CV/PO	SP CS	VR-04 VR-06		
											CV/O	RF	VR-06		
	_			1 000	Dellef						SLT-2	2Y			
V3241	E-6	2	C	1.000	Relief	A	S/A	C	No		SRV	10Y			
V3245	G-6	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO	SP CS	VR-04 VR-05		
											CV/O SLT-2	RF 2Y	VR-05		
V3247	H-7	1	AC	12.000	Check	Α	S/A	с	No		CV/C	SP	VR-04		
V0247	11-7	'		12.000	Oneon	~	0,71	Ŭ			CV/PO	cs	VR-06		
											CV/O SLT-2	RF 2Y	VR-06		
V3611	C-6	2	В	1.000	Gate	A	DO	с	Yes	FC	EC	QR			
											EO FS	QR QR			
											PI	2Y			
V3614	C-6	1	В	12.000	Gate	A	мо	LO	Yes	FAI	EC PI	CS 2Y			
V3621	C-3	2	В	1.000	Gate	A	DO	с	Yes	FC	EC	QR			
											EO FS	QR QR			
											PI	2Y			
V3624	C-3	1	В	12.000	Gate	А	мо	LO	Yes	FAI	EC Pi	CS 2Y			
V3631	G-3	2	в	1.000	Gate	А	DO	С	Yes	FC	EC	QR			
											EO	QR			
											FS PI	QR 2Y			

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4			INSE							RAM				
PROCEDURE NO .:				FOR	PU	MPS	AND	VAL	VES				39 of 2	236
ADM-29.01					ST.	LUC	IE PL	ANT						
P&ID: 8770-G-0			-	(1	<mark>1 V</mark> Page		E 2 <u>E TA</u> of 40							
Valve Number	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3634 G-3	1	В	12.000	Gate	A	мо	LO	Yes	FAI	EC PI	CS 2Y			
V3641 G-6	2	В	1.000	Gate	A	DO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
V3644 G-6	1	в	12.000	Gate	A	мо	LO	Yes	FAI	EC Pl	CS 2Y			

P&ID: 8770-G-078 SH 150 SYSTEM: SAMPLING

	SAME									•				
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V5200	B-2	2	A	0.375	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V5201	C-2	2	A	0.375	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V5202	D-2	2	A	0.375	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V5203	B-2	2	A	0.375	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V5204	C-2	. 2	A	0.375	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y Cl		
V5205	D-2	2	A	0.375	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		

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4				INSE	RVIC	ΕT	ESTI	NG (I	ST)	PRO	GRAM	ł	ļ	
PROCEDUR	NO.:									VES				40 of 23
ADM-2	9.01					ST.	LUC		ANT	-				
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P&ID: 877 SYSTEM:				-	IT									
Valve	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm	Rem Ind	Fail Mode	Exam	Test Freg	Relief Rea.	Remarks
Number							Type	Pos.	mu	INIOUE		rieq	rteq.	
Number V6301	G-4	2	A	3.000	Diaph	A	DO	O	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI	Req.	

P&ID: 8770-G-078 SH 163A SYSTEM: WASTE MANAGEMENT

Valve Number	Coord.	CL	Cat.	Size	Туре	AVP	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
∨6554	B-6	2	A	1.000	Diaph	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V6555	B-5	2	A	1.000	Diaph	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		

P&ID: 8770-G-078 SH 163B SYSTEM: WASTE MANAGEMENT

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
¶₁ ∨6741	F-5	2	A	1.000	Globe	А	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V6779	F-4	2	AC	1.000	Check	A	S/A	С	No		CV/C SLT-1	RF Cl	RFJ-25	

/R4

REVISION N	0.:	PR	OCED	URE TIT	LE:								P	AGE	
4				INSE				NG (I AND			GRAM		a	41 of 2	226
PROCEDUR	E NO.:				FUR	PU	NP3	AND	VAL	-VES				41012	200
ADM-2	29.01							IE PL	ANT						
							ABLE								
								<u>Е ТА</u> of 40							
					()				,						
P&ID: 873 SYSTEM:															
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
HCV-08-1A	B-6	2	вс	34.000	Stp-ck	A	AO	0	Yes		EC Pl	CS 2Y			
HCV-08-1B	E-6	2	вс	34.000	Stp-ck	A	AO	0	Yes		EC Pl	CS 2Y			
HCV-08-2A	B-4	2	в	6.000	Angle	A	DO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
HCV-08-2B	E-4	2	в	6.000	Angle	A	DO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
MV-08-1A	B-6	2	В	3.000	Globe	A	мо	с	Yes	FAI	EC PI	QR 2Y			
MV-08-1B	E-6	2	в	3.000	Globe	A	мо	С	Yes	FAI	EC PI	QR 2Y			
MV-08-3	G-6	2	В	4.000	Gate	A	мо	С	Yes	FAI	EO Pl	QR 2Y			
MV-08-13	H-4	2	В	3.000	Gate	А	МО	С	Yes	FAI	EC EO Pl	QR QR 2Y			
MV-08-14	H-3	2	В	3.000	Gate	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y			
V08117	B-6	2	С	34.000	Check	A	S/A	0	No		INSP CV/PO	RF SP	VR-07 VR-07		
V08130	G-4	2	С	4.000	Check	A	S/A	0	No		CV/C CV/O CV/PO CV/PO	RF CS QR SP	VR-08		/R4
V08148	E-6	2	с	34.000	Check	А	S/A	0	No		INSP CV/PO INSP	RF SP RF	VR-08 VR-07		
V08163	G-4	2	с	4.000	Check	A	S/A	С	No		CV/C CV/O	RF CS	VR-07 VR-08	· · · · ·	
											CV/PO CV/PO INSP	QR SP RF	VR-08 VR-08		/R4

EVISION N	0.:	PR	DCED	URE TI	FLE:								P	AGE
4				INSE	ERVIC						GRAM			
ROCEDUR	E NO.:	-			FOR	PU	MPS	AND	VAL	VES				42 of 2
ADM-2	9.01					ST	LUC	IE PL	ANT					
7.0112	.0.01						ABLI							
					UNIT			<u>'E TA</u>	BLE					
					(Pag	e 19	of 40)					
P&ID: 877	70 ~ 07	പറല	4											
SYSTEM:				continu	ued)									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V08372	H-4	2	С	0.750	Check	A	S/A	0	No		CV/C	RF	RFJ-22	
V08373	H-4	2	С	0.750	Check	А	S/A	0	No		CV/C	RF	RFJ-22	
V08384	H-4	2	в	0.750	Globe	А	MAN	0	No		EE	QR		
V08387	H-4	2	в	0.750	Globe	А	MAN	0	No		EE	QR		
V8201	B-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y		
V8202	A-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y		
V8203	B-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y		
V8204	A-5	2	С	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8205	E-5	2	с	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8206	D-5	2	С	6.000	Safety	A	S/A	с	No		SRV	5Y		
V8207	E- 5	2	С	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8208	D-5	2	С	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8209	B-5	2	С	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8210	A-6	2	с	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8211	B-6	2	с	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8212	A-6	2	с	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8213	E-5	2	с	6.000	Safety	Α	S/A	с	No		SRV	5Y		
V8214	D-6	2	с	6.000	Safety	Α	S/A	С	No		SRV	5Y		
V8215	E-6	2	с	6.000	Safety	А	S/A	с	No		SRV	5Y		
V8216	D-6	2	c	6.000	Safety	A	S/A	c	No		SRV	5Y		

REVISION NO	D.:	PF	ROCED	OURE T	ITLE:					·			PA	GE	
4 PROCEDURE	NO.:	_		INS	ERVICE FOR			NG (IS AND			RAM			43 of 2	236
ADM-2	9.01					<u>ST.</u>	LUC	IE PL	ANT					<u></u>	
					<u>UNIT</u> (F	<u>1 V</u>									
P&ID: 877 SYSTEM:															
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
RD-08-1A1	D-3	NC	С	2.000	Rupdsk	А	S/A	с	No		REPL	5Y			
RD-08-1A2	D-2	NC	с	2.000	Rupdsk	А	S/A	с	No		REPL	5Y			
RD-08-1A3	D-2	NC	с	2.000	Rupdsk	Α	S/A	с	No		REPL	5Y			
RD-08-1B1	G-3	NC	С	2.000	Rupdsk	А	S/A	с	No		REPL	5Y			
RD-08-1B2	H-2	NC	С	2.000	Rupdsk	А	S/A	С	No		REPL	5Y			
RD-08-1B3	H-2	NC	с	2.000	Rupdsk	Α	S/A	с	No		REPL	5Y			
SE-08-1A1	C-4	NC	В	1.000	3WY	A	so	0	No	FO	EC	CS			
SE-08-1A2	D-4	NC	В	1.000	3WY	А	SO	0	No	FO	EC	CS			
SE-08-1A3	A-4	NC	В	1.000	3WY	А	SO	С	No	FC	EO	cs			
SE-08-1A4	B-5	NC	В	1.000	3WY	А	so	с	No	FC	EO	cs			
SE-08-1B1	G-4	NC	В	1.000	3WY	А	SO	0	No	FO	EC	cs			
SE-08-1B2	G-4	NC	В	1.000	3WY	А	so	0	No	FO	EC	cs			
SE-08-1B3	E-4	NC	В	1.000	3WY	А	so	С	No	FC	EO	cs			
SE-08-1B4	F-5	NC	В	1.000	3WY	А	so	С	No	FC	EO	cs			

REVISION	NO.:	P	ROCE	DURE T	ITLE:								1	PAGE	
	4			INS				•	• •	PRO	GRAN S	N		44 of 2	236
PROCEDUR	RE NO.:				. • •	• • •									
ADM-	29.01					ST	<u>. LUC</u>	CIE P	LAN [®]	Τ					
						<u>T 1</u>		.E 2 <u>VE TA</u> of 40		-					
P&ID: 87 SYSTEM				. <u> </u>											I
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
MV-09-1	G-3	NC	В	20.000	Gate	A	мо	0	Yes	FAI	EC PI	CS 2Y			
MV-09-2	G-5	NC	В	20.000	Gate	A	мо	0	Yes	FAI	EC PI	CS 2Y			
MV-09-7	B-6	2	B	20.000	Gate	A	мо	0	Yes	FAI	EC Pl	CS 2Y			
MV-09-8	D-6	2	В	20.000	Gate	A	мо	0	Yes	FAI	EC Pl	CS 2Y			
V09248	A-6	2	С	20.000	Check	А	S/A	0	No		INSP	RF	VR-10		
V09252	B-7	2	С	18.000	Check	А	S/A	0	No		cv/o	QR			
V09280	C-6	2	С	20.000	Check	А	S/A	0	No		INSP	RF	VR-10		
V09294	C-7	2	С	18.000	Check	А	S/A	0	No		CV/O	QR			

P&ID: 8770-G-080 SH 4 SYSTEM: FEEDWATER

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-09-9	E-6	3	в	4.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-09-10	B-6	3	В	4.000	Globe	A	MO	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-09-11	H-6	3	В	4.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-09-12	F-6	3	В	4.000	Globe	A	МО	C	Yes	FAI	EC EO PI	QR QR 2Y		
V09824	A-6	3	С	0.375	Check	Α	S/A	С	No		CV/C	RF	RFJ-23	
V09825	D-6	3	С	0.375	Check	А	S/A	С	No		CV/C	RF	RFJ-23	
V09826	E-6	3	С	0.375	Check	А	S/A	С	No		CV/C	RF	RFJ-23	
V09827	G-6	3	С	0.375	Check	А	S/A	С	No		CV/C	RF	RFJ-23	

/R4

REVISION NO	D.:	PRO	DCED	URE TI									P	AGE
4				INSE				NG (I ; ANE			GRAN	1		45 of 23
ROCEDURE	NO.:				FUR	. – U	avir S		/ V AL	-100				40 01 20
ADM-2	9.01					ST.	LUC		ANT	-				
							ABL							
					(Pag	e 22	of 40)					
P&ID: 877														
SYSTEM:	FEEDV	VATE	E R («	continu T	ued) I		<u> </u>		_		1	I	<u> </u>	· · · · · · · · · · · · · · · · · · ·
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V09107	E-4	3	С	4.000	Check	A	S/A	с	No		CV/O	cs		
V09119	E-7	2	С	4.000	Check	A	S/A	С	No	ļ	cv/o	cs		L
V09120	E-7	2	В	4.000	Gate	A	MAN	LO	No		EE	QR		
V09123	C-4	3	C	4.000	Check	Α	S/A	С	No		CV/O	cs		
V09135	B-7	2	С	4.000	Check	Α	S/A	С	No		CV/O	cs		
V09136	B-7	2	В	4.000	Gate	A	MAN	LO	No		EE	QR		
V09139	F-4	3	С	6.000	Check	Α	S/A	С	No		cv/o	cs		
V09151	H-7	2	С	4.000	Check	Α	S/A	С	No		CV/O	cs		
V09152	H-7	2	В	4.000	Gate	Α	MAN	LO	No		EE	QR		
V09157	F-7	2	С	4.000	Check	Α	S/A	С	No		cv/o	CS		
V09158	F-7	2	В	4.000	Gate	A	MAN	LO	No		EE	QR		
V09303	E-3	3	С	2.000	Check	A	S/A	С	No		CV/PO INSP	QR RF	RFJ-11	
V09304	C-3	3	с	2.000	Check	A	S/A	С	No		CV/PO CV/PO INSP	QR SP RF	VR-11 VR-11 VR-11	
V09305	D-3	3	С	2.000	Check	A	S/A	С	No		CV/PO CV/PO INSP	QR SP RF	VR-11 VR-11 VR-11	
V12174	C-2	3	С	8.000	Check	A	S/A	С	No		CV/O CV/PO	CS QR		
V12175	B-2	3	В	8.000	Gate	А	MAN	LC	No	FAI	EE	QR		
V12176	C-2	3	С	8.000	Check	A	S/A	С	No		CV/O CV/PO	CS QR		
V12177	B-2	3	в	8.000	Gate	А	MAN	LC	No	FAI	EE	cs		
V12497	C-1	3	В	8.000	Globe	А	MAN	LO	No	FAI	EE	cs		
V12506	C-1	3	В	8.000	Globe	A	MAN	LO	No	FAI	EE	QR		
V12507	F-2	3	С	0.750	Check	А	S/A	с	No		INSP	RF	RFJ-13	

REVISION N	0.:	PR	OCED		TLE:								PA	AGE	
4 PROCEDUR				INSE	ERVICE FOR			•			RAM			46 of 2	236
ADM-2	29.01					ST.	LUCI	E PL	ANT						
					<u>UNIT</u> (F	<u>1 V</u>									
P&ID: 87 SYSTEM:				NG W	ATER		T					1		·	I
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
MV-21-2	F-4	3	в	24.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y			
MV-21-3	G-4	3	в	24.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y			
SR-21-1A	B-5	3	с	2.000	Relief	A	S/A	С	No		SRV	10Y			
SR-21-1B	B-6	3	с	2.000	Relief	Α	S/A	С	No		SRV	10Y			
TCV-14-4A	A-5	3	В	30.000	Butterfly	A	PO	0	No	FO	EO FS	QR QR			
TCV-14-4B	A-6	3	В	30.000	Butterfly	A	PO	0	No	FO	EO FS	QR QR			
V21162	G-5	3	с	30.000	Check	А	S/A	0	No		CV/C CV/O	QR QR			
V21205	G-6	3	С	30.000	Check	А	S/A	0	No		CV/C CV/O	QR QR			
V21208	G-7	3	С	30.000	Check	A	S/A	0	No		CV/C CV/O	QR QR			
V21402	D-5	3	С	2.000	Check	А	S/A	0	No		CV/O	QR			
V21403	D-6	3	С	2.000	Check	А	S/A	0	No		CV/O	QR			

P&ID: 8770-G-083 SH 1A SYSTEM: COMPONENT COOLING WATER

Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-14-3A	F-1	3	В	14.000	Butterfly	A	PO	С	Yes	FO	EO FS PI	QR QR 2Y		
HCV-14-3B	F-2	3	В	14.000	Butterfly	A	PO	С	Yes	FO	EO FS PI	QR QR 2Y		
HCV-14-8A	D-4	3	В	16.000	Relief	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y		
HCV-14-8B	D-5	3	В	16.000	Relief	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y		

REVISION NO	D .:	PR	OCEL	OURE TI									I PA	AGE	
4		_		INSE	ERVICE FOR			•			RAM			47 of 2	230
RUCEDURE	NO.:				-	- •	_								
ADM-2	9.01							E PL	ANT						
							BLE								
								<u>E TAI</u> of 40)							
					(Г	aye	: 24 (Ji 40)							
P&ID: 877 SYSTEM:				COOLI	NG WAT	ER	(conti	nued)							
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
HCV-14-9	H-5	3	В	16.000	Butterfly	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y			
HCV-14-10	H-6	3	В	16.000	Butterfly	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y			
MV-14-1	E-6	2	В	24.000	Butterfly	Р	мо	С	Yes	FAI	PI	2Y			
MV-14-2	E-7	2	В	24.000	Butterfly	Ρ	мо	С	Yes	FAI	PI	2Y			
MV-14-3	G-7	2	в	24.000	Butterfly	Ρ	мо	С	Yes	FAI	PI	2Y			
MV-14-4	G-7	2	в	24.000	Butterfly	Р	мо	С	Yes	FAI	PI	2Y			
MV-14-5	C-2	2	в	10.000	Butterfly	Р	мо	0	Yes	FAI	PI	2Y			
MV-14-6	C-3	2	В	10.000	Butterfly	Р	мо	0	Yes	FAI	PI	2Y			
MV-14-7	H-2	2	В	10.000	Butterfly	Р	мо	0	Yes	FAI	PI	2Y			
MV-14-8	F-3	2	В	10.000	Butterfly	Р	мо	0	Yes	FAI	PI	2Y			
SR-14-7A	E-2	3	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
SR-14-7B	E-2	3	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
SR-14-8A	A-3	3	С	1.000	Relief	А	S/A	с	No		SRV	10Y			
SR-14-8B	A-4	3	С	1.000	Relief	А	S/A	с	No		SRV	10Y			
SR-14-8C	A-1	3	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
SR-14-8D	A-2	3	С	1.000	Relief	А	S/A	с	No		SRV	10Y			
V14143	F-6	3	С	20.000	Check	A	S/A	0	No		CV/C CV/O	QR QR			
V14147	F-7	3	С	20.000	Check	A	S/A	0	No		CV/C CV/O	QR QR			
V14151	F-7	3	С	20.000	Check	A	S/A	0	No		CV/C CV/O	QR QR			

REVISION NO	D.:	PR	OCED	URE TI	TLE:								PA	GE	
4				INSE	ERVICE FOR						RAM			48 of 2	236
PROCEDURE	NO.:				FOR		VIF O	AND	VAL	VLO				40 01 /	200
ADM-2	9.01			_		ST. I	LUCI	E PL			·				
							BLE								
								<u>E TAE</u> of 40)	<u>BLE</u>						
					ור	aye	250	л 40)							
P&ID: 877 SYSTEM:				OOLII	NG WAT	ER									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
HCV-14-1	D-6	2	A	8.000	Butterfly	A	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
HCV-14-2	E-7	2	A	8.000	Butterfly	А	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
HCV-14-6	D-7	2	A	8.000	Butterfly	Ρ	PO	Ο	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
HCV-14-7	D-6	2	A	8.000	Butterfly	Ρ	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			

P&ID: 8770-G-084 SH 1C SYSTEM: MAKE-UP WATER

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-15-1	D-6	2	A	2.000	Gate	A	мо	с	Yes	FAI	EC PI SLT-1	QR 2Y CI		
V15328	D-5	2	AC	2.000	Check	A	S/A	с	No		CV/C SLT-1	RF CI	RFJ-14	

REVISION NO	D.:	PR	OCED	URE TIT	LE:								PA	GE	
4				INSE	RVICE			•	•		RAM				
PROCEDURE	NO.:				FOR	PUI	MPS	AND	VAL	VES				49 of 3	236
ADM-2	DM-29.01 ST. LUCIE PLANT														
	DM-29.01 ST. LUCIE PLANT TABLE 2														
	TABLE 2 <u>UNIT 1 VALVE TABLE</u>														
					(F	Page	26 0	of 40)							
P&ID: 877 SYSTEM:															
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
SH18797	F-2	2	A	1.000	Ball	Р	MAN	LC	No		SLT-1	СІ			

P&ID:	8770-G-085 SH 2A	
SYSTE	M: INSTRUMENT A	١R

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F-4

F-4

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SLT-1

CI

CI

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SH18798

V18794

V18796

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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SR-18-6A	D-2	2	С	0.750	Relief	A	S/A	с	No		SRV	10Y		
SR-18-6B	D-1	2	С	0.750	Relief	А	S/A	С	No		SRV	10Y		
V18195	E-6	2	AC	2.000	Check	А	S/A	С	No		CV/C SLT-1	RF CI	RFJ-15	
V18279	B-2	2	С	0.500	Check	А	S/A	С	No		CV/C	cs		
V18283	A-3	2	С	0.500	Check	А	S/A	С	No		CV/C	CS		
V18290	H-2	2	С	0.750	Check	А	S/A	С	No		CV/C	CS	VR-12	
V18291	H-2	2	С	0.750	Check	А	S/A	С	No		CV/C	cs	VR-12	
V18294	G-2	2	С	0.750	Check	А	S/A	С	No		CV/C	CS	VR-12	
V18295	G-2	2	С	0.750	Check	А	S/A	С	No		CV/C	CS	VR-12	

P&ID: 8770-G-085 SH 2C SYSTEM: INSTRUMENT AIR

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-18-1	H-2	2	A	2.000	Gate	A	МО	0	Yes		EC PI SLT-1	QR 2Y CI		

REVISION NO.:		PR	OCED	URE TIT	LE:								PA	GE	
4				INSE	RVICE			-	•		RAM				
PROCEDURE N	10.:	-			FOR	PUN	MPS	AND	VAL	VES				50 of 2	236
ADM-29.	ADM-29.01 ST. LUCIE PLANT														
	TABLE 2														
	UNIT 1 VALVE TABLE														
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P&ID: 8770- SYSTEM: IN			-	IR						•					
Valve Number	oord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
															1

CV/C CS VR-12 V18099 B-5 3 C 1.000 Check А 1 S/A С No V18695 B-2 3 С 1.000 Check А S/A С No CV/C CS VR-12 VR-12 V18696 B-2 3 С 1.000 S/A С No CV/C CS Check А С 3 С CV/C CS VR-12 V18699 B-5 1.000 Check А S/A No

P&ID: 8770-G-086 SH 1 SYSTEM: MISCELLANEOUS SYSTEMS

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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-23-3	C-6	2	В	2.000	Globe	A	DO	0	Yes	FC	EC FS Pl	QR QR 2Y		
FCV-23-5	C-6	2	В	2.000	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y		
FCV-23-7	C-7	2	В	0.500	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y		
FCV-23-9	C-7	2	В	0.500	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y		
V17204	B-3	3**	С	1.500	Check	A	S/A	C	No		CV/PO CV/O	QR 2Y	VR-13 VR-13	
V17205	B-3	3**	В	1.500	GATE	А	MAN	LO	No	FAł	EE	QR		
V17207	B-3	3**	В	2.000	GATE	A	MAN	LC	No	FAI	EE	QR		
V17214	D-3	3**	с	1.500	Check	A	S/A	С	No		CV/PO CV/O	QR 2Y	VR-13 VR-13	
V17215	D-3	3**	в	1.500	GATE	А	MAN	LO	No	FAI	EE	QR		
V17217	D-3	3**	в	2.000	GATE	А	MAN	LC	No	FAI	EE	QR		
V17218	C-3	3**	в	2.000	GATE	А	MAN	LC	No	FAI	EE	QR		

** Optional Classification - Relief request approval not required, provided for information only.

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PROCEDUF				UNC.						LVES				51 of 23
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P&ID: 87 SYSTEM:				IT SPR	AY									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-07-1A	E-5	2	в	24.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y		
MV-07-1B	E-5	2	в	24.000	Butterfly	Α	мо	0	Yes	FAI	EC Pi	QR 2Y		
RD-07-1	D-2	2	С	2.000	Ruptdsk	А	S/A	С	No		REPL	5Y		
SE-07-1A	G-1	2	В	2.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y		
SE-07-1B	G-3	2	В	2.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y		
SE-07-2A	G-1	2	В	2.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y		
SE-07-2B	G-3	2	В	2.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y		
SR-07-2	D-2	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y		
V07119	E-6	2	С	24.000	Check	A	S/A	С	No		CV/C CV/PO CV/PO CV/C INSP	CS QR SP SP RF	VR-14 VR-14 VR-14 VR-14	
V07120	E-6	2	С	24.000	Check	A	S/A	С	No		CV/C CV/PO CV/PO CV/C INSP	CS QR SP SP RF	VR-14 VR-14 VR-14 VR-14	
V07129	H-6	2	С	12.000	Check	A	S/A	С	No		CV/O CV/PO	RF QR	RFJ-16 RFJ-16	
V07130	H-7	2	В	12.000	Gate	А	MAN	0	No		EE	QR		
V07143	G-6	2	С	12.000	Check	Α	S/A	С	No		CV/O CV/PO	RF QR	RFJ-16 RFJ-16	

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PROCEDU	RE NO.:				FOF	R PL	JMPS	S ANI	D VA	LVES				52 of 2	236
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P&ID: 81	770-G-0														
SYSTEM	: CON	TAIN	MEN	T SPR	AY (co	ntinu	ed)								
Valve Number	Coord.		Cat.		AY (co Type	ntinu A/P	ed) Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
Valve	T.	[ļ		· · · ·	T	Act.				Exam EE			Remarks	
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Pos.	Ind			Freq		Remarks	/R4
Valve Number V07145	Coord. G-7	CL 2	Cat. B	Size 12.000	Type Gate	A/P A	Act. Type MAN	Pos. O	Ind No		EE	Freq QR		Remarks	/R4 /R4
Valve Number V07145 V07231	Coord. G-7 D-2	CL 2 2	Cat. B C	Size 12.000 2.000	Type Gate Check	A/P A A	Act. Type MAN S/A	Pos. O C	Ind No No		EE CV/O	Freq QR QR		Remarks	

P&ID: 8770-G-088 SH 2 SYSTEM: CONTAINMENT SPRAY

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-07-1A	B-3	2	В	12.000	Gate	A	DO	С	Yes	FO	EO FS PI	QR QR 2Y		
FCV-07-1B	D-3	2	В	12.000	Gate	A	DO	С	Yes	FO	EO FS PI	QR QR 2Y		
LCV-07-11A	G-2	2	A	2.000	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
LCV-07-11B	G-3	2	A	2.000	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y Cl		
MV-07-2A	G-3	2	В	24.000	Butterfly	A	МО	С	Yes	FAI	EO EC Pl	QR QR 2Y		

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4				INSE				•			RAM				
PROCEDURE	NO.:	-			FOR	PUI	MPS	AND	VAL	VES				53 of 2	236
ADM-2	9.01					ST		E PL	ANT						
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P&ID: 877 SYSTEM:				SPRA	Y (con	tinue	d)								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
MV-07-2B	н-з	2	В	24.000	Butterfly	A	мо	с	Yes	FAI	EO EC PI	QR QR 2Y			
MV-07-3A	B-3	2	в	12.000	Gate	A	мо	LO	Yes	FAI	EC Pl	QR 2Y			
MV-07-3B	D-3	2	в	12.000	Gate	А	мо	LO	Yes	FAI	EC Pl	QR 2Y			
SR-07276	E-4	2	AC	0.750	Relief	A	S/A	с	No		SRV SLT-1	10Y Cl			
SR-07277	E-4	2	AC	0.750	Relief	A	S/A	С	No		SRV SLT-1	10Y CI			
SR-07278	G-4	NC	с	0.750	Relief	А	S/A	с	No		SRV	10Y			
V07170	F-3	2	A	3.000	Gate	Р	MAN	LC	No		SLT-1	CI			
V07172	H-2	2	С	24.000	Check	А	S/A	С	No		INSP	RF	VR-16		
V07174	G-2	2	С	24.000	Check	А	S/A	С	No		INSP	RF	VR-16		
V07188	F-4	2	A	3.000	Gate	Ρ	MAN	LC	No		SLT-1	СІ			
V07189	E-5	2	A	3.000	Gate	Р	MAN	LC	No		SLT-1	СІ			
V07192	C-4	2	с	10.000	Check	A	S/A	С	No		INSP	RF	VR-17		
V07193	C-4	2	С	10.000	Check	A	S/A	С	No		INSP	RF	VR-17		
V07206	E-3	2	A	3.000	Gate	Р	MAN	LC	No		SLT-1	СІ			

P&ID: 8770-G-091 SH 1 SYSTEM: MISCELLANEOUS SYSTEMS

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V00101	B-4	2	А	8.000	Gate	Р	MAN	LC	No		SLT-1	CI		
V00139	D-4	2	А	0.375	Globe	Р	MAN	LC	No		SLT-1	СІ		
V00140	E-4	2	Α	1.000	Globe	Р	MAN	LC	No		SLT-1	СІ		
V00143	E-4	2	Α	1.000	Globe	Р	MAN	LC	No		SLT-1	СІ		
V00144	D-4	2	A	0.375	Globe	Р	MAN	LC	No		SLT-1	СІ		

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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-26-1	B-2	2	A	1.000	Giobe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-2	B-2	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-3	B-3	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-4	B-3	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-5	B-3	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-6	B-3	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FSE-27-1	A-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-2	A-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		

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P&ID: 87 SYSTEM:				ous sa		IG (contin	ued)						
Valve Number	Coord.		Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FSE-27-3	A-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-4	A-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-5	В-7	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-6	A-7	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-7	A-7	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-8	B-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-9	B-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI	,	

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d. Cl	L Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
2	A	0.375	Globe	A	so	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
2	AC	0.375	Check	A	S/A	С	No		CV/C CV/O SLT-1	RF QR CI	RFJ-19		
2	AC	0.375	Check	A	S/A	С	No		CV/C CV/O SLT-1	RF QR CI	RFJ-19		
2	С	0.375	Check	А	S/A	с	No		CV/O	QR			
2	С	0.375	Check	А	S/A	С	No		CV/O	QR			
	SCELI rd. Cl rd. 2 rd. 2	rd. CL Cat. 2 A 2 A 2 A 4 2 AC 4 2 AC 4 2 C	CL Cat. Size d. CL Cat. Size d. 2 A 0.375 d. 2 A 0.375 d. 2 A 0.375 d. 2 A 0.375 d. 2 AC 0.375 d. 2 AC 0.375 d. 2 AC 0.375 d. 2 AC 0.375	SCELLANEOUS SAMPLINrd.CLCat.SizeTyperd.2A0.375Globerd.2A0.375Globerd.2A0.375Globerd.2A0.375Checkrd.2AC0.375Checkrd.2AC0.375Checkrd.2AC0.375Check	SCELLANEOUS SAMPLING (rd.CLCat.SizeTypeA/P32A0.375GlobeA32A0.375GlobeA32A0.375GlobeA32A0.375GlobeA42AC0.375CheckA42AC0.375CheckA42C0.375CheckA	SCELLANEOUS SAMPLING (contin TypeA/PAct. Typerd.CLCat.SizeTypeA/PAct. Typea2A0.375GlobeASOa2A0.375GlobeASOa2A0.375GlobeASOa2A0.375CheckASOa2AC0.375CheckAS/Aa2AC0.375CheckAS/Aa2C0.375CheckAS/A	SCELLANEOUS SAMPLING (continued)rd.CLCat.SizeTypeA/PAct. TypeNorm Pos.32A0.375GlobeASOC32A0.375GlobeASOC32A0.375GlobeASOC42A0.375CheckASOC52AC0.375CheckAS/AC62AC0.375CheckAS/AC72AC0.375CheckAS/AC62AC0.375CheckAS/AC	SCELLANEOUS SAMPLING (continued)rd.CLCat.SizeTypeA/PAct. TypeNorm Pos.Rem Ind32A0.375GlobeASOCYes32A0.375GlobeASOCYes32A0.375GlobeASOCYes42A0.375CheckASOCYes52AC0.375CheckAS/ACNo62AC0.375CheckAS/ACNo62AC0.375CheckAS/ACNo62AC0.375CheckAS/ACNo72AC0.375CheckAS/ACNo	SCELLANEOUS SAMPLING (continued)rd.CLCat.SizeTypeA/PAct. TypeNorm Pos.Rem IndFail Mode32A0.375GlobeASOCYesFC32A0.375GlobeASOCYesFC32A0.375GlobeASOCYesFC42A0.375CheckASOCYesFC52AC0.375CheckAS/ACNoImage: Solution of the soluti	SCELLANEOUS SAMPLING (continued)rd.CLCat.SizeTypeA/PAct. TypeNorm Pos.Rem IndFail ModeExam32A0.375GlobeASOCYesFCEC EO FS PI SLT-132A0.375GlobeASOCYesFCEC EO FS PI SLT-142A0.375GlobeASOCYesFCEC EO FS PI SLT-152A0.375GlobeASOCYesFCEC EO FS PI SLT-162AC0.375CheckAS/ACNoCV/C CV/O SLT-162AC0.375CheckAS/ACNoCV/C CV/O SLT-172AC0.375CheckAS/ACNoCV/C CV/O SLT-172AC0.375CheckAS/ACNoCV/C CV/O SLT-172AC0.375CheckAS/ACNoCV/C CV/O SLT-1	A/PA/PA/PNorm Pos.Rem IndFail ModeExamTest Freq32A0.375GlobeASOCYesFCEC EO QR SLT-1QR QR QR QR32A0.375GlobeASOCYesFCEC EO PI SLT-1QR QR QR QR QR QR PI SLT-132A0.375GlobeASOCYesFCEC EO QR QR QR QR QR PI SLT-142A0.375GlobeASOCYesFCEC EO QR QR QR QR QR QR QR QR QR52A0.375GlobeASOCYesFCEC EO QR QR QR QR QR QR QR QR CI62AC0.375CheckAS/ACNoCV/C QR CI-1RF CV/O QR CI62AC0.375CheckAS/ACNoCV/C QR CI-1RF CV/O QR CI-172AC0.375CheckAS/ACNoCV/C QR CI-1RF CV/O QR CI-162AC0.375CheckAS/ACNoCV/C QR CI-1CI62AC0.375CheckAS/ACNoCV/C QR CI-1CI72C0.375Check <t< td=""><td>A.C. Cat. Size Type A/P Act. Type Norm Pos. Rem Ind Fail Mode Exam Test Freq Relief Req. b 2 A 0.375 Globe A SO C Yes FC EC QR EO QR QR PI 2Y CI b 2 A 0.375 Globe A SO C Yes FC EC QR EO QR QR 2Y CI CI SI SI C Yes FC EC QR EO QR QR 2Y CI SI SI</td><td>SCELLANEOUS SAMPLING (continued) rd. CL Cat. Size Type A/P Act. Type Norm Pos. Rem Ind Fail Mode Exam Test Freq Relief Req. Remarks 3 2 A 0.375 Globe A SO C Yes FC EC OR EO OR PI ZY SO C Yes FC EC OR EO OR PI ZY SU SU<!--</td--></td></t<>	A.C. Cat. Size Type A/P Act. Type Norm Pos. Rem Ind Fail Mode Exam Test Freq Relief Req. b 2 A 0.375 Globe A SO C Yes FC EC QR EO QR QR PI 2Y CI b 2 A 0.375 Globe A SO C Yes FC EC QR EO QR QR 2Y CI CI SI SI C Yes FC EC QR EO QR QR 2Y CI SI SI	SCELLANEOUS SAMPLING (continued) rd. CL Cat. Size Type A/P Act. Type Norm Pos. Rem Ind Fail Mode Exam Test Freq Relief Req. Remarks 3 2 A 0.375 Globe A SO C Yes FC EC OR EO OR PI ZY SO C Yes FC EC OR EO OR PI ZY SU SU </td

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			ANE Cat.	OUS S	YSTEM : Type	S A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
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P&ID: 8770-G-096 SH 1A SYSTEM: EDG SYSTEM - DIESEL ENGINE 1A1

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SE-59-1A	G-2	3**	В	2.000	Globe	A	SO	С	No	FC	EC EO FS	QR QR QR		
SH-59161	G-2	3**	В	2.000	Ball	Р	Μ́ΑΝ	LO	Yes		PI	2Y		
SR-59-1A1	D-4	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y		
V59010	B-4	3**	С	0.500	Check	A	S/A	0	No		CV/C	QR		
V59011	B-4	3**	С	0.500	Check	А	S/A	С	No		CV/O	QR		

** Optional Classification - Relief request approval not required, provided for information only.

P&ID: 8770-G-096 SH 1B SYSTEM: EDG SYSTEM - DIESEL ENGINE 1A2

Valve Number	Coord.	CL	Cat.	Size	Туре	AVP	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SR-59-1A2	D-5	3**	с	0.750	Relief	A	so	с	No		SRV	10Y		
V59025	G-4	3**	С	0.500	Check	А	S/A	0	No		CV/C	QR		
V59026	F-4	3**	с	0.500	Check	A	S/A	С	No		CV/O	QR		

** Optional Classification - Relief request approval not required, provided for information only.

REVISION NO).:	PR	OCED	URE TIT	LE:	<u></u>					<u> </u>		P,	AGE	
4				INSE	RVICE						RAM				
PROCEDURE	NO.:	1			FOR	PUI	MPS	AND	VAL	VES				58 of 2	236
ADM-29	0.01				I	т		E PL	ΔΝΤ						
ADIVI-2:	9.01	1													
					UNIT				BLE						
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			40												
P&ID: 877 SYSTEM:				- AIR	START	РКС	5 1A								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
FCV-59-1A1	H-2	3**	в	1.500	Gate	A	AO	с	No	FC	EO	2Y	VR-18		
FCV-59-2A1	H-4	3**	в	1.500	Gate	А	AO	с	No	FC	EO	2Y	VR-18		
FCV-59-3A1	G-4	3**	в	1.500	Gate	A	AO	с	No	FC	EO	2Y	VR-18		
FCV-59-4A1	G-2	3**	В	1.500	Gate	Α	AO	С	No	FC	ΕO	2Y	VR-18		
SE-59-3A	G-2	3**	В	1.500	Globe	А	so	С	No	FC	EO	2Y	VR-18		
SE-59-4A	F-2	3**	В	1.500	Globe	А	so	С	No	FC	EO	2Y	VR-18		
SE-59-5A	G-4	3**	В	1.500	Globe	А	SO	С	No	FC	EO	2Y	VR-18		
SE-59-6A	F-4	3**	В	1.500	Globe	А	so	С	No	FC	EO	2Y	VR-18		
SH59085	D-4	3**	В	2.000	Ball	Ρ	MAN	0	Yes		PI	2Y			
SH59086	D-3	3**	В	2.000	Ball	Ρ	MAN	0	Yes		PI	2Y			
SH59087	D-2	3**	В	2.000	Ball	Ρ	MAN	0	Yes		ΡI	2Y			
SH59088	D-1	3**	в	2.000	Ball	Ρ	MAN	0	Yes		PI	2Y			
SR-59-3A	C-4	3**	С	0.750	Relief	Α	S/A	С	No		SRV	10Y			
SR-59-4A	C-3	3**	С	0.750	Relief	А	S/A	с	No		SRV	10Y			
SR-59-5A	C-2	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y			
SR-59-6A	C-2	3**	С	0.750	Relief	А	S/A	с	No		SRV	10Y			
V59079	D-5	3**	С	1.000	Check	А	S/A	с	No		cv/c	QR			
V59156	D-5	3**	С	1.000	Check	А	S/A	с	No		cv/c	QR			
∨59200	F-1	3**	С	0.375	Check	A	S/A	0	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59201	F-5	3**	C	0.375	Check	A	S/A	0	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		

** Optional Classification - Relief request approval not required, provided for information only.

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REVISION NO) .:	PR	DCED	URE TIT	LE:								PA	AGE
4				INSE	RVICE	E TE	STIN	1G (18	ST) P	ROG	RAM			
PROCEDURE	NO.:	-			FOR	PUI	MPS	AND	VAL	VES				59 of 23
	0.04					<u>эт</u>			A N I T					
ADM-2	9.01						BLE	EPL	ANT		<u> </u>			
P&ID: 877 SYSTEM:					·	Page	36 0	<u>E IAI</u> of 40)						
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
	Coord. G-2	CL 3**	Cat. B	Size 2.000	Type Globe	A/P A					Exam EC EO FS			Remarks
Number							Туре	Pos.	Ind	Mode	EC EO	Freq QR QR		Remarks
Number SE-59-1B	G-2	3**	В	2.000	Globe	A	Type SO	Pos. C	Ind No	Mode	EC EO FS	Freq QR QR QR		Remarks
Number SE-59-1B SH-59164	G-2 G-2	3**	B	2.000 2.000	Globe Ball	A P	Type SO MAN	Pos. C LO	Ind No Yes	Mode	EC EO FS PI	Freq QR QR QR 2Y		Remarks

** Optional Classification - Relief request approval not required, provided for information only.

P&ID: 8770-G-096 SH 2B SYSTEM: EDG SYSTEMS - DIESEL ENGINE 1B2

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SR-59-1B2	D-5	3**	С	0.750	Relief	А	S/A	с	No		SRV	10Y		
V59055	F-4	3**	с	0.500	Check	А	S/A	0	No		CV/O	QR		
V59056	G-4	3**	с	0.500	Check	А	S/A	С	No		CV/C	QR		

** Optional Classification - Relief request approval not required, provided for information only.

REVISION NO	D.:	PR	OCED	URE TI	LE:								PA	GE	
4				INSE	RVIC						RAM				
PROCEDURE	NO.:				FOR	PUI	MPS	AND	VAL	VES				60 of :	236
ADM-2	9.01					ST.	LUC	E PL	ANT						
						TA	BLE	2		_					
					<u>UNIT</u>										
					(F	Page	e 37 (of 40)							
D.01D 077		~ ~ ~ ~	20												
P&ID: 877 SYSTEM:				- AIR	START	РКС	5 1B								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
FCV-59-1B1	G-4	3**	В	1.500	Gate	A	AO	с	No	FC	EO	2Y	VR-18		
FCV-59-2B1	G-2	3**	В	1.500	Gate	A	AO	с	No	FC	EO	2Y	VR-18		
FCV-59-3B1	Н-4	3**	В	1.500	Gate	A	AO	С	No	FC	EO	2Y	VR-18		
FCV-59-4B1	H-2	3**	в	1.500	Gate	A	AO	С	No	FC	EO	2Y	VR-18		
SE-59-3B	H-2	3**	в	1.500	Globe	A	so	С	No	FC	EO	2Y	VR-18		
SE-59-4B	F-2	3**	в	1.500	Globe	A	so	С	No	FC	EO	2Y	VR-18		
SE-59-5B	G-4	3**	в	1.500	Globe	A	so	С	No	FC	EO	2Y	VR-18		
SE-59-6B	F-4	3**	в	1.500	Globe	А	so	С	No	FC	EO	2Y	VR-18		
SH59131	D-4	3**	в	2.000	Ball	Ρ	MAN	0	Yes		PI	2Y			
SH59132	D-3	3**	В	2.000	Ball	Ρ	MAN	0	Yes		PI	2Y			
SH59133	D-2	3**	В	2.000	Ball	Р	MAN	0	Yes		PI	2Y			
SH59134	D-1	3**	В	2.000	Ball	Р	MAN	0	Yes		PI	2Y			
SR-59-3B	C-4	3**	с	0.750	Relief	А	S/A	с	No		SRV	10Y			
SR-59-4B	C-3	3**	С	0.750	Relief	А	S/A	с	No		SRV	10Y			
SR-59-5B	C-2	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y			
SR-59-6B	C-2	3**	С	0.750	Relief	A	S/A	С	No		SRV	10Y			
V59125	D-5	3**	С	1.000	Check	А	S/A	с	No		cv/c	QR			
V59158	D-5	3**	С	1.000	Check	A	S/A	С	No		cv/c	QR			
∨59202	F-1	3**	С	0.375	Check	A	S/A	0	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
∨59203	F-5	3**	с	0.375	Check	A	S/A	0	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		

** Optional Classification - Relief request approval not required, provided for information only.

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REVISION N	0.:	PF	ROCEL	DURE TI	TLE:						_		PA	GE	
4				INSE	ERVICE						RAM				
PROCEDUR	E NO.:				FOR	PUI	MPS	AND	VAL	VES				61 of 3	236
ADM-2	9.01					ST.	LUC		ANT						
P&ID: 877	70-G-87	78			<u>UNIT</u> (F	1 V									
SYSTEM:			VEN	TILATI				DITIC	N	r		.		1	
Vaive Number	Coord.	CL	Cat.	Size	Туре	AVP	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
FCV-25-1	C-2	2	В	48.000	Butterfly	A	PO	с	Yes	FC	EC FS PI	CS CS 2Y			
FCV-25-2	C-3	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-3	C-3	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-4	C-6	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-5	C-7	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-6	C-8	2	В	48.000	Butterfly	А	PO	С	Yes	FC	EC FS PI	CS CS 2Y			
FCV-25-7	C-15	2	A	24.000	Butterfly	A	DO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
FCV-25-8	C-15	2	A	24.000	Butterfly	A	DO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
V-25-12	N-8	2	Α	3.000	Gate	Ρ	MAN	LC	No		SLT-1	СІ			
V-25-14	K-8	2	А	3.000	Gate	Р	MAN	LC	No		SLT-1	CI			
V-25-16	M-8	2	А	3.000	Gate	Ρ	MAN	LC	No		SLT-1	CI			

REVISION N	O .:	PR	OCED	OURE TIT	LE:								PA	AGE
4				INSE	RVICE			•	,		RAM		-	62 of 2
PROCEDURI	E NO.:				FUR	PUI	VIP3	AND	VAL	VES				02 01 2
ADM-2	29.01					ST	LUCI	E PL	ANT					
P&ID: 87	70-G-87	8			<u>UNIT</u> (F	1 V								
CVCTEM.	HEAT	NG.	VEN	TILATI	ON ANI) AIF	R CON	IDITIO	N					
STOTEM.														
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
Valve			<u> </u>		Туре	[Act.	Norm	Rem		Exam CV/C VBT SLT-1		ł	Remarks
Valve Number	Coord.	CL	Cat.	Size	Type Check	AVP	Act. Type	Norm Pos.	Rem Ind		CV/C VBT	Freq CS CS	Req. VR-19 VR-19	Remarks
Valve Number V-25-20	Coord. C-14	CL 2	Cat. AC	Size 24.000	Type Check	A/P A	Act. Type S/A	Norm Pos. C	Rem Ind No		CV/C VBT SLT-1 CV/C VBT	Freq CS CS CI CS CS	Req. VR-19 VR-19 VR-19 VR-19 VR-19	Remarks
Valve Number V-25-20 V-25-21	Coord. C-14 C-14	CL 2 2	Cat. AC AC	Size 24.000 24.000	Type Check Check	A/P A A	Act. Type S/A S/A	Norm Pos. C	Rem Ind No No		CV/C VBT SLT-1 CV/C VBT SLT-1	Freq CS CS CI CS CS CI	Req. VR-19 VR-19 VR-19 VR-19 VR-19	Remarks

P&ID: 8770-G-879 SYSTEM: HEATING, VENTILATION AND AIR CONDITION

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-25-11	H-14	2	в	16.000	Butterfly	A	мо	с	Yes	FAI	EC EO PI	QR QR 2Y		
FCV-25-12	J-14	2	В	16.000	Butterfly	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
FCV-25-13	I-16	2	В	12.000	Butterfly	А	мо	0	Yes	FAI	EO Pl	QR 2Y		
FCV-25-14	E-11	3	В	12.000	Butterfly	А	мо	0	Yes	FAI	EC EO PI	QR QR 2Y		
FCV-25-15	E-11	3	в	12.000	Butterfly	А	МО	0	Yes	FAI	EC EO Pl	QR QR 2Y		
FCV-25-16	E-10	3	В	12.000	Butterfly	A	MO	0	Yes	FAI	EC EO PI	QR QR 2Y		

REVISION NO	D.:	PR	OCED	URE TI	TLE:								PA	GE	
4				INSE				-			RAM			00 - (0	
PROCEDURE	NO.:	1			FOR	PU	MPS	AND	VAL	VES				63 of 2	36
ADM-2	9.01					ST. I	LUCI	E PL	ANT						
		•				• •	BLE								
					UNIT										
					(۲	age	: 40 (of 40)							
P&ID: 877		-													
SYSTEM:	HEATI	NG,	VEN	TILATI	ON ANI		R CON		N (c	ontinue	ed) T			······	
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
FCV-25-17	E-11	3	В	12.000	Butterfly	А	мо	0	Yes	FAI	EC EO Pl	QR QR 2Y			
FCV-25-18	A-10	3	В	6.000	Butterfly	A	мо	0	Yes	FAI	EC Pl	QR 2Y			
FCV-25-19	A-11	3	В	6.000	Butterfly	A	мо	0	Yes	FAI	EC Pl	QR 2Y			
FCV-25-24	B-10	3	В	8.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y			
FCV-25-25	B-11	3	В	8.000	Butterfly	A	мо	0	Yes	FAI	EC Pl	QR 2Y			
	J-14	2	С	8.000	Check	А	S/A	С	No		CV/PO CV/O	QR RF			
V-25-23	5-14														

END OF TABLE 2

REVISION NO .:	PROCEDURE TITLE:	PAGE
4	INSERVICE TESTING (IST) PROGRAM	64 -6 226
PROCEDURE NO.:	FOR PUMPS AND VALVES	64 of 236
ADM-29.01	ST. LUCIE PLANT	
	TABLE 3	
	UNIT 2 VALVE TABLE (Page 1 of 45)	
	LEGEND	
VALVE NUMBER	FPL alpha-numerical designator for the subject valve	
COORD	Coordinate location of the valve on the designated drawing	
CL	ISI classification of the valve as per the respective ISI bour	idary drawing
CAT	Valve category per Part 10, Paragraph 1.4	
SIZE	Valve nominal size (NPS) in inches	
ТҮРЕ	Valve type	
(A/P)	Active (A) or Passive (P) determination for the valve	
ACT. TYPE	Valve actuator type as follows:	
AO	Air-operated	
DO	Diaphragm-operated (Air)	
HYD	Hydraulic-operated	
MO	Electric motor-operated	
MAN	Manual valve	
PO	Piston-operated (Air)	
S/A	Self-actuated	
SO	Solenoid-operated	
NORM POS.	Designates the normal position of the valve during plant op power	eration at
REM IND	Notes if a valve has remote position indication	
FAIL MODE	Identifies the failure mode (open or closed) for a valve. FAI- valve fails as-is.	
EXAM	Identifies the test requirements for a valve as follows:	
CV/C	Check valve exercise to closed position	
CV/O	Check valve full-stroke exercise to open position	
CV/PO	Check valve partial-stroke exercise to open position	
EC	Exercise to closed position. For all category A or B power- valves stroke times will be measured unless excluded by an relief request.	

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REVISION NO .:	PROCEDURE TITLE:	PAGE
4	INSERVICE TESTING (IST) PROGRAM	65 of 236
PROCEDURE NO.:	FOR PUMPS AND VALVES	05 01 230
ADM-29.01	ST. LUCIE PLANT	
	TABLE 3UNIT 2 VALVE TABLE(Page 2 of 45)	
	LEGEND (continued)	
EXAM (continued)	
EE	Exercise valve to verify proper operation and stroking with measurements. Requires observation of system paramete observation of valve operation.	
EO	Exercise to open position. For all category A or B power-or valves stroke times will be measured unless excluded by a relief request.	
FS	Fail-safe test	
INSP	Disassembly and inspection of check valves	
Pl	Position indication verification	
SLT-1	Seat leakrate test per 10 CFR 50, Appendix J	
SLT-2	Seat leakrate test for pressure isolation valves	
SP	Special test requirement - see relief request	
SRV	Set point check for safety/relief valves	
VBT	Set point check for vacuum breaker valves	
TEST FREQ	The required test interval as follows:	
QR	Quarterly (during plant operation)	
CI	Determined by Containment Leakage Rate Testing Program accordance with 10 CFR 50, Appendix J, Option B.	n in
CS	Cold shutdown as defined by Technical Specifications	
RF	Each reactor refueling outage (cycle)	
SP	Special test frequency - refer to relief request for details	
6M	Every six months	
18M	Every 18 months	
2Y	Every 2 years	
5Y	Every 5 years per Part 1, Paragraph 1.3.3.1(b) or 1.3.4.2	
10Y	Every 10 years per Part 1, Paragraph 1.3.41(b)	
RELIEF REQ	Refers to the specific relief request associated with the adj requirement. (See Appendix E)	acent test

	D.:	PRC	DCEDU											PAGE	
4				INSE	RVIC FOF			NG (I S ANE				1		66 of 2	230
ROCEDURE															
ADM-2	9.01								ANT	<u> </u>					
					UNIT		ABLI /ALV	E 3 / <u>E TA</u>	BLE						
								of 45)							
P&ID: 299 SYSTEM:															
Valve Number	Coord.	CL	Cat.		Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V1460	C-5	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y			
V1461	D-5	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y			
V1462	D-5	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y			
V1463	E-5	2	В	1.000	Globe	Α	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y			
V1464	D-6	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y			
V1465	D-6	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS PI	CS CS CS 2Y			
V1466	E-6	2	В	1.000	Globe	A	SO	LC	Yes	FC	EC EO FS Pl	CS CS CS 2Y			

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4 PROCEDURE	E NO.:	-		INSE	RVIC FOR			•		PROC _VES		1		67 of	236
ADM-2	9.01					ST.	LUC			-					
P&ID: 299 SYSTEM:				ANT		2 \		E 3 / <u>E TA</u> of 45)							
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V1474	D-4	1	В	3.000	Globe	A	SO	с	Yes	FC	EO FS PI	CS CS 2Y			
V1475	F-4	1	В	3.000	Globe	A	SO	С	Yes	FC	EO FS PI	CS CS 2Y			
V1476	D-5	1	В	3.000	Gate	А	мо	0	Yes	FAI	EC Pl	QR 2Y			
V1477	F-5	1	В	3.000	Gate	А	MO	0	Yes	FAI	EC Pl	QR 2Y			

P&ID: 2998-G-078 SH 109 SYSTEM: REACTOR COOLANT

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V1200	C-4	1	с	3.000	Safety	А	S/A	С	No		SRV	5Y		
V1201	C-4	1	с	3.000	Safety	А	S/A	С	No		SRV	5Y		
V1202	C-4	1	с	3.000	Safety	А	S/A	С	No		SRV	5Y		

P&ID: 2998-G-078 SH 120 SYSTEM: CHEMICAL AND VOLUME CONTROL

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
∨2522	C-2	2	A	2.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI		

REVISION N	0.:	PR	OCED	F	PAGE										
4 PROCEDUR				INS				'ING (S AN)			GRAN S	1		68 of :	236
ADM-2	29.01	ST. LUCIE PLANT													
							TABL								
					UNI			VE TA		E					
						(Pa	ige 5	of 45))						
P&ID: 29 SYSTEM:					UME (TROL						•		
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
SR-02123	C-2	2	AC	1.000	Relief	A	S/A	с	No		SLT-1 SRV	CI 10Y			
V2115	E-4	3	С	4.000	Relief	А	S/A	с	No		SRV	10Y			
V2118	E-5	2	C	4.000	Check	A	S/A	0	No		CV/C CV/O	CS QR			
V2191	E-6	2	С	3.000	Check	A	S/A	с	No		CV/C CV/O CV/PO	QR RF CS	RFJ-02 RFJ-02		/R4
V2501	D-5	2	В	4.000	Gate	A	мо	0	Yes	FAI	EC EO Pl	CS CS 2Y			
V2504	F-6	2	В	3.000	Gate	А	мо	С	Yes	FAI	EC EO Pl	QR QR 2Y			
V2505	C-3	2	A	0.750	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2507	B-2	2	В	0.750	Gate	Р	so	С	Yes	FC	ΡI	2Y			/R4
V2524	C-2	2	A	0.750	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2525	F-4	3	В	4.000	Gate	A	мо	С	Yes	FAI	EC PI	QR 2Y			
V2526	E-6	2	С	4.000	Check	A	S/A	С	No		CV/O CV/PO	RF CS	RFJ-02 RFJ-02		
V2621	C-4	3	в	3.000	Gate	А	MAN	0	No	FAI	EE	QR			
V2674	D-5	3	С	4.000	Check	A	S/A	0	No		CV/O	QR			

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4 PROCEDURE	NO.:	_		INSE	FOF			69 of 236								
ADM-2	9.01					ST.										
P&ID: 299		8 SH	1218	3		T. Г 2 \	ABL /AL\		BLE							
Valve Number	CHEM Coord.	CL	AND Cat.	T	Type	A/P	ROL Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	1	Remarks		
FCV-2210Y	F-6	2	В	1.000	Globe	A	DO	с	Yes	FC	EC FS PI	QR QR 2Y				
V2177	H-5	2	с	3.000	Check	А	S/A	С	No		CV/O CV/PO	RF CS	RFJ-02 RFJ-02			
V2190	G-2	2	С	3.000	Check	А	S/A	С	No		CV/O CV/PO	RF CS	RFJ-02 RFJ-02	4 1		
V2443	G-4	2	С	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO	QR RF QR	RFJ-02 RFJ-02			
V2444	F-4	2	С	3.000	Check	A	S/A	с	No		CV/C CV/O CV/PO	QR RF QR	RFJ-02 RFJ-02			
V2508	F-3	2	В	3.000	Gate	A	мо	с	Yes	FAI	EO Pl	QR 2Y				
V2509	F-2	2	В	3.000	Gate	А	мо	С	Yes	FAI	EO PI	QR 2Y				
V2514	H-5	2	В	3.000	Gate	А	МО	С	Yes	FAI	EO PI	QR 2Y				
V2650	H-4	2	В	1.000	Globe	A	DO	0	Yes	FC	EC FS PI	QR QR 2Y				
V2651	D-4	3	в	1.000	Globe	Α	DO	0	Yes	FC	EC FS	QR QR				

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P&ID: 299 SYSTEM:					UME (CON	TROL								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	•
SE-02-01	D-6	1	В	2.000	Globe	A	so	0	Yes	FO	EC	QR			
											EO FS PI	QR QR 2Y			
SE-02-02	C-6	1	В	2.000	Globe	А	so	0	Yes	FO	EC	QR			
											EO FS PI	QR QR 2Y			
SE-02-03	E-6	1	в	2.000	Globe	A	so	LC	Yes	FC	EC	CS	• •		
											EO FS PI	CS CS 2Y			
SE-02-04	E-6	1	В	2.000	Globe	А	SO	LC	Yes	FC	EC	cs			
											EO FS	CS CS			
1/0/07				0.000		•	0/1		N 1.		PI	2Y			
V2167	B-3	2	С	2.000	Check	A	S/A	С	No		CV/C CV/O	QR QR			
V2168	E-3	2	с	2.000	Check	A	S/A	С	No		CV/C CV/O	QR QR			
V2169	G-3	2	С	2.000	Check	A	S/A	с	No		CV/C CV/O	QR QR			
V2185	C-5	2	В	2.500	Gate	Р	мо	с	Yes	FAI	PI	2Y			
V2318	D-2	2	С	0.500		A	S/A	С	No		SRV	10Y			
V2321	F-2	2	С		Relief	A	S/A	С	No		SRV	10Y			
V2324	F-3	2	C C	1.500		A 	S/A	C C	No		SRV	10Y			
V2325 V2326	D-3 B-3	2	с с	1.500 1.500	Relief Relief	A A	S/A S/A	с с	No No		SRV SRV	10Y 10Y			
V2320	с-3	2	В	2	Gate	A	MAN	LO	No		EC	QR			
V2340	A-3	2	B	2	Gate		MAN	c	No		EO	QR			
V2431	E-6		С			A	S/A	c	No		CV/O	CS			
V2432	D-6	1	c	2.000		A	S/A	0	No		CV/PO	QR			
		2	В	2	Check	A	S/A	С	No		CV/0 CV/0	CS CS			
V2440	A-3											00		· 1	

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4 PROCEDURI				INS						PRO	GRAN S	1		71 of	236
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						(Ра	ge 8	of 45)						
P&ID: 29 SYSTEM:					UME (CON	TROL	(cont	inued)					
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	1
V2433	C-6	1	С	2.000	Check	А	S/A	0	No		CV/O	QR			
V2435	C-6	1	С	2.000	Check	А	S/A	С	No		CV/O	QR			/R4
V2462	B-5	2	С	2.000	Check	А	S/A	0	No		CV/O	QR			
V2515	G-7	1	В	2.000	Globe	A	DO	0	Yes	FC	EC FS PI	CS CS 2Y			
V2516	G-6	1	A	2.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
V2523	B-5	2	В	2.000	Globe	Α	DO	LO	Yes	FO	EC PI	CS 2Y			
V2553	C-3	2	В	2.000	Globe	А	МО	0	Yes	FAI	EC PI	QR 2Y			
V2554	E-3	2	В	2.000	Globe	A	мо	0	Yes	FAI	EC Pl	QR 2Y			
V2555	H-3	2	В	2.000	Globe	A	мо	0	Yes	FAI	EC Pl	QR 2Y			
V2588	B-1	2	с	0.500	Relief	А	S/A	С	No		SRV	10Y			
∨2598	D-5	2	В	2.000	Gate	A	мо	0	Yes	FAI	PI	2Y			

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4	ł			INS	ERVIC						GRAM			70 of '	226
PROCEDUR	E NO.:				FOR	PU	MPS	AND	VAL	VES				72 of 3	230
ADM-	29.01					ST.	LUC	IE PL	<u>ANT</u>						
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					<u>UNIT</u>			E 1A of 45)							
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P&ID: 29 SYSTEM:									-		.				
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3102	B-3	2	С	2.000	Check	A	S/A	С	No		CV/PO INSP	QR RF	VR-21 VR-21		
V3103	E-4	2	С	2.000	Check	A	S/A	с	No		CV/PO INSP	QR RF	VR-21 VR-21		
V3401	B-2	2	С	6.000	Check	A	S/A	С	No		CV/PO CV/O	QR RF	RFJ-04 RFJ-04		
V3410	F-2	2	С	8.000	Check	A	S/A	с	No		CV/PO CV/O	QR RF	RFJ-04 RFJ-04		
V3412	E-5	2	С	1.000	Relief	Α	S/A	С	No		SRV	10Y	ļ		
∨3414	F-4	2	C	3.000	S/Check	A	S/A	С	No		CV/C CV/O CV/PO	QR RF CS	RFJ-05 RFJ-05		
V3417	B-5	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
V3427	B-4	2	С	3.000	S/Check	A	S/A	с	No		CV/C CV/O CV/PO	QR RF CS	RFJ-05 RFJ-05		
V3519	B-5	2	в	2	Gate	A	MAN	С	No		EO	QR			/R4
V3522	G-4	2	С	3.000	Check	А	S/A	С	No		CV/O CV/PO	RF CS	RFJ-09 RFJ-09		
V3523	G-7	2	В	3.000	Globe	A	мо	LC	Yes	FAI	EC EO Pl	QR QR 2Y			
V3540	C-7	2	в	3.000	Globe	A	MO	LC	Yes	FAI	EC EO PI	QR QR 2Y			
V3547	C-4	2	С	3.000	Check	A	S/A	с	No		CV/C CV/O CV/PO	RF RF CS	RFJ-09 RFJ-09 RFJ-09		/R4
V3550	C-6	, 2 ,	В	3.000	Globe	A	МО	LC	Yes	FAI	EC EO PI	QR QR 2Y			
V3551	G-6	2	В	3.000	Globe	A	МО	LC	Yes	FAI	EC EO Pl	QR QR 2Y			
V3570	E-6	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
										FAI	EC EO PI	QR QR 2Y			

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4	1			INSE	ERVIC	ETE	ESTI	NG (I	ST) F	PROG	RAM				
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ADM-	29.01					ST.	LUC	IE PL	<u>ANT</u>						
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P&ID: 29 SYSTEM:					(continu	ued)								-	
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3654	F-4	2	В	6.000	Gate	A	мо	LO	Yes	FAI	EC Pl	QR 2Y			
V3656	B-4	2	В	6.000	Gate	A	мо	LO	Yes	FAI	EC Pl	QR 2Y			

P&ID: 2998-G-078 SH 130B SYSTEM: SAFETY INJECTION

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-3301	F-5	2	В	10.000	Butterfly	A	мо	LO	Yes	FAI	EC Pl	QR 2Y		
FCV-3306	E-5	2	В	10.000	Butterfly	A	мо	LO	Yes	FAI	EC PI	QR 2Y		
HCV-3512	F-6	2	в	10.000	Butterfly	А	мо	LC	Yes	FAI	EO Pl	QR 2Y		
HCV-3657	E- 5	2	В	10.000	Butterfly	А	мо	LC	Yes	FAI	EO Pl	QR 2Y		
SE-03-2A	B-7	2	A	2.000	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
SE-03-2B	C-7	2	A	2.000	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
SR-07-1A	E-1	2	С	0.750	Relief	А	S/A	С	No		SRV	10Y		
SR-07-1B	G-1	2	С	0.750	Relief	А	S/A	с	No		SRV	10Y		
V07000	E-1	2	С	14.000	Check	Α	S/A	С	No		CV/O CV/PO	RF QR	RFJ-06 RFJ-06	

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PROCEDUR		_						AND						74 of 2	236
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	20.01						ABLE						i		
					UNIT										
					(Page	e 11	of 45)						
P&ID: 29 SYSTEM:					continu	ied)									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V07001	F-1	2	с	14.000	Check	A	S/A	С	No		CV/O CV/PO	RF QR	RFJ-06 RFJ-06		1
V3101	B-6	3	С	2.000	Check	A	S/A	С	No		cv/o	cs			
V3104	F-3	2	С	2.000	Check	A	S/A	С	No		CV/C CV/PO CV/O	QR QR RF	RFJ-07 RFJ-07		
V3105	F-3	2	С	2.000	Check	A	S/A	с	No		CV/C CV/PO CV/O	QR QR RF	RFJ-07 RFJ-07		
V3106	E-4	2	с	10.000	Check	A	S/A	с	No		CV/O CV/PO	CS QR			
V3107	F-4	2	с	10.000	Check	A	S/A	с	No		CV/O CV/PO	CS QR			
V3201	B-6	3	в	2.000	Globe	Α	MAN	с	No	FAI	EE	QR			
V3205	E-3	2	В	2	Globe	A	MAN	0	No	FAI	EC	QR			1
V3407	B-6	3	С	0.500	Relief	A	S/A	С	No		SRV	10Y			
V3430	C-3	2	С	1.000	Relief	A	S/A	С	No		SRV	10Y			
V3431	A-3	2	С	1.000	Relief	A	S/A	С	No		SRV	10Y			
V3432	F-1	2	В	14.000	Gate	A	мо	LO	Yes	FAI	EC PI	QR 2Y			
V3439	D-7	2	С	1.000	Relief	Α	S/A	С	No		SRV	10Y			
V3444	E-1	2	В	14.000		A	MO	LO	Yes	FAI	EC Pl	QR 2Y			
V3456	C-5	2	В	10.000		Α	мо	LC	Yes	FAI	EO Pl	QR 2Y			
V3457	D-6	2	В	10.000		A	мо	LC	Yes	FAI	EO Pl	QR 2Y			
V3463	B-6	2	A	2.000	Gate	A	MAN	LC	No		EE SLT-1	QR CI			
V3466	A-7	3	С	1.500	Relief	A	S/A	С	No		SRV	10Y			
V3495	B-4	2	В	6.000	Globe	A	SO	LO	Yes	FC	EC FS PI	QR QR 2Y			

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P&ID: 299 SYSTEM:					continu	ued)				-					
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
∨3496	B-3	2	В	6.000	Globe	A	so	LO	Yes	FC	EC FS PI	QR QR 2Y			
V3507	F-7	2	С	1.000	Relief	A	S/A	С	No		SRV	10Y			
V3513	C-6	2	С	2.000	Relief	A	S/A	С	No		SRV	10Y			
V3517	B-2	2	В	2.000	Gate	A	мо	LC	Yes	FAI	EO Pl	QR 2Y			
V3658	D-2	2	В	12.000	Gate	A	мо	LC	Yes	FAI	EO Pl	QR 2Y			
V3659	C-4	2	В	3.000	Gate	А	MO	LO	Yes	FAI	EC Pl	QR 2Y			
V3660	C-3	2	В	3.000	Gate	A	МО	LO	Yes	FAI	EC Pl	QR 2Y			
V3661	B-7	3	В	1.000	Gate	Р	DO	С	Yes	FC	PI	2Y			
	F-3	2	В	2	Globe	A	Μ́ΑΝ	0	No	FAI	EC	QR			/R
V3676		2	с	2.000	Relief	А	S/A	С	No		SRV	10Y			

SYSTEM: SAFETY INJECTION

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-3615	A-2	2	в	6.000	Globe	A	МО	С	Yes	FAI	EC EO Pl	QR QR 2Y		
HCV-3616	B-2	2	В	2.000	Globe	A	MO	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3617	B-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3625	C-2	2	В	6.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3626	D-2	2	В	2.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
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P&ID: 299					(1	2 V Page		= 3 <u>E TA</u> of 45]						
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Number	Coord.		Cat.	Size	Туре	AVP	Туре	Pos.	Ind	Mode	<u> </u>	Freq	Req.	
HCV-3627	D-3	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3635	E-2	2	В	6.000	Globe	A	MO	с	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3636	F-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO Pi	QR QR 2Y		
HCV-3637	F-2	2	В	2.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3645	G-2	2	В	6.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3646	H-2	2	В	2.000	Globe	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
HCV-3647	H-2	2	В	2.000	Globe	A	MO	С	Yes	FAI	EC EO PI	QR QR 2Y		
V3113	B-3	2	С	2.000	Check	А	S/A	С	No		CV/O CV/PO	RF SP	RFJ-08 RFJ-08	
V3114	A-3	2	С	6.000	Check	A	S/A	С	No		CV/C CV/O	CS CS		
V3124	C-3	2	с	6.000	Check	A	S/A	с	No		CV/C CV/O	CS CS		
V3133	F-3	2	с	2.000	Check	A	S/A	С	No		CV/O CV/PO	RF SP	RFJ-08 RFJ-08	
V3134	E-3	2	С	6.000	Check	A	S/A	С	No		CV/C CV/O	CS CS		
V3143	H-3	2	С	2.000	Check	A	S/A	С	No		CV/O CV/PO	RF SP	RFJ-08 RFJ-08	
V3144	G-3	2	с	6.000	Check	A	S/A	С	No		CV/C CV/O	CS CS		
V3468	D-2	2	с	2.000	Relief	A	S/A	С	No		SRV	10Y		

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ADM-2	29.01					ST.	LUC	IE PL	ANT					
					<u>UNIT</u>	2 V								
P&ID: 299 SYSTEM:				TION (· ·	C		·						
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V3469	D-6	1	С	0.750	Relief	A	S/A	С	No		SRV	5Y		
V3480	D-7	1	A	10.000	Gate	A	MO	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y 2Y		
V3481	D-6	1	A	10.000	Gate	A	мо	LC	Yes	FAI	EO EC PI SLT-2	CS CS 2Y 2Y		
V3482	D-6	1	с	0.750	Relief	A	S/A	С	No		SRV	5Y		
V3483	D-2	2	с	2.000	Relief	А	S/A	С	No		SRV	10Y		
∨3524	B-5	1	AC	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF CS 2Y	VR-04 RFJ-10 RFJ-10	
V3525	B-6	1	AC	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF CS 2Y	VR-04 RFJ-10 RFJ-10	
V3526	G-5	1	AC	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF CS 2Y	VR-04 RFJ-10 RFJ-10	
V3527	G-6	1	AC	3.000	Check	A	S/A	С	No		CV/C CV/O CV/PO SLT-2	SP RF CS 2Y	VR-04 RFJ-10 RFJ-10	
V3536	D-2	2	В	4.000	Globe	Α	мо	LC	Yes	FAI	EC Pl	QR 2Y		
V3539	F-2	2	В	4.000	Globe	А	мо	LC	Yes	FAI	EC Pi	QR 2Y		
V3545	D-6	1	В	10.000	Gate	Р	мо	LO	Yes	FAI	PI	2Y		
V3571	G-6	1	В	1.000	Globe	A	DO	с	Yes	FC	EC FS PI	QR QR 2Y		

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ADM-2	9.01					ST.	LUC	IE PL	ANT						
	, 				UNIT (2 V									
P&ID: 299 SYSTEM:				TION (continu	ıed)									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3572	C-6	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
V3651	E-5	1	A	10.000	Gate	A	МО	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y 2Y			
V3652	E-7	1	A	10.000	Gate	A	мо	LC	Yes	FAI	EC EO PI SLT-2	CS CS 2Y 2Y			
V3664	D-3	2	В	10.000	Gate	А	мо	LC	Yes	FAI	EO PI	QR 2Y			
V3665	E-4	2	в	10.000	Gate	A	мо	LC	Yes	FAI	EO PI	QR 2Y			
V3666	D-4	2	с	6.000	Relief	Α	S/A	С	No		SRV	10Y			
V3667	D-4	2	с	6.000	Relief	A	S/A	с	No		SRV	10Y			
V3766	C-3	2	с	2.000	Check	А	S/A	С	No		CV/O CV/PO	RF SP	RFJ-08 RFJ-08		

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4				INSE	RVIC						GRAM				
PROCEDURE	E NO.:	-			FOR	PU	MPS	AND	VAL	VES				79 of 2	236
ADM-2	9.01					ST.	LUC	IE PL	ANT						
							ABLE						•	<u> </u>	
					<u>UNIT</u>										
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P&ID: 299	98-G-07	'8 SH	132												
SYSTEM:				TION											
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
HCV-3618	D-5	1	в	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
HCV-3628	D-2	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
HCV-3638	H-2	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
HCV-3648	H-5	1	В	1.000	Globe	A	DO	С	Yes	FC	EC FS Pl	QR QR 2Y			
SE-03-1A	C-3	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
SE-03-1B	C-6	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
SE-03-1C	G-3	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
SE-03-1D	G-6	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
V03002	C-5	3	с	1.000	Check	A	S/A	с	No		CV/O	CS			
V03003	G-2	3	с	1.000	Check	A	S/A	с	No		CV/O	cs			
V03004	C-2	3	с	1.000	Check	A	S/A	с	No		CV/O	cs			
V03005	G-5	3	с	1.000	Check	A	S/A	с	No		CV/O	cs			
V3211	A-6	2	с	1.500	Relief	A	S/A	с	No		SRV	10Y			

REVISION N	0.:	PR	OCED	URE TIT	LE:								P	AGE
4				INSE	RVIC						RAM			
ROCEDUR	E NO.:							AND						80 of 23
ADM-2	29.01					ST.	LUC	IE PL	<u>ANT</u>					
		-					ABLE							
								E TA of 45						
					(•	age		0, 40,	,					
P&ID: 299 SYSTEM:					continu	ied)								
Valve Number	Coord.	CL	Cat.		Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V3215	C-6	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-05 VR-05	1 i
V3217	D-7	1	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-06 VR-06	
V3221	A-3	2	с	1.500	Relief	А	S/A	С	No		SRV	10Y		
V3225	C-3	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-05 VR-05	
V3227	D-4	1	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-06 VR-06	
V3231	E-3	2	с	1.500	Relief	А	S/A	С	No		SRV	10Y		
V3235	G-3	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-05 VR-05	
V3237	H-4	1	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-06 VR-06	
V3241	E-6	2	С	1.500	Relief	А	S/A	с	No		SRV	10Y		
V3245	G-6	2	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-05 VR-05	

EVISION N		PR	OCED	URE TIT									P	AGE	
4 ROCEDURI		-		INSE	FOR			NG (I AND			GRAM			81 of 2	236
ADM-2	29.01					ST.	LUC	IE PL	<u>ANT</u>						
							ABLE								
								ETA							
					()	Jage	e 18	of 45)						
P&ID: 299 System:					(continu	ied)									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V3247	H-7	1	AC	12.000	Check	A	S/A	С	No		CV/C CV/PO CV/O SLT-2	SP CS RF 2Y	VR-04 VR-06 VR-06		
V3258	D-3	1	AC	6.000	Check	А	S/A	С	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04		
V3259	D-6	1	AC	6.000	Check	A	S/A	С	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04		
V3260	H-3	1	AC	6.000	Check	A	S/A	С	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04		
V3261	H-6	1	AC	6.000	Check	A	S/A	с	No		CV/C CV/O SLT-2	SP CS 2Y	VR-04		
V3611	C-6	2	В	1.000	Globe	A	DO	С	Yes	FC	EC FS PI	QR QR 2Y			
V3614	C-6	1	В	12.000	Gate	Α	мо	LO	Yes	FAI	EC Pi	CS 2Y			
V3621	C-3	2	В	1.000	Globe	А	DO	с	Yes	FC	EC FS PI	QR QR 2Y			
V3624	C-3	1	В	12.000	Gate	А	мо	LO	Yes	FAI	EC PI	CS 2Y			
V3631	G-3	2	В	1.000	Globe	A	DO	С	Yes	FC	EC FS Pl	QR QR 2Y			
V3634	G-3	1	В	12.000	Gate	A	мо	LO	Yes	FAI	EC PI	CS 2Y			

EVISION N				URE TIT	RVIC	ЕТЕ	ESTI	NG (I	ST) F	ROG	RAM			AGE
ROCEDUR								AND					a na a na	82 of 23
ADM-2	29.01					ST.	LUC	IE PL	ANT					
P&ID: 299 SYSTEM:						∑ 2 ∨ ⊃age								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V3641	G-6	2	В	1.000	Globe	Α	DO	С	Yes	FC	EC FS PI	QR QR 2Y		
V3644	G-6	1	В	12.000	Gate	A	мо	LO	Yes	FAI	EC PI	CS 2Y		
V3733	B-5	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V3734	B-5	2	в	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		
∨3735	B-2	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V3736	B-2	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V3737	E-2	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V3738	F-2	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		
V3739	E-5	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS Pl	CS CS CS 2Y		
V3740	F-5	2	В	1.000	Globe	A	SO	С	Yes	FC	EC EO FS PI	CS CS CS 2Y		

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EVISION NO	J.:	PR	DCED	URE TIT									- F A	AGE	
4		_		INSE			ESTII MPS	NG (I: AND	ST) F VAI	PROG VES	GRAM			83 of 2	236
ROCEDURE														00 01 2	_00
ADM-2	9.01							IE PL	ANT						
					UNIT		ABLE AI V		BLE						
								of 45)							
P&ID: 299			153												
Valve	Coord.	CL	Cat.	Size	Туре	A/P	Act.	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
Number SE-05-1A	B-2	2	A	0.375	Globe	A	Type SO	C	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
SE-05-1B	C-2	2	A	0.375	Globe	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
SE-05-1C	E-2	2	A	0.375	Globe	А	so	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
SE-05-1D	G-2	2	A	0.375	Globe	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
SE-05-1E	B-4	2	A	0.375	Globe	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y Cl			
V5200	C-3	2	A	0.375	Globe	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
V5201	D-3	2	A	0.375	Globe	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
V5202	F-3	2	A	0.375	Globe	A	SO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			

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R	EVISION NO 4	.:	PRO	CEDU	RE TITLI	E: RVICE FOR		STIN	IG (IS AND	T) P VAL	ROGI /ES	RAM			84 of 2	36
P	ROCEDURE	NO.:														
	ADM-29	9.01					<u>ST. I</u>		E PL/	ANT						
F	P&ID: 299	8-G-07	B SH	153		·	2 V.	BLE ALVI 21 0		<u>3LE</u>						
5	Valve Number	SAMPI Coord.	LING CL	(cor Cat.	Size) Type	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
	V5203	C-4	2	A	0.375	Globe	A	AO	с	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
	V5204	D-4	2	A	0.375	Globe	A	AO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			
	∨5205	F-4	2	A	0.375	Globe	A	AO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI			

P&ID: 2998-G-078 SH 160A SYSTEM: WASTE MANAGEMENT

STOLEM														
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V6341	C-3	2	A	3.000	Diaph	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V6342	G-4	2	A	3.000	Diaph	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		

	0.:	PR	OCED	URE TIT	LE:								P.	AGE:
4				INSE	RVIC	ΕTE	ESTI	NG (I	ST) I	PROC	GRAM			
PROCEDUR	E NO.:	-			FOR	PU	MPS	AND	VÁL	VES				85 of 2
ADM-2	29.01					ST.	LUC	IE PL	.ANT					
						T/	ABLE	Ξ3			· · · · ·		•	
								E TA						
					(Page	e 22	of 45)					
P&ID: 29	98-G-07	18 54	163	Δ										
SYSTEM:				-	T									
				-	Type	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SYSTEM: Valve	WAST	EMA	NAG	EMEN		A/P A					Exam EC FS PI SLT-1			Remarks

P&ID: 2998-G-078 SH 163B SYSTEM: WASTE MANAGEMENT

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
¶ ₁ V6741	D-4	2	A	1.000	Globe	A	AO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
V6792	D-3	2	AC	1.000	Check	A	S/A	с	No		CV/C SLT-1	RF CI	RFJ-25	

P&ID: 2998-G-079 SH 1 SYSTEM: MAIN STEAM

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-08-1A	C-6	2	В	34.000	Globe	A	PO	0	Yes	FC	EC FS PI	CS CS 2Y		
HCV-08-1B	E-6	2	В	34.000	Globe	A	PO	0	Yes	FC	EC FS PI	CS CS 2Y		
MV-08-12	G-4	2	В	4.000	Gate	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-08-13	G-4	2	В	4.000	Gate	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		

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REVISION N	0.:	PR	OCED	URE TI	FLE:								P.	AGE
4 PROCEDUR				INSE	FOR			NG (I AND			GRAM			86 of 236
ADM-2	29.01					ST.	LUC	IE PL		•				
						2 \		E 3 / <u>E TA</u> of 45						
P&ID: 299 SYSTEM:				continu	ued)									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-08-14	B-4	2	в	8.000	Gate	Р	мо	LO	Yes	FAI	EC PI	QR 2Y		
MV-08-15	B-4	2	В	8.000	Gate	Р	мо	LO	Yes	FAI	EC Pl	QR 2Y		
MV-08-16	E-4	2	В	8.000	Gate	Р	мо	LO	Yes	FAI	EC Pl	QR 2Y		
MV-08-17	E-4	2	В	8.000	Gate	Р	мо	LO	Yes	FAI	EC PI	QR 2Y		
MV-08-18A	A-4	2	В	10.000	Angle	A	мо	с	Yes	FAI	EC EO PI	QR QR 2Y		
MV-08-18B	D-4	2	В	10.000	Angle	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-08-19A	A-4	2	В	10.000	Angle	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-08-19B	D-4	2	В	10.000	Angle	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-08-1A	C-6	2	в	3.000	Globe	А	мо	С	Yes	FAI	EC PI	CS 2Y		
MV-08-1B	E-6	2	в	3.000	Globe	Α	МО	С	Yes	FAI	EC Pl	CS 2Y		
MV-08-3	G-6	2	в	4.000	Globe	А	мо	LO	Yes	FAI	EO Pl	QR 2Y		
SE-08-1	H-4	2	В	0.750	Globe	Α	SO	0	Yes	FO	EC PI	QR 2Y		
SE-08-2	H-4	2	В	0.750	Globe	A	so	0	Yes	FO	EC PI	QR 2Y		

EVISION N	0.:	PRO	CED	JRE TI	TLE:								P	AGE:	
4				INSE							GRAM				
ROCEDUR	E NO.:	-			FOR	PU	MPS	AND	VAL	.VES				87 of	236
ADM-2	0.01					ст		IE PL	ΔΝΙΤ						
	9.01			t			ABLI				· · -		<u> </u>		
					UNIT			E TA	BLE						
					(Pag	e 24	of 45)						
281D: 29	28-6-07	a ch	1												
SYSTEM:				continu	ued)										
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remark s	
V08130	G-4	2	С	4.000	Check	A	S/A	0	No		CV/C CV/O CV/PO	INSP CS QR	VR-08		/R
V08163	G-4	3	С	4.000	Check	A	S/A	0	No		CV/C CV/O CV/PO	INSP CS QR	VR-08		/R
V8201	B-5	2	С	6.000	Safety	А	S/A	0	No		SRV	5Y			
V8202	B-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8203	B-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8204	B-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8205	E-5	2	С	6.000	Safety	Α	S/A	С	No		SRV	5Y			
V8206	D-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8207	E-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8208	D-5	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8209	B-6	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8210	B-6	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8211	B-6	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8212	B-6	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8213	E-6	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8214	D-6	2	С	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8215	E-6	2	с	6.000	Safety	А	S/A	С	No		SRV	5Y			
V8216	D-6	2	С	6.000	Safety	Α	S/A	С	No		SRV	5Y			

REVISION NO	D.:	PF	ROCED	URE T	ITLE:								PA	AGE:	
4 PROCEDURE	NO.:	_		INS	ERVICI FOR			NG (IS AND			RAM			88 of 2	236
ADM-2	9.01					ST.	LUC	E PL	ANT						
P&ID: 299					, ,	2 V Page	e 25 (
SYSTEM:	MSIV	PNE			ONTROL	- SYS	T		I _		r				
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V2A	C-7	NC	В	1.000	3WY	A	AO	0	No	FC	EC FS	CS CS			
V2B	C-7	NC	В	1.000	3WY	A	AO	0	No	FC	EC FS	CS CS			
V3A	C-6	NC	В	1.000	3WY	A	AO	0	No	FC	EC FS	CS CS			
V3B	C-6	NC	в	1.000	3WY	A	AO	0	No	FC	EC FS	CS CS			
V4A	C-6	NC	В	1.000	3WY	A	AO	0	No	FC	EC FS	CS CS			
V4B	C-6	NC	В	1.000	3WY	A	AO	0	No	FC	EC FS	CS CS			
V5A	C-6	NC	в	1.000	3WY	А	AO	0	No	FC	EC FS	CS CS			
V5B	C-6	NC	в	1.000	3WY	А	AO	0	No	FC	EC FS	CS CS			
V19A	B-7	NC	в	1.000	3WY	А	so	0	No	FO	EC	cs			
V19B	B-7	NC	в	1.000	3WY	А	SO	0	No	FO	EC	CS			
V20A	B-5	NC	в	1.000	3WY	А	so	0	No	FO	EC	CS			
V20B	B-5	NC	В	1.000	3WY	A	SO	0	No	FO	EC	CS			

REVISION NO	D.:	PRC	CEDI	JRE TITI	LE:								PA	GE ¹
4 PROCEDURE	NO.			INSE	RVICE FOR						RAM			89 of 3
ADM-2	9.01							E PL	ANT					
					UNIT (F			of 45)						
					(°	3-								
P&ID: 299 SYSTEM:		· ·												
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-09-1A	B-5	2	В	20.000	Gate	A	HYD	0	Yes	FAI	EC Pl	CS 2Y		
HCV-09-1B	B-5	2	в	20.000	Gate	Α	HYD	0	Yes	FAI	EC Pl	CS 2Y		
HCV-09-2A	C-5	2	В	20.000	Gate	A	HYD	0	Yes	FAI	EC PI	CS 2Y		
HCV-09-2B	C-5	2	В	20.000	Gate	А	HYD	0	Yes	FAI	EC Pl	CS 2Y		
V09252	B-7	2	с	18.000	Check	А	S/A	0	No		CV/O	QR		
V09294	C-7	2	с	18.000	Check	А	S/A	0	No		CV/O	QR		
CHKVLV-1A	NA	NC	С	0.500	Check	A	S/A	С	No		CV/C	CS		Oper. Sys Air Supply
CHKVLV-1B	NA	NC	С	0.500	Check	A	S/A	С	No		CV/C	CS		Oper. Sys Air Supply
CHKVLV-2A	NA	NC	С	0.500	Check	A	S/A	С	No		CV/C	CS		Oper. Sys Air Supply
CHKVLV-2B	NA	NC	С	0.500	Check	А	S/A	С	No		CV/C	CS		Oper. Sys Air Supply

P&ID: 2998-G-080 SH 2B SYSTEM: FEEDWATER

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V09107	B-4	3	С	4.000	Check	A	S/A	С	No		CV/O	CS		
V09119	B-6	2	С	4.000	Check	А	S/A	С	No		CV/O	CS		
V09120	B-7	2	в	4.000	Gate	А	MAN	LO	No	FAI	EE	QR		
V09123	D-4	3	С	4.000	Check	А	S/A	С	No		CV/O	CS		
V09135	D-6	2	С	4.000	Check	A	S/A	С	No		CV/O	CS		
V09136	D-7	2	в	4.000	Gate	A	MAN	LO	No	FAI	EE	QR		

REVISION N	Ö.:	PRO	CED	URE TI	TLE:								P	AGE	
4				INSE							GRAM	1			
PROCEDURE	E NO.:	-			FOF	R PU	IMPS	AND) VAI	LVES	,			90 of	236
ADM-2	9.01					ST		IE PI	ANT	-					
	.0.01						ABLI						k	-,	
					UNI			E TA	BLE						
					(Pag	e 27	of 45)						
P&ID: 299	98-C-08	กรม	28												
SYSTEM:				continu	ued)										
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V09139	F-4	3	С	4.000	Check	A	S/A	С	No		CV/O	cs			
V09151	F-6	2	с	4.000	Check	Α	S/A	С	No		CV/O	cs			
V09152	F-7	2	В	4.000	Gate	A	MAN	LO	No	FAI	EE	QR			
V09157	G-6	2	с	4.000	Check	A	S/A	с	No		cv/o	cs			
V09158	G-7	2	В	4.000	Gate	A	MAN	LO	No	FAI	EE	QR			
V09303	G-3	3	С	2.000	Check	А	S/A	С	No		CV/PO CV/PO INSP	QR SP RF	VR-11 VR-11 VR-11		
V09304	E-3	3	С	1.500	Check	A	S/A	С	No		CV/PO CV/PO INSP	QR SP RF	VR-11 VR-11 VR-11		
V09305	C-3	3	С	1.500	Check	A	S/A	с	No		CV/PO CV/PO INSP	QR SP RF	VR-11 VR-11 VR-11		
V09724	A-6	3	С	0.375	Check	А	S/A	С	No		CV/C	RF	RFJ-23		
V09725	E-6	3	С	0.375	Check	А	S/A	С	No		CV/C	RF	RFJ-23		
V09726	H-6	3	С	0.375	Check	А	S/A	С	No		cv/c	RF	RFJ-23		
V09727	H-6	3	С	0.375	Check	А	S/A	с	No		cv/c	RF	RFJ-23		
MV-09-09	B-6	2	В	4.000	Globe	А	мо	С	Yes	FAI	EC EO PI	QR QR 2Y			
MV-09-10	D-6	2	В	4.000	Globe	A	МО	с	Yes	FAI	EC EO Pl	QR QR 2Y			
MV-09-11	F-6	2	В	4.000	Globe	A	MO	С	Yes	FAI	EC EO PI	QR QR 2Y			
MV-09-12	G-6	.2	В	4.000	Globe	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y			
SE-09-2	B-5	3	В	4.000	Gate	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
SE-09-3	D-5	3	В	4.000	Gate	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			/R

REVISION NO	D.:	PRO	CED	URE TH	TLE:					·			P.	AGE	
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PROCEDURE	NO.:				FUR	PU	INP3	ANL	VA					9101	250
ADM-2	9.01					ST.	LUC		ANT	-					
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P&ID: 299 SYSTEM:		· ·		continu	ed)										
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
SE-09-4	F-5	3	В	4.000	Gate	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
SE-09-5	G-5	3	В	4.000	Gate	A	SO	С	Yes	FC	EC EO FS PI	QR QR QR 2Y			
V12801	A-2	3	В	8.000	Gate	А	MAN	LC	No	FAI	EE	QR			
V12802	A-2	3	в	8.000	Gate	А	MAN	LC	No	FAI	EE	CS			
V12803	A-2	3	в	8.000	Gate	А	MAN	LC	No	FAI	EE	CS			
V12805	A-3	4	В	8.000	Gate	А	MAN	LC	No	FAI	EE	QR			
V12806	A-3	4	С	8.000	Check	А	S/A	С	No		CV/O	R F⁺	RFJ-12		
* Note: This	refers to	Unit 1	refue	eling on	ily, <u>not</u> l	Jnit 2									

P&ID: 2998-G-082 SH 2 SYSTEM: INTAKE COOLING WATER

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
MV-21-2	F-4	3	в	24.000	Butterfly	А	мо	0	Yes	FAI	EC Pl	QR 2Y		
MV-21-3	G-4	3	в	24.000	Butterfly	А	мо	0	Yes	FAI	EC Pl	QR 2Y		
SR21196	B- 5	3	С	3.000	Relief	А	S/A	С	No		SRV	10Y		
SR21243	B-6	3	С	3.000	Relief	А	S/A	С	No		SRV	10Y		
TCV-14-4A	A-5	3	в	30.000	Butterfly	A	PO	0	No	FO	EO FS	QR QR		
TCV-14-4B	A-6	3	В	30.000	Butterfly	A	PO	0	No	FO	EO FS	QR QR		
V21162	G-5	3	С	30.000	Check	A	S/A	0	No		CV/C CV/O	QR QR		
V21205	G-6	3	с	30.000	Check	A	S/A	0	No		CV/C CV/O	QR QR		
V21208	G-7	3	С	30.000	Check	A	S/A	0	No		CV/C CV/O	QR QR		
V21402	D-5	3	С	2.000	Check	A	S/A	0	No		CV/O	QR		
V21403	D-6	3	С	2.000	Check	Α	S/A	0	No		CV/O	QR		

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PROCEDURE	NO.:							,	• 7 1	0				
ADM-2	9.01							E PL	ANT					
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P&ID: 299 SYSTEM:				OOLI		ER								.
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-14-3A	H-1	3	В	14.000	Butterfly	A	DO	С	Yes	FO	EO FS Pl	QR QR 2Y		
HCV-14-3B	H-2	3	В	14.000	Butterfly	A	DO	с	Yes	FO	EO FS PI	QR QR 2Y		
HCV-14-8A	E-5	3	В	16.000	Butterfly	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y		
HCV-14-8B	E-5	3	В	16.000	Butterfly	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y		
HCV-14-9	F-6	3	В	16.000	Butterfly	A	PO	0	Yes	FC	EC FS PI	QR QR 2Y		
HCV-14-10	F-6	3	В	16.000	Butterfly	A	PO	0	Yes	FC	EC FS Pl	QR QR 2Y		
MV-14-1	D-6	3	В	24	Butterfly	Р	мо	LO	Yes	FAI	PI	2Y		
MV-14-2	D-7	3	в	24	Butterfly	Р	мо	LC	Yes	FAI	PI	2Y		
MV-14-3	F-6	3	В	24	Butterfly	Р	мо	LO	Yes	FAI	PI	2Y		
MV-14-4	F-6	3	в	24	Butterfly	Ρ	мо	LC	Yes	FAI	PI	2Y		
MV-14-9	B-3	2	В	8.000	Butterfly	Р	мо	LO	Yes	FAI	PI	2Y		
MV-14-10	B-2	2	В	8.000	Butterfly	Р	МО	LO	Yes	FAI	PI	2Y		
MV-14-11	B-4	2	В	8.000	Butterfly	Р	мо	LO	Yes	FAI	PI	2Y		
MV-14-12	B-3	2	В	8.000	Butterfly	Ρ	мо	LO	Yes	FA1	PI	2Y		
MV-14-13	B-1	2	В	8.000	Butterfly	Ρ	мо	LO	Yes	FAI	PI	2Y		
MV-14-14	B-1	2	В	8.000	Butterfly	Р	мо	LO	Yes	FAI	PI	2Y		
MV-14-15	B-2	2	в	8.000	Butterfly	Ρ	мо	LO	Yes	FAI	ΡI	2Y		
MV-14-16	B-2	2	В	8.000	Butterfly	Р	мо	LO	Yes	FAI	PI	2Y		
MV-14-17	E-4	3	В	12.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y		
MV-14-18	E-4	3	В	12.000	Butterfly	A	мо	LC	Yes	FAI	EC Pl	QR 2Y		
SR14307	A-3	2	c	1.000	Relief	А	S/A	С	No		SRV	10Y		

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REVISION NO	D.:	PR	OCED	URE TIT	LE:								PA	AGE .
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PROCEDURE	E NO.:													
ADM-2	9.01					ST. I	LUCI	E PL	ANT		·			<u> </u>
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P&ID: 299							(
SYSTEM:	COMP	ONE			IG WA	ER	Γ	· · · ·	_		l		5	<u></u>
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SR14318	A-3	2	С	1.000	Relief	A	S/A	С	No		SRV	10Y		
SR14329	A-1	2	с	1.000	Relief	A	S/A	с	No		SRV	10Y		
SR14342	A-2	2	с	1.000	Relief	A	S/A	С	No		SRV	10Y		
V14143	D-6	3	С	20.000	Check	A	S/A	0	No		CV/C CV/O	QR QR		
V14147	D-7	3	С	20.000	Check	A	S/A	0	No		CV/C CV/O	QR QR		
	· · · · · · · · · · · · · · · · · · ·	3	с	20.000	Check	A	S/A	0	No		CV/C CV/O	QR QR		
V14151	D-6	3	-											1
V14151 SR14350	D-6 G-1	3	С	1.000	Relief	A	S/A	с	No		SRV	10Y		

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-14-1	D-6	2	A	8.000	Butterfly	A	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI		
HCV-14-2	C-1	2	A	8.000	Butterfly	A	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI		
HCV-14-6	D-2	2	A	8.000	Butterfly	P	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI		
HCV-14-7	D-6	2	A	8.000	Butterfly	Ρ	PO	0	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI		
SR-14636	D-6	2	AC	0.750	Relief	A	S/A	С	No		SLT-1 SRV	CI 10Y		
SR-14637	D-2	2	AC	0.750	Relief	A	S/A	С	No		SLT-1 SRV	Cl 10Y		

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P&ID: 299	18-G-08	4 SH	1											
P&ID: 299 SYSTEM: Valve Number				ER Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SYSTEM: Valve	MAKE	-UP \	WAT		Type Globe	A/P A					Exam EC FS PI SLT-1			Remarks
SYSTEM: Valve Number	MAKE Coord.	CL	WAT Cat.	Size			Туре	Pos.	Ind	Mode	EC FS Pl	Freq QR QR 2Y		Remarks

P&ID: 2998-G-085 SH 1 SYSTEM: SERVICE AIR

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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
HCV-18-2	F-6	2	A	2.000	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
SH-18797	F-3	2	A	1.000	Ball	Р	MAN	LC	No		SLT-1	СІ		
V181270	E-5	2	AC	2.000	Check	Ρ	S/A	С	No		SLT-1	СІ		

P&ID: 2998-G-085 SH 2A SYSTEM: INSTRUMENT AIR

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SR-18-6A	D-2	2	С	0.500	Relief	A	S/A	С	No		SRV	10Y		
SR-18-6B	D-1	2	С	0.500	Relief	A	S/A	С	No		SRV	10Y		
V18195	E-6	2	AC	2.000	Check	A	S/A	С	No		CV/C SLT-1	RF Cl	RFJ-15	
V18279	B-2	2	с	0.500	Check	A	S/A	С	No		CV/C	cs		
V18283	A-3	2	С	0.500	Check	A	S/A	С	No		CV/C	CS		
V18290	G-2	2	С	0.750	Check	А	S/A	С	No		CV/C	cs	VR-12	
V18291	G-2	2	С	0.750	Check	А	S/A	С	No		CV/C	cs	VR-12	
V18294	H-2	2	С	0.750	Check	Α	S/A	С	No		CV/C	cs	VR-12	
V18295	H-2	2	С	0.750	Check	А	S/A	С	No		CV/C	cs	VR-12	

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P&ID: 87 SYSTEM:														
Valve Number	Coord	<u> </u>		1	е Туре	A	P Act Typ				l ⊢xam	Test Freq	Relief Req.	Remarks
HCV-18-1	G-3	2	A	1.00	0 Globe	e A	, DC	> 0	Ye	s FC	EC FS PI	CS CS 2Y		
i i											SLT-1	CI		
						1	Γ.		_					
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
	Coord. C-6	CL 2	Cat. B	Size 3.000	Type Globe	A/P A	1				Exam EC FS PI			Remarks
Number							Туре	Pos.	Ind	Mode	EC FS	Freq QR QR		Remarks
Number FCV-23-3	C-6	2	В	3.000	Globe	A	Type DO	Pos. O	Ind Yes	Mode FC	EC FS PI EC FS	Freq QR QR 2Y QR QR		Remarks
Number FCV-23-3 FCV-23-5	C-6 C-6	2	B	3.000	Globe	A	Type DO DO	Pos. O O	Ind Yes Yes	Mode FC FC	EC FS PI EC FS PI EC FS	Freq QR QR 2Y QR QR 2Y QR QR QR		Remarks
Number FCV-23-3 FCV-23-5 FCV-23-7	C-6 C-6 C-7	2 2 2	B B	3.000 3.000 0.500	Globe Globe Globe	A	Type DO DO DO	Pos. 0 0 0 0	Ind Yes Yes Yes	Mode FC FC FC	EC FS PI EC FS PI EC FS PI EC FS	Freq QR QR 2Y QR QR 2Y QR QR 2Y QR QR QR QR		Remarks
Number FCV-23-3 FCV-23-5 FCV-23-7 FCV-23-9	C-6 C-6 C-7 C-7	2 2 2 2 2 2	B B B	3.000 3.000 0.500 0.500	Globe Globe Globe Globe	A A A A	Type DO DO DO DO	Pos. 0 0 0 0 0	Ind Yes Yes Yes	Mode FC FC FC	EC FS PI EC FS PI EC FS PI EC FS PI	Freq QR QR 2Y QR QR 2Y QR QR 2Y QR QR QR 2Y		Remarks
Number FCV-23-3 FCV-23-5 FCV-23-7 FCV-23-7 SR-17221	C-6 C-6 C-7 C-7 B-3	2 2 2 2 3**	B B B C	3.000 3.000 0.500 0.500 0.750	Globe Globe Globe Globe Relief	A A A A	Type DO DO DO DO S/A	Pos. 0 0 0 0 0 0 0 0	Ind Yes Yes Yes No	Mode FC FC FC	EC FS PI EC FS PI EC FS PI EC FS PI SRV	Freq QR QR 2Y QR 2Y QR QR 2Y QR QR 2Y 10Y		Remarks
Number FCV-23-3 FCV-23-5 FCV-23-7 FCV-23-9 SR-17221 SR-17222	C-6 C-6 C-7 C-7 B-3 C-3	2 2 2 2 3** 3**	B B B C C	3.000 3.000 0.500 0.500 0.750 0.750	Globe Globe Globe Globe Relief Relief	A A A A A	Type DO DO DO DO S/A S/A	Pos. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ind Yes Yes Yes No No	Mode FC FC FC	EC FS PI EC FS PI EC FS PI EC FS PI SRV SRV	Freq QR QR 2Y QR QR 2Y QR QR 2Y 10Y 10Y QR	Req.	Remarks
Number FCV-23-3 FCV-23-5 FCV-23-7 FCV-23-7 SR-17221 SR-17222 V17204	C-6 C-7 C-7 B-3 C-3 B-3	2 2 2 3*** 3***	B B B C C C C	3.000 3.000 0.500 0.500 0.750 0.750 1.500	Globe Globe Globe Globe Relief Relief Check	A A A A A A A	Type DO DO DO DO S/A S/A S/A	Pos. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ind Yes Yes Yes No No	Mode FC FC FC	EC FS PI EC FS PI EC FS PI EC FS PI SRV SRV CV/PO CV/O	Freq QR QR 2Y QR 2Y QR QR 2Y 10Y 10Y 10Y QR 2Y	Req.	Remarks
Number FCV-23-3 FCV-23-5 FCV-23-7 FCV-23-9 SR-17221 SR-17222 V17204 V17207	C-6 C-7 C-7 B-3 C-3 B-3 B-3	2 2 2 2 3** 3** 3** 3**	B B B C C C B	3.000 3.000 0.500 0.500 0.750 1.500 2.000	Globe Globe Globe Globe Relief Relief Check Globe	A A A A A A A	Type DO DO DO DO S/A S/A S/A S/A MAN	Pos. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ind Yes Yes Yes No No No	Mode FC FC FC	EC FS PI EC FS PI EC FS PI EC FS PI SRV CV/PO CV/PO CV/PO CV/PO	Freq QR QR 2Y QR QR 2Y QR QR 2Y 10Y 10Y QR 2Y QR QR QR 2Y QR QR	Req. VR-13 VR-13 VR-13	Remarks

REVISION	NO.:	1	PROCI	EDURE 1	TITLE:								P	AGE	
4	1			INS							GRAM				
PROCEDU	RE NO.:				FOF	R PL	JMPS	s ani	D VA	LVES	\$			96 of 2	:36
ADM-	29.01					ST	. LUC	CIE P	LAN	г					
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P&ID: 29															
SYSTEM	CON			IT SPR				[5 -11	r		Dallar		
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
MV-07-1A	E-5	2	в	24.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y			
MV-07-1B	E-5	2	В	24.000	Butterfly	A	мо	0	Yes	FAI	EC PI	QR 2Y			
SE-07-3A	G-3	2	В	0.500	Globe	A	SO	С	Yes	FO	EC EO FS PI	QR QR QR 2Y			
SE-07-3B	H-3	2	В	0.500	Globe	A	SO	с	Yes	FO	EC EO FS PI	QR QR QR 2Y			
SR-07-1C	E-2	2	С	1.000	Relief	А	S/A	С	No		SRV	10Y			
SR-07-2A	F-3	2	С	0.500	Relief	А	S/A	С	No	FC	SRV	10Y			
SR-07-2B	G-3	2	с	0.500	Relief	А	S/A	С	No	FC	SRV	10Y			
V07119	E-6	2	С	24.000	Check	A	S/A	с	No		CV/C CV/C CV/PO CV/PO INSP	CS SP QR SP RF	VR-14 VR-14 VR-14 VR-14		
V07120	E-6	2	С	24.000	Check	A	S/A	С	No		CV/C CV/C CV/PO CV/PO INSP	CS SP QR SP RF	VR-14 VR-14 VR-14 VR-14		
V07129	H-6	2	С	12.000	Check	Α	S/A	с	No		CV/PO CV/O	QR RF	RFJ-16 RFJ-16	1	
V07130	H-6	2	В	12.000	Gate	А	MAN	LO	No		EE	QR			
V07143	G-6	2	с	12.000	Check	A	S/A	с	No		CV/PO CV/O	QR RF	RFJ-16 RFJ-16		
V07145	G-6	·2	в	12.000	Gate	A	MAN	LO	No		EE	QR			

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4 PROCEDURE	E NO.:			INSE	ERVIC FOR			NG (I AND			RAM			97 of 2	36
ADM-2	9.01					ST.	LUC	IE PL	ANT						
		4	·		UNIT	T/ 2 V		3	BLE						
P&ID: 299 SYSTEM:					Y (con	itinue	d)								
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remark s	
V07231	E-2	2	С	2.000	Check	А	S/A	С	No		CV/O	QR			/R
V07232	E-2	2	С	2.000	Check	A	S/A	С	No		CV/O	QR			/R
V07256	G-3	2	С	0.500	Check	А	S/A	С	No		CV/O	RF	RFJ-18		
V07258	H-3	2	с	0.500	Check	Α	S/A	С	No		CV/O	RF	RFJ-18		
V07412	F-3	2	с	0.500	Check	Α	S/A	с	No		CV/O	QR			
V29431	D-2	2	В	1	Check	A	S/A	0	No		CV/C	RF	RFJ-24		/R
V29432	D-2	2	В	1	Check	A	S/A	0	No		CV/C	RF	RFJ-24		/R
	8-G-08	8 SH	12	SPRA		A A/P	S/A Act. Type	O Norm Pos.	No Rem Ind	Fail Mode	CV/C Exam	RF Test Freq	Relief	Remarks	/R
V29432 P&ID: 299 SYSTEM: Valve	08-G-08 CONT	8 SH	I 2 IENT	SPRA	Y		Act.	Norm	Rem			Test	Relief		/R
V29432 P&ID: 299 SYSTEM: Valve Number	8-G-08 CONT	8 SH AINN CL	I 2 IENT Cat.	SPRA	Y Type	A/P	Act. Type	Norm Pos.	Rem Ind		Exam	Test Freq	Relief		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170	28-G-08 CONT Coord. E-3	8 SH AINN CL 2	I 2 IENT Cat.	SPRA Size 3.000	Y Type Gate	A/P P	Act. Type MAN	Norm Pos. LC	Rem Ind No		Exam SLT-1	Test Freq CI RF	Relief Req.		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170 V07172	8-G-08 CONT Coord E-3 G-2	8 SH AINN CL 2 2	I 2 IENT Cat. A C	SPRA Size 3.000 24.000	Y Type Gate Check	A/P P A	Act. Type MAN S/A	Norm Pos. LC C	Rem Ind No No		Exam SLT-1 INSP	Test Freq CI RF	Relief Req. VR-16		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170 V07172 V07174	8-G-08 CONT/ Coord. E-3 G-2 G-2	8 SH AINN CL 2 2 2	Cat.	SPRA Size 3.000 24.000 24.000	Type Gate Check Check	A/P P A A	Act. Type MAN S/A S/A	Norm Pos. LC C	Rem Ind No No		Exam SLT-1 INSP INSP	Test Freq CI RF RF	Relief Req. VR-16		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170 V07172 V07174 V07188	8-G-08 CONT, Coord. E-3 G-2 G-2 E-4	8 SH AINN CL 2 2 2 2 2	Cat.	SPRA Size 3.000 24.000 3.000	Y Type Gate Check Check Gate Gate	A/P P A A P	Act. Type MAN S/A S/A MAN	Norm Pos. LC C LC	Rem Ind No No No		Exam SLT-1 INSP INSP SLT-1	Test Freq CI RF RF CI CI	Relief Req. VR-16		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170 V07172 V07174 V07188 V07189	8-G-08 CONT Coord E-3 G-2 G-2 E-4 E-4	8 SH AINN CL 2 2 2 2 2 2 2 2	Cat.	SPRA Size 3.000 24.000 24.000 3.000 3.000	Y Type Gate Check Check Gate Gate	A/P P A A P P	Act. Type MAN S/A S/A MAN MAN	Norm Pos. LC C LC LC	Rem Ind No No No No		Exam SLT-1 INSP SLT-1 SLT-1	Test Freq CI RF RF CI CI CI RF	Relief Req. VR-16 VR-16		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170 V07172 V07174 V07188 V07189 V07192	8-G-08 CONT, Coord. E-3 G-2 G-2 E-4 E-4 C-4	8 SH AINN CL 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Cat.	SPRA Size 3.000 24.000 3.000 3.000 10.000	Type Gate Check Check Gate Gate Check	A/P P A A P P A	Act. Type MAN S/A S/A MAN S/A	Norm Pos. C C LC LC C	Rem Ind No No No No		Exam SLT-1 INSP INSP SLT-1 SLT-1 INSP	Test Freq CI RF RF CI CI CI RF	Relief Req. VR-16 VR-16 VR-17		/R
V29432 P&ID: 299 SYSTEM: Valve Number V07170 V07172 V07174 V07188 V07189 V07192 V07193	8-G-08 CONT, Coord. E-3 G-2 G-2 E-4 E-4 C-4 C-4	8 SH AINN CL 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	I 2 IENT Cat. A C C A A C C C	SPRA Size 3.000 24.000 3.000 3.000 10.000	Y Type Gate Check Check Gate Gate Check Check	A/P A A P A A A	Act. Type MAN S/A S/A MAN MAN S/A S/A	Norm Pos. C C LC LC C C C	Rem Ind No No No No No		Exam SLT-1 INSP INSP SLT-1 SLT-1 INSP INSP	Test Freq CI RF CI CI CI CI RF RF	Relief Req. VR-16 VR-16 VR-17		/R

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SYSTEM:	CONTA		IENT	SPRA	Y (con	tinue	d)			r		r		T 1
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
LCV-07-11A	G-4	2	A	2.000	Globe	A	DO	С	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
LCV-07-11B	G-3	2	A	2.000	Globe	A	DO	с	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
MV-07-2A	G-3	2	В	24.000	Butterfly	A	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-07-2B	G-3	2	В	24.000	Butterfly	A	мо	С	Yes	FAI	EC EO PI	QR QR 2Y		
MV-07-3	C-2	2	В	12.000	Gate	А	мо	0	Yes	FAI	EC PI	QR 2Y		
MV-07-4	D-2	2	в	12.000	Gate	А	мо	0	Yes	FAI	EC PI	QR 2Y		
SE-07-5A	C-6	2	в	0.375	Globe	Ρ	SO	LO	Yes	FO	PI	2Y		
SE-07-5B	D-6	2	в	0.375	Globe	Р	SO	LO	Yes	FO	PI	2Y		
SE-07-5C	D-6	2	в	0.375	Globe	Ρ	SO	LO	Yes	FO	PI	2Y		
SE-07-5D	D-6	2	в	0.375	Globe	Р	SO	LO	Yes	FO	PI	2Y		
SR-07474	G-4	2	AC	0.750	Relief	A	S/A	С	No		SLT-1 SRV	CI 10Y		
SR-07475	G-4	NC	С	0.750	Relief	Α	S/A	С	No		SLT-1 SRV	CI 10Y		
SR-07476	E-4	2	AC	0.750	Relief	A	S/A	с	No		SLT-1 SRV	CI 10Y		
SR-07477	E-4	2	AC	0.750	Relief	A	S/A	С	No		SLT-1 SRV	CI 10Y		

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ST. LUCIE PLANT

TABLE 3 UNIT 2 VALVE TABLE

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P&ID: 2998-G-091 SH 1 SYSTEM: MISCELLANEOUS

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
V00101	B-5	2	А	8.000	Gate	P	MAN	LC	No		SLT-1	СІ		
V00139	C-4	2	A	0.375	Globe	Р	MAN	LC	No		SLT-1	CI		
V00140	D-4	2	А	1.000	Globe	Р	MAN	LC	No		SLT-1	CI		
V00143	D-5	2	A	1.000	Globe	Ρ	MAN	LC	No		SLT-1	СІ		
V00144	C-5	2	A	0.375	Globe	Ρ	MAN	LC	No		SLT-1	СІ		

P&ID: 2998-G-092 SH 1 SYSTEM: MISCELLANEOUS SAMPLING

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remark s
FCV-26-1	B-2	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-2	B-2	2	A	1.000	Globe	A	DO	ο	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-3	B-3	2	А	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-4	B-3	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-5	B-3	2	A	1.000	Globe	A	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FCV-26-6	B-3	2	A	1.000	Globe	А	DO	0	Yes	FC	EC FS PI SLT-1	QR QR 2Y CI		
FSE-27-8	A-5	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		

R PL ST. T T 2 V (Pag	JMPS LUC ABL VALV Je 37 contin Act. Type	5 AND <u>CIE PI</u> E 3 <u>/E T</u> of 45		LVES r	GRAM			100 of	236
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T T 2 V (Pag NG (i	ABL VALV je 37 contin Act. Type	E 3 /E TA of 45 ued)	BLE						
T T 2 V (Pag NG (i	ABL VALV je 37 contin Act. Type	E 3 /E TA of 45 ued)	BLE						
T 2 V (Pag NG (A/P	valv je 37 contin Act. Type	VE TA of 45 ued)	5)	<u> </u>					
NG (contin Act. Type	ued) Norm	r	r					
A/P	Act. Type	Norm	Pam	r					
A/P	Act. Type	Norm	Perm	r					
<u> </u>	Туре		Dom						
A		1.03.	Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			· · · ·
A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
A	SO	с	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
	A	A SO A SO A SO A SO	ASOCASOCASOCASOCASOC	ASOCYesASOCYesASOCYesASOCYesASOCYes	ASOCYesFCASOCYesFCASOCYesFCASOCYesFCASOCYesFC	Image: series of the series	Image: series of the series	Image: series of the series	Image: series of the series

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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FSE-27-17	B-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
FSE-27-18	B-6	2	A	0.375	Globe	A	SO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI		
V27101	B-6	2	AC	0.375	Check	A	S/A	С	No		CV/C CV/O SLT-1	RF QR CI	RFJ-19	
	B-6	2	AC	0.375	Check	А	S/A	С	No		CV/C CV/O	RF QR	RFJ-19	

P&ID: 2998-G-096 SH 1A SYSTEM: EDG SYSTEM - DIESEL ENGINE 2A1

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SE-59-1A1	B-5	3**	в	1.500	Gate	A	SO	С	No	FC	EC EO FS	QR QR QR		
SR-59-1A1	C-5	3**	С	1.250	Relief	A	S/A	С	No		SRV	10Y		
V59002	B-4	3**	с	1.500	Check	A	S/A	С	No		CV/O	QR		
V59010	G-5	3**	с	1.000	Check	А	S/A	0	No		CV/C	QR		
V59011	G-5	3**	с	1.000	Check	А	S/A	С	No		CV/O	QR		
V59017	G-4	3**	с	1.000	Check	А	S/A	С	No		CV/O	QR		
V59021	G-3	3**	с	1.000	Check	А	S/A	0	No		CV/C	QR		
V59232	C-3	3**	с	0.750	Check	А	S/A	0	No		CV/C	QR		

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Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
									1						j
SE-59-1A2	H-2	3**	В	1.500	Gate	A	so	с	No	FC	EC	QR			
SE-59-1A2	H-2	3**	В	1.500	Gate	A	so	С	No	FC	EO	QR			
		-								FC	EO FS	QR QR			
SE-59-1A2 SR-59-1A2	H-2 F-2	3** 3**	B C	1.500 1.250	Gate Relief	A A	SO S/A	C C	No	FC	EO	QR			
		-								FC	EO FS	QR QR			
SR-59-1A2	F-2	3**	С	1.250	Relief	A	S/A	с	No	FC	EO FS SRV	QR QR 10Y			
SR-59-1A2 V59025	F-2 B-5	3** 3**	C C	1.250 1.000	Relief Check	A	S/A S/A	с 0	No	FC	EO FS SRV CV/C	QR QR 10Y QR			
SR-59-1A2 V59025 V59026	F-2 B-5 B-4	3** 3** 3**	с с с	1.250 1.000 1.000	Relief Check Check	A A A	S/A S/A S/A	с 0 С	No No No	FC	EO FS SRV CV/C CV/O	QR QR 10Y QR QR			
SR-59-1A2 V59025 V59026 V59048	F-2 B-5 B-4 B-3	3** 3** 3** 3**	с с с с	1.250 1.000 1.000 1.000	Relief Check Check Check	A A A A	S/A S/A S/A S/A	с 0 с	No No No	FC	EO FS SRV CV/C CV/O CV/O	QR QR 10Y QR QR QR			

P&ID: 2998-G-096 SH 1C SYSTEM: EMER. DIESEL GEN. AIR START 2A

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-59-1A1	H-2	3**	в	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18	
FCV-59-2A1	H-4	3**	в	1.500	Gate	A	AO	С	No	FC	EO	2Y	VR-18	
FCV-59-3A1	F-4	3**	в	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18	
FCV-59-4A1	F-2	3**	в	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18	
SE-59-3A	G-3	3**	В	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18	
SE-59-4A	E-3	3**	В	1.500	Gate	Α	AO	С	No	FC	EO	2Y	VR-18	
SE-59-5A	E-4	3**	В	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18	
SE-59-6A	G-4	3**	в	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18	
SR-59-3A	B- 5	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y		
SR-59-4A	B-4	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y		
SR-59-5A	B-3	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y		
SR-59-6A	B-2	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y		

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P&ID: 299 SYSTEM:		· ·		GEN. /	AIR ST	ART	2A (0	continu	ed)				•		
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
V59156	B-5	3**	С	1.250	Check	А	S/A	с	No		CV/C	QR			
V59158	B-3	3**	С	1.250	Check	А	S/A	С	No		CV/C	QR			
V59159	B-2	3**	С	1.250	Check	А	S/A	с	No		CV/C	QR			
V59183	G-2	3**	С	0.250	Check	А	S/A	с	No		cv/c	2Y	VR-18		
V59187	E-2	3**	с	0.250	Check	A	S/A	С	No		cv/c	2Y	VR-18		
V59191	G-4	3**	с	0.250	Check	А	S/A	С	No		CV/C	2Y	VR-18		
V59192	E-2	3**	с	0.250	Check	A	S/A	С	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59193	E-2	3**	с	0.250	Check	А	S/A	С	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59197	E-4	3**	С	0.250	Check	А	S/A	С	No		CV/C	2Y	VR-18		
V59198	E-5	3**	с	0.250	Check	A	S/A	с	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59199	E-5	3**	с	0.250	Check	A	S/A	С	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59236	B-4	3**	С	1.250	Check	А	S/A	с	No		CV/C	QR			

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SYSTEM:				GEN. 2	2B1										
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
SE-59-1B1	B-5	3**	В	1.500	Globe	A	S/O	с	No	FC	EC EO FS	QR QR QR			
SR-59-1B1	C-5	3**	С	1.250	Relief	A	S/A	С	No		SRV	10Y			
V59040	G-5	3**	С	1.000	Check	А	S/A	0	No		CV/C	QR			
V59041	G-5	3**	С	1.000	Check	А	S/A	С	No		CV/O	QR			
V59078	B-4	3**	С	1.500	Check	А	S/A	С	No		CV/O	QR			
V59089	G-3	3**	С	1.000	Check	А	S/A	0	No		CV/C	QR			
V59213	C-3	3**	с	1.000	Check	А	S/A	0	No		CV/C	QR			
V59219	G-4	3**	с	1.000	Check	А	S/A	С	No		CV/O	QR			

STSTEM:	CIVICK.		JEL	GEN. Z	2D I									
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
SE-59-1B2	H-2	3**	В	1.500	Globe	A	SO	с	No	FC	EC EO FS	QR QR QR		
SR-59-1B2	F-2	3**	С	1.250	Relief	А	S/A	С	No		SRV	10Y		
V59055	B-4	3**	С	1.000	Check	А	S/A	С	No		cv/o	QR		
V59056	B-5	3**	С	1.000	Check	А	S/A	0	No		CV/C	QR		
V59116	G-4	3**	С	1.500	Check	А	S/A	С	No		CV/O	QR		
V59127	B-3	3**	С	1.000	Check	А	S/A	0	No		CV/C	QR		
V59165	B-3	3**	С	1.000	Check	А	S/A	С	No		CV/O	QR		
V59194	F-5	3**	С	0.750	Check	А	S/A	0	No		CV/C	QR		

P&ID: 2998-G-096 SH 2B SYSTEM: EMER DIESEL GEN 2B1

** Optional Classification - Relief request approval not required, provided for information only.

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4				INSE	RVICE						RAM			105 -	ງວະ
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						TA	BLE	3							
					UNIT										
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P&ID: 299															
SYSTEM:	EMER.	DIE	SEL	GEN. /	AIR ST/		[Norm	Rem	Fail		Test	Relief		
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Pos.	Ind	Mode	Exam	Freq	Req.	Remarks	
FCV-59-1B1	F-4	3**	В	1.500	Gate	Α	AO	С	No	FC	EO	2Y	VR-18		
FCV-59-2B1	F-2	3**	В	1.500	Gate	A	AO	С	No	FC	EO	2Y	VR-18		
FCV-59-3B1	H-4	3**	В	1.500	Gate	Α	AO	С	No	FC	EO	2Y	VR-18	ļ]	
FCV-59-4B1	H-2	3**	В	1.500	Gate	Α	AO	С	No	FC	EO	2Y	VR-18	ļ	
SE-59-3B	G-3	3**	В	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18		
SE-59-4B	E-3	3**	в	1.500	Gate	Α	AO	С	No	FC	EO	2Y	VR-18		
SE-59-5B	G-4	3**	В	1.500	Gate	А	AO	С	No	FC	EO	2Y	VR-18		
SE-59-6B	E-4	3**	В	1.500	Gate	A	AO	С	No	FC	EO	2Y	VR-18		
SR-59-3B	B-5	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y			
SR-59-4B	B-4	3**	С	0.750	Relief	А	S/A	С	No		SRV	10Y			
SR-59-5B	B-3	3**	С	0.750	Relief	Α	S/A	С	No		SRV	10Y			
SR-59-6B	B-2	3**	с	0.750	Relief	Α	S/A	С	No		SRV	10Y			
V59203	B-5	3**	с	1.250	Check	A	S/A	С	No		CV/C	QR			
V59204	B-4	3**	С	1.250	Check	Α	S/A	С	No		CV/C	QR			
V59205	B-3	3**	с	1.250	Check	А	S/A	С	No		CV/C	QR			
V59206	B-2	3**	С	1.250	Check	A	S/A	С	No		CV/C	QR			
V59231	G-2	3**	с	0.250	Check	A	S/A	С	No		CV/C	2Y	VR-18		
V59235	E-2	3**	С	0.250	Check	Α	S/A	С	No		CV/C	2Y	VR-18		
V59239	G-4	3**	с	0.250	Check	Α	S/A	С	No		CV/C	2Y	VR-18		
V59240	E-2	3**	с	0.250	Check	A	S/A	С	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59241	E-2	3**	С	0.250	Check	A	S/A	С	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59245	E-4	3**	С	0.250	Check	А	S/A	С	No		CV/C	2Y	VR-18		
V59246	E-5	3**	с	0.250	Check	A	S/A	С	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		
V59247	E-5	3**	с	0.250	Check	A	S/A	с	No		CV/C CV/O	2Y 2Y	VR-18 VR-18		

** Optional Classification - Relief request approval not required, provided for information only.

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P&ID: 299 SYSTEM:	98-G-87		VEN	TII ATI	UNIT (F	TA <u>2 V</u> Page	BLE ALV 43 (<u>E TAI</u> of 45)	BLE						
Valve Number	Coord.		Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks	
FCV-25-1	C-2	2	В	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI	CS CS 2Y			
FCV-25-2	C-3	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-3	C-4	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-4	C-6	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-5	C-7	2	A	48.000	Butterfly	A	PO	С	Yes	FC	EC FS PI SLT-1	CS CS 2Y CI			
FCV-25-6	C-8	2	В	48.000	Butterfly	А	PO	С	Yes	FC	EC FS PI	CS CS 2Y			
FCV-25-7	C-15	2	A	24.000	Butterfly	А	PO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
FCV-25-8	C-15	2	A	24.000	Butterfly	A	PO	С	Yes	FC	EC EO FS PI SLT-1	QR QR QR 2Y CI			
V-25-20	C-13	2	AC	24.000	Check	A	S/A	С	No		CV/C VBT SLT-1	CS CS CI	VR-19 VR-19		
V-25-21	C-13	2	AC	24.000	Check	A	S/A	C	No		CV/C VBT SLT-1	CS CS CI	VR-19 VR-19		

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	TABLE 3 UNIT 2 VALVE TABLE (Page 44 of 45)															
P&ID: 2998-G-879 SH2 SYSTEM: HEATING, VENTILATION AND AIR CONDITION																
Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks		
FCV-25-14	E-6	3	В	12.000	Butterfly	A	МО	0	Yes	FAI	EC EO PI	QR QR 2Y				
FCV-25-15	E-7	3	В	12.000	Butterfly	A	МО	0	Yes	FAI	EC EO PI	QR QR 2Y				
FCV-25-16	E-5	3	В	12.000	Butterfly	A	мо	0	Yes	FAI	EC EO PI	QR QR 2Y				
FCV-25-17	E-8	3	В	12.000	Butterfly	A	мо	0	Yes	FAI	EC EO PI	QR QR 2Y				
FCV-25-18	C-17	3	В	6.000	Butterfly	А	мо	0	Yes	FAI	EC Pl	QR 2Y				
FCV-25-19	C-17	3	В	6.000	Butterfly	А	МО	0	Yes	FAI	EC PI	QR 2Y				
FCV-25-24	A-17	3	В	10.000	Butterfly	A	мо	0	Yes	FAI	EC Pl	QR 2Y				
FCV-25-25	A-17	3	в	10.000	Butterfly	А	мо	0	Yes	FAI	EC Pl	QR 2Y				

P&ID: 2998-G-879 SH 3 SYSTEM: HEATING, VENTILATION AND AIR CONDITION

Valve Number	Coord.	CL	Cat.	Size	Туре	A/P	Act. Type	Norm Pos.	Rem Ind	Fail Mode	Exam	Test Freq	Relief Req.	Remarks
FCV-25-11	H-4	2	В	16.000	Butterfly	А	МО	С	Yes	FAI	EC EO PI	QR QR 2Y		
FCV-25-12	J-4	2	В	16.000	Butterfly	A	МО	С	Yes	FAI	EC EO Pl	QR QR 2Y		
FCV-25-13	I-14	2	В	12.000	Butterfly	А	мо	С	Yes	FAI	EO Pl	QR 2Y		

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4			INSERVICE								RAM				
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					UNIT				BLE						
								of 45)							
	_														
P&ID: 299 SYSTEM:				TILAT					N						
Valve			T		ľ		Act.	Norm	Rem	Fail	Even	Test	Relief	Remarks	
Number	Coord.	CL	Cat.	Size	Туре	A/P	Туре	Pos.	Ind	Mode	Exam	Freq	Req.	Remarks	
FCV-25-20	M-1	2	A	8.000	Butterfly	A	PO	с	Yes	FC	EC FS	QR QR			
											PI	2Y			
			ļ								SLT-1	CI			
FCV-25-21	M-2	2	A	8.000	Butterfly	Α	PO	С	Yes	FC	EC FS	QR QR			
											PI	2Y			
											SLT-1	CI			
FCV-25-26	N-2	2	A	8.000	Butterfly	А	PO	С	Yes	FC	EC FS	QR QR			
											PI	2Y			
				4 000	0.00.0		20				SLT-1	CI			
FCV-25-29	К-3	2	В	4.000	Butterfly	A	мо	С	Yes	FAI	EC Pl	QR 2Y			
FCV-25-30	H-4	2	в	20.000	Butterfly	A	мо	С	Yes	FAI	EC	QR			
											EO PI	QR 2Y			
FCV-25-31	J-4	2	В	20.000	Butterfly	A	мо	с	Yes	FAI	EC	QR			
PCV-25-51	J-4	2	В	20.000	Dutteriny		MO	^o	105		EO	QR			
											PI	2Y			
FCV-25-32	H-4	2	В	30.000	Butterfly	A	мо	0	Yes	FAI	EC EO	QR QR			
											PÎ	2Y			
FCV-25-33	J-4	2	В	30.000	Butterfly	Α	мо	0	Yes	FAI	EC	QR			
											EO Pl	QR 2Y			
FCV-25-34	H-2	2	в	4.000	Butterfly	А	мо	с	Yes	FAI	EC	QR			
											PI	2Y			
FCV-25-36	N-1	2	А	8.000	Butterfly	А	PO	с	Yes	FC	EC FS	QR QR			
											PI	2Y			
											SLT-1	CI			
V-25-23	J-4	2	С	24.000	Check	Α	S/A	С	No		CV/O	QR			
V-25-24	H-4	2	С	24.000	Check	А	S/A	С	No		cv/o	QR			

END OF TABLE 3

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	RELIEF REQUEST NO. PR-02						
COMPONENTS							

Auxiliary Feedwater (AFW) Pumps 1A through 1C (8770-G-080, Sh 3) Auxiliary Feedwater (AFW) Pumps 2A through 2C (2998-G-080, Sh 2B)

PART 6 REQUIREMENT

Where system resistance can not be varied, flowrate and pressure shall be determined and compared to their respective reference value. (Part 6, Para. 5.2(c)).

BASIS FOR RELIEF

There are only two practical flowpaths available for performing inservice testing of the AFW Pumps. These include the primary flowpath from the Condensate Storage Tank (CST) to the main feed supply lines and thence to the steam generators and the minimum-flow recirculation (mini-recirc and bypass test loop) which recirculates back to the CST. The former is provided with flowrate measuring instrumentation; however, the mini-recirc line is a fixed resistance circuit with no flow instrumentation.

Full or substantial flow testing of these pumps is not practical during plant operation for several reasons. During auxiliary feedwater injection via the main feedwater lines while the plant is operating at power, a large temperature differential (approximately 375°F) could exist between the CST water and the normal steam generator makeup flowstream that would result in a significant thermal shock and fatigue cycling of the feedwater piping and steam generator nozzles. In addition, based on the expected duration of the testing and the flowrate of the pumps (325-600 gpm), it is expected that the cooldown of the steam generators would induce cooldown and contraction of the reactor coolant system resulting in potential undesirable reactivity variations and power fluctuations. Thus, during quarterly testing of the AFW pumps, flow is routed through the minimum flow recirculation line returning condensate to the Condensate Storage Tank. This recirculation flowpath is capable of passing a flowrate somewhat less than 20 percent of that at the pump design operating point. No flow instrumentation is installed in this recirculation piping and, furthermore, hydraulic pump test data at or near a pumps' shutoff head provides little information as to the mechanical condition of a pump.

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(continued)						

BASIS FOR RELIEF (continued)

These pumps are standby pumps and little degradation is expected with respect to hydraulic performance during plant power operations when the pumps remain idle. Thus, the alternate testing will provide adequate monitoring of these pumps with respect to the applicable Code requirements to ensure continued operability and availability for accident mitigation.

NRC Generic Letter 89-04, Position 9, allows elimination of minimum flow test line flowrate measurements providing inservice tests are performed during cold shutdowns or refueling periods under full or substantial flow conditions where pump flowrate is recorded and evaluated. The proposed alternate testing is consistent with this philosophy and the intent of this position.

ALTERNATE TESTING

During quarterly testing of the AFW pumps, the fixed-resistance mini-flow test circuit will be used and pump differential pressure and vibration will be measured and compared to their respective reference values per Paragraph 5.2(c).

During testing performed at cold shutdown, pump differential pressure, flowrate and vibration will be recorded and evaluated per Paragraph 5.2(b).

Testing during cold shutdowns will be on a frequency determined by intervals between shutdowns as follows:

- For cold shutdown periods occurring at intervals of 3 months or longer each shutdown
- For cold shutdown periods occurring at intervals of less than 3 months testing is not required unless 3 months have passed since the last cold shutdown test.

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	RELIEF REQUEST NO. PR-02 (continued)	
ALTERNATE T	ESTING (continued)	

Cold shutdown pump and valve testing will normally commence within 48 hours of entering cold shutdown and continue until testing of all pumps and valves designated for cold shutdown testing during the outage is complete or the unit is ready to return to power. For extended outages, testing need not commence within 48 hours provided all testing of components requiring tests is completed prior to startup. If, for any reason, testing is not started within 48 hours of achieving cold shutdown, then all components requiring tests will be tested accordingly. For those cases where pumps can be tested during power ascension and where the Technical Specification requirements for the pumps or system determine when the pump is required to be operable, tests may be performed during power ascension without regard to the foregoing. Where plant conditions or other circumstances arise that preclude testing of a pump and testing of other pumps or valves is commenced within 48 hours of achieving cold shutdown, the unit need not be retained in cold shutdown for the sole purpose of completing testing.

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RELIEF REQUEST NO. PR-03							
COMPONENTS							

Boric Acid Makeup (BAM) Pumps 1A and 1B (8770-G-078, Sh 121B) Boric Acid Makeup (BAM) Pumps 2A and 2B (2998-G-078, Sh 121B)

PART 6 REQUIREMENT

An inservice test shall be conducted with the pump operating at specified test reference conditions. The test parameters shown in Table 2 shall be determined and recorded as directed in this paragraph. (Paragraph 5.2)

Pressure, flowrate and vibration (displacement or velocity) shall be determined and compared with corresponding reference values. (Paragraph 5.2(d))

BASIS FOR RELIEF

There are three available flowpaths for performing inservice testing of the BAM pumps. These include the primary flow path to the charging pump suction header, a recirculation line leading back to the Refueling Water Tank (RWT), and the BAM tank recirculation line. None of these flow paths is acceptable with respect to Code compliance for the following reasons:

1. Operating the BAM pumps discharging into the charging pump suction header requires the introduction of highly concentrated boric acid solution from the boric acid makeup tanks to the suction of the charging pumps. This would result in the addition of excess boron to the RCS. This rapid insertion of negative reactivity would result in RCS cooldown and de-pressurization. A large enough boron addition could result in an unscheduled plant trip and a possible safety injection system initiation. During cold shutdown, the introduction of excess quantities of boric acid into the RCS via this flowpath is undesirable from the aspect of maintaining proper plant chemistry and the inherent difficulties that may be encountered during the subsequent startup due to over-boration of the RCS. In addition, the waste management system would be overburdened by the large amounts of RCS coolant that would require processing to reduce boron concentration.

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	(continued)	
BASIS FOR RE	LIEF (continued)	
	d circuit recirculates water to the Refueling Water Tar	
	e Control Tank (VCT). During normal plant power op e to pump to the RWT and deplete the BAM tank inve	
	BAM tanks must be maintained at the Technical Spec	
	other is used as required for plant operation and boror	
Tech Spec	: limits provide only a narrow acceptable band (100-20	00 gallons),
	a small reduction in tank inventory would be unaccep	
	onal BAM tanks' level typically varies from test to test 0 feet. This variance in pump suction pressure will ha	
	ump head and flow such that test repeatability would	
questionab		
		. (
	ank recirculation flowpaths are fixed resistance circuit containing a flow limiting orifice. There is no flowrate	
	ation installed in these lines. Pumping boric acid from	
could be p	ossible but flowrates would be small restricting pump	operation to
	ead portion of the pump curve. Also, as described ab	
	M tanks must be maintained at Technical Specification cal Specification limits provide only a narrow acceptal	
	allons), thus a small reduction in tank inventory is una	
The other	BAM tanks' level will vary from test to test by as much	n as 15 to 20
	arly, this variance in pump suction pressure will have	
effect on p questionab	ump head and flow such that test repeatability would	be
questionab		
	etter 89-04, Position 9, allows elimination of minimum	
	ements providing inservice tests are performed during	•
	fueling periods under full or substantial flow condition recorded and evaluated. The proposed alternate test	
	his philosophy and the intent of Position 9.	All g lo

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	(continued)	
LTERNATE T	ESTING	
S	to the state DAM survey the fixed registeres DAM to	-1.
	testing of the BAM pumps, the fixed-resistance BAM ta will be used. Pump differential pressure and vibration	
	compared to their respective reference values per	
aragraph 5.2(c		
		a a cat
	erformed at refueling, pump differential pressure, flowrat recorded and evaluated per Paragraph 5.2(b).	e and
	recorded and evaluated per r aragraph 5.2(b).	

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RELIEF REQUEST NO. PR-04						
COMPONENTS						
Containment Sprov (CS) Dumps 1A and 1B (9770 C 089, Sh 1)						

Containment Spray (CS) Pumps 1A and 1B (8770-G-088, Sh 1) Containment Spray (CS) Pumps 2A and 2B (2998-G-088, Sh 1)

PART 6 REQUIREMENT

Where system resistance can not be varied, flowrate and pressure shall be determined and compared to their respective reference value. (Part 6, Para. 5.2(c))

BASIS FOR RELIEF

There are two practical flowpaths available for performing inservice testing of the containment spray pumps. These include one that directs borated water from the RWT to the RCS via the low-pressure injection header. The other is minimum-flow recirculation (mini-recirc and bypass test loop) which recirculates to the Refueling Water Tank (RWT).

The first would require modifying the shutdown cooling lineup while in cold shutdown; however, even then the shutdown cooling system can not provide sufficient letdown flow to the RWT to accommodate full design flow from the RWT while maintaining the necessary core cooling function. Thus, the only practical opportunity for testing these pumps via this flowpath is during refueling outages when water from the RWT is used to fill the refueling cavity.

The minimum-flow recirculation flowpath is a fixed resistance circuit containing a flow limiting orifice with no flowrate measuring instrumentation installed. Furthermore, hydraulic pump test data at or near a pumps' shutoff head provides little information as to the mechanical condition of a pump.

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	(continued)	

BASIS FOR RELIEF (continued)

These pumps are standby pumps that remain idle during most plant operations except for testing periods, thus, service-related degradation with respect to hydraulic performance between testing periods is unlikely. Consequently, the alternate testing will provide adequate monitoring of these pumps with respect to the applicable Code requirements to ensure continued operability and availability for accident mitigation.

NRC Generic Letter 89-04, Position 9, allows elimination of minimum flow test line flowrate measurements providing inservice tests are performed during cold shutdowns or refueling under full or substantial flow conditions where pump flowrate is recorded and evaluated. The proposed alternate testing is consistent with this philosophy and the intent of this position.

ALTERNATE TESTING

During quarterly testing of the containment spray pumps, the fixed-resistance mini-flow test circuit will be used and pump differential pressure and vibration will be measured and compared to their respective reference values per Paragraph 5.2(c).

During testing performed during reactor refueling, pump differential pressure, flowrate and vibration will be recorded and evaluated per Part 6, Para. 5.2(b).

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	RELIEF REQUEST NO. PR-05				

COMPONENTS

High Pressure Safety Injection (HPSI) Pumps 1A and 1B (8770-G-078, Sh 130A) High Pressure Safety Injection (HPSI) Pumps 2A and 2B (2998-G-078, Sh 130A)

PART 6 REQUIREMENT

Where system resistance can not be varied, flowrate and pressure shall be determined and compared to their respective reference value. (Part 6, Para. 5.2(c))

BASIS FOR RELIEF

During quarterly testing of the HPSI pumps, the pumps can not develop sufficient discharge pressure to overcome reactor coolant system (RCS) pressure and allow flow through the safety injection headers. Thus, during quarterly testing of the HPSI pumps, flow is routed through a minimum flow recirculation line returning boric acid solution to the refueling water tanks. The minimum-flow recirculation flowpath is a fixed resistance circuit containing a flow limiting orifice capable of passing a flowrate somewhat less than 10 percent of that at the pump design operating point with no flowrate measuring instrumentation installed. Note that hydraulic pump test data at or near a pumps' shutoff head provides little information as to the mechanical condition of a pump.

During cold shutdown conditions, full flow operation of the HPSI pumps to the RCS is restricted to preclude RCS system pressure transients that could result in exceeding the pressure-temperature limits specified in the Technical Specifications (LTOP).

These pumps are standby pumps and little degradation is expected with respect to hydraulic performance during operational periods when the pumps are idle. Thus, the alternate testing will provide adequate monitoring of these pumps with respect to the applicable Code requirements to ensure continued operability and availability for accident mitigation.

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BASIS FOR RE	LIEF (continued)					

NRC Generic Letter 89-04, Position 9, allows elimination of minimum flow test line flowrate measurements provided that inservice tests are performed during cold shutdowns or refueling periods under full or substantial flow conditions where pump flowrate is recorded and evaluated. The proposed alternate testing is consistent with this philosophy and the intent of this position.

ALTERNATE TESTING

During quarterly testing of the HPSI pumps, the fixed-resistance (mini-flow) test circuit will be used and pump differential pressure and vibration will be measured. Pump differential pressure and vibration measurements will be compared to their respective reference values per Paragraph 5.2(c).

During testing performed during reactor refueling, pump differential pressure, flowrate and vibration will be recorded and evaluated per Part 6, Paragraph 5.2(b).

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COMPONENTS

Low Pressure Safety Injection (LPSI) Pumps 1A and 1B (8770-G-078, Sh 130B) Low Pressure Safety Injection (LPSI) Pumps 2A and 2B (2998-G-078, Sh 130B)

PART 6 REQUIREMENT

Where system resistance can not be varied, flowrate and pressure shall be determined and compared to their respective reference value. (Part 6, Para. 5.2(c))

BASIS FOR RELIEF

During quarterly testing of the LPSI pumps, the pumps can not develop sufficient discharge pressure to overcome reactor coolant system (RCS) pressure and allow flow through the safety injection headers. Thus, during quarterly testing of the LPSI pumps, flow is routed through a minimum flow recirculation line returning boric acid solution to the refueling water tanks. The minimum-flow recirculation flowpath is a fixed resistance circuit containing a flow limiting orifice capable of passing a flowrate somewhat less than 10 percent of that at the pump design operating point with no flowrate measuring instrumentation installed. Note that hydraulic pump test data at or near a pumps' shutoff head provides little information as to the mechanical condition of a pump.

Except for brief periods when these pumps are used for shutdown cooling, they are standby pumps and little degradation is expected with respect to hydraulic performance during operational periods when the pumps remain idle. Thus, the alternate testing will provide adequate monitoring of these pumps with respect to the applicable Code requirements to ensure continued operability and availability for accident mitigation.

NRC Generic Letter 89-04, Position 9, allows elimination of minimum flow test line flowrate measurements providing inservice tests are performed during cold shutdowns or refueling under full or substantial flow conditions where pump flowrate is recorded and evaluated. The proposed alternate testing is consistent with this philosophy and the intent of this position.

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ALTERNATE T	ESTING	
circuit will be us Pump differentia	v testing of the LPSI pumps, the fixed-resistance mini-flow sed and pump differential pressure and vibration will be me al pressure and vibration measurements taken during this d to their respective reference values per Part 6, Para. 5.2	easured. testing
	erformed at cold shutdown and refueling, pump differentia te and vibration will be recorded and evaluated per Part 6 b).	
Testing during c between shutdo	cold shutdowns will be on a frequency determined by inter wns as follows:	vals
For cold shutdov shutdov	wn periods occurring at intervals of 3 months or longer - e	each
	wn periods occurring at intervals of less than 3 months - t ess 3 months have passed since the last cold shutdown to	-
Cold shutdown pump and valve testing will normally commence within 48 hours of entering cold shutdown and continue until testing of all pumps and valves designated for cold shutdown testing during the outage is complete or the unit is ready to return to power. For extended outages, testing need not commence within 48 hours provided all testing of components requiring tests is completed prior to startup. If, for any reason, testing is not started within 48 hours of achieving cold shutdown, then all components requiring tests will be tested accordingly. For those cases where pumps can be tested during power ascension and where the Technical Specification requirements for the pumps or system determine when the pump is required to be operable, tests may be performed during power ascension without regard to the foregoing. Where plant conditions or other circumstances arise that preclude testing of a pump and testing of other pumps or valves is commenced within 48 hours of achieving cold shutdown, the unit need not be retained in cold shutdown for the sole purpose of completing testing.		

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	RELIEF REQUEST NO. PR-07	
COMPONENTS		
Reactor Coolan Reactor Coolan	t Charging Pumps 1A, 1B and 1C (8770-G-078, Sh 120B) t Charging Pumps 2A, 2B and 2C (2998-G-078, Sh 122)	
PART 6 REQUI	REMENT	
measuring trans	conse Range. The frequency response range of the vibration solucers and their readout system shall be from one-third minim tional speed to at least 1000 Hz. (Paragraph 4.6.1.6)	um
BASIS FOR RE	LIEF	
equates to a rot	lant charging pumps operate at approximately 205-210 rpm wh ational frequency of 3.41 Hz. The one-third minimum speed onse required for the vibration instrumentation correlates to 1.13	
Inc. (CSI) mode accelerometer p response is ess frequency respo down to 1.5 Hz. frequency of 1 H specifications fo accuracy specifi vibration freque	strumentation used at St. Lucie are the Computational Systems I 2120 Machinery Analyzer with Wilcoxon model 793 probes. The CSI 2120 Machinery Analyzer integrator frequency entially flat down to DC. Wilcoxon model 793 accelerometer pro- onse range meets the Code accuracy range requirement of +/-5. The probes rated accuracy drops to only +/-10% down to a Hz. This the instrumentation capability meets the Code frequent or one-half pump running speed but has a frequency response faction of less than +/-5% for the one-third minimum speed. Accuracy response accuracy for the instrumentation will be better that imum ratings specified by the manufacturer for the probes.	robe % hcy
of only 2 Hz. The calibration to free suitable vibration NIST Calibration pickup (24010C) requires this ins Again, actual vites vites and solution of the second requires the second solution of the second so	calibration of the instrumentation will be to a minimum frequen he provider of the calibration services for PSL is unable to qual equencies less than 2 Hz. This is due to the unavailability of n measurement standards for performing the calibration. The Service Users Guide lists the lowest frequency NIST standards available is calibrated at 2 Hz. FPL Quality Assurance Progra trumentation to be calibrated and traceable to NIST standards. pration frequency response capability for the instrumentation wi qualified calibration requirements specified above.	ify I am

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BASIS FOR R	ELIEF (continued)	
potential noise The instrumen Additionally, it at one-half and readings at the hardship. This degradation so	response range of this instrumentation adequately envelopmentation is fully qualified to measure synchronous vibration is capable of and will be used for measuring vibration fr d one-third running speed. Qualification of the accuracy ese frequencies is considered unnecessary and would in a is considered acceptable since there are virtually NO m cenarios where only a sub-synchronous vibration compose e charging pumps. For example:	ging pumps. levels. equencies of the pose undue nechanical
	(0.38X - 0.48X) is NOT applicable to a horizontal, triplex ting pump.	,
but would running s of multipl measure increase	b/impact could generate 0.5X (102.5 cpm) vibration com d also usually generate a sequence of integer and half-in peed components. A heavy rub generates increased in e running speed components, as well as processing the ment. In either case the overall vibration level would stil from both the attenuated sub-synchronous and 1X vibra nts as well as the higher harmonic vibration components	teger teger values 1X phase I show an tion
	as in the power train would likely be indicated by increas ion components.	ing 1X and
model 2120 M provides suffic	above information, the use of Computational Systems In achinery Analyzer with Wilcoxon model 793 acceleromet iently reliable data to identify changes from baseline rea- ble problems with the pumps.	er probes
ALTERNATE	TESTING	
Computational model 793 acc	of these pumps, the vibration instrumentation used will to Systems Inc. (CSI) model 2120 Machinery Analyzer with elerometer probes, or equivalent. Calibration of the inst d to a minimum frequency of only 2 Hz.	n Wilcoxon

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COMPONENT	<u> </u>	
Hydrazine Pum	ps 2A and 2B (2998-G-088, Sh 1)	
PART 6 REQU	IREMENT	
	ate and vibration (displacement or velocity) shall be c with the corresponding reference values. (Paragraph	
BASIS FOR RI	LIEF	
slow speed (ap 0.65 Hz. In ac response for th Portable instrur The low freque Bentley Nevada frequency respo	proximately 39 rpm). This equates to a rotational free cordance with the Code, the required low limit of the file vibration instruments would be one third of this or 0, ments satisfying this requirement are commercially una necy vibration instrumentation presently in use at St. Lu model TK-81 with a 270 cpm probe. The TK-81 inter onse is essentially flat down to 120 cpm (cycles per m output of the instrument slightly increases to approxima	uency of requency .21 Hz. available. ucie is the grator inute) where

the displayed output of the instrument slightly increases to approximately +1dB at 100 cpm. The -3dB frequency response is reached at approximately 54 cpm. The velocity probe used with the TK-81 is a special low frequency probe nominally rated down to 270 cpm (-3 dB). For this reason, vibration readings taken, even with the low frequency probe, are essentially meaningless and of no value in identifying degradation of these pumps. Furthermore, the classical analysis of rotating components upon which the Code is based is not readily adaptable to slow moving components such as are installed in these pumps.

These pumps are standby pumps and little degradation is expected with respect to vibration performance between testing periods. The mechanisms of wear and degradation or rotating machinery are time and cycle dependant and, in this case, the number of repetitive wearing actions (cycles) is small both in frequency and absolute numbers. The pumps cycle approximately 2220 times per hour and operation is typically limited to 1-2 hours per <u>year</u>. Thus, the probability of any significant pump deterioration over the plant's lifetime is extremely small. Note that these pumps are designed and built for continuous operation.

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ALTERNATE T	ESTING	

In lieu of measuring pump vibration, these pumps will be maintained and inspected in accordance with the St. Lucie Preventative Maintenance Program that reflects the recommendations of the pump's manufacturer (Union Pump Co.). This program will, at a minimum, include periodic changing of the crankcase lubricating oil and oil analyses to identify significant wearing of internals. This program is adequate for determining pump degradation that could impact operability and reliability.

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COMPONENTS	<u>i</u>	
Hydrazine Pum	os 2A and 2B (2998-G-088, Sh 1)	
PART 6 REQU	REMENT	
reference condi	t shall be conducted with the pump operating at speci tions. The test parameters shown in Table 2 shall be s directed in this paragraph. (Paragraph 5.2)	ified test determined
	ate and vibration (displacement or velocity) shall be de corresponding reference values. (Paragraph 5.2(d))	etermined and
BASIS FOR RE	LIEF	
speed control. accurately displ The pump has a	pumps are reciprocating positive displacement pumps They are classified as metering pumps and are design ace a predetermined volume of liquid in a specific peri a single plunger and makes only one suction and one ach cycle (shaft rotation).	ned to iod of time.

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	(continued)	

BASIS FOR RELIEF (continued)

The pumps operate at a very slow speed (as low as 37 cpm) to supply the technical specification required hydrazine flowrate of 0.71 to 0.82 gpm. Due to the simplified design of these pumps, instantaneous flow is continuously accelerating and decelerating - following an oscillating waveform. Each cycle of the pump is approximately 1.6 seconds in duration with no flow produced during the pumps' 0.8 second suction stroke. The installed flowrate instrumentation utilizes a differential pressure orifice located in the suction line common to both pumps. Due to the characteristic oscillating flowrate, flow through this orifice pulsates sharply with each pump stroke resulting in erratic flowrate readings. The flow orifice also senses pressure feedback during each pump stroke cycle as a result of echoes of the pressure pulsation produced by the pump stroke which are reflected back to the flow element by the system piping and valves. The characteristic oscillating flowrate also makes it impractical to dampen using standard dampening devices. These flow characteristics and the design limitation of the installed flow instrumentation make it impractical and inadequate for inservice testing purposes.

Previous testing has demonstrated that techniques for determining flowrate by averaging the <u>indicated</u> flowrate readings are inconsistent and inaccurate when compared to actual flow. For this reason, trending the flowrate using the installed instrumentation is impractical due to the inherent inaccuracies and instability in measuring the pump flow as described above.

These pumps are standby pumps that remain idle during most plant operation except for testing periods, thus, service-related degradation with respect to hydraulic performance between testing periods is unlikely. Consequently, the alternate testing will provide adequate monitoring of these pumps with respect to the applicable Code requirements to ensure continued operability and availability for accident mitigation.

The flowrates of the pumps can be determined by collecting the pumps' output in a container of known volume over a measured period of time and thereby calculating the flowrate. A correlation between pump speed and average flowrate has been developed and confirmed based on piston displacement.

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	(continued)		

BASIS FOR RELIEF (continued)

Although not physically impractical, frequent performance of the above described flow testing is undesirable based on the personnel hazards associated with testing. Hydrazine is a hazardous, highly flammable liquid with cumulative toxic effects when absorbed through the skin, inhaled or ingested. It has also been identified as a known carcinogen. For this reason, it is proposed to perform this testing only during refueling outages. Measuring flowrate as described above during each refueling outage is appropriate and adequate for detecting any significant pump degradation and ensuring the continued operability and reliability of these pumps.

Note that this alternate testing plan is consistent with the intent of that provided in Generic Letter 89-04, Position 9.

ALTERNATE TESTING

During the quarterly pump tests, each pump will be operated at nominal rated speed and pump discharge pressure and speed will be measured.

During each refueling outage at least one test will be performed for each pump measuring actual pump flowrate to verify proper performance. Pump discharge pressure and speed will also be measured.

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COMPONENTS		
	Transfer Pumps 1A and 1B (8770-G-086, Sh 1) Transfer Pumps 2A and 2B (2998-G-086, Sh 1)	
PART 6 REQU	REMENTS	
	st shall be run on each pump, nominally every 3 months as. 5.3, 5.4 and 5.5. (Part 6, Para. 5.1)	s, except as
BASIS FOR RE	LIEF	
	NOTE	
testing is IWA-132	el fuel oil system was optionally upgraded to Class 3 an optional per ASME B&PV Code, Section XI, Paragraph D(e). Consequently, this relief request is provided for in approval is not required.	

The only readily available test circuit for these pumps consists of the normal day tank fill lines from the diesel oil storage tanks. There is a minimum flow recirculation line, however no instrumentation is installed that could provide flowrate information. A pump flowrate can be determining by calculating the fill rate of the day tanks, however, considering the usable volume of a day tank (150 gal.) and the rated capacity of the pumps (25 gpm @ 80 ft. head), the run time to refill a tank is insufficient to provide adequate time for deriving reliable and consistent flowrate data.

An alternate flowpath can be made available but is significantly more difficult to align and set up a flow test. This testing entails adjusting the levels in the fuel oil tanks and then aligning to pump between the tanks. Although this can provide adequate flowrate determination and pump performance evaluation, it is a complex test to perform and impractical to perform quarterly or even during cold shutdown conditions.

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	(continued)	
BASIS FOR RE	LIEF (continued)	
	capacity of the pumps (in excess of 25 gpm) is significant	
10	predicted oil consumption of the diesel generators (appr	-
5 gpm per gene	rator) and the fact that the pumps are seldom operated (only
during diesel ge	nerator testing), extending the test interval to 2 years will	not
significantly affe	ct the reliability and availability of the diesel generators w	/ith
respect to the c	apability of performing their intended safety function.	

ALTERNATE TESTING

Each of these pumps will be tested every two (2) years.

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	RELIEF REQUESTING. FROM			
<u>COMPONENTS</u>				
Various - This is a generic relief request.				

PART 6 REQUIREMENTS

If deviations fall within the alert range of Table 3, the frequency of testing specified in para. 5.1 shall be doubled until the cause of the deviation is determined and the condition corrected. If deviations fall within the required action range of Table 3, the pump shall be declared inoperable until the cause of the deviation has been determined and the condition corrected. (Para. 6.1)

BASIS FOR RELIEF

The 1995 Edition of ASME OM-Code provides an alternate concept of corrective action should a pumps' performance enter the action required range. Specifically, Paragraph ISTB 6.2.2 permits an analysis of the pump and establishment of new reference values. This can avoid premature maintenance of a pump that is subject to expected continual and gradual deterioration over time while operating at a level where it is fully capable of reliably performing its designated safety function.

By using the test requirements of the 1995 Code edition, St. Lucie Plant can reduce the frequency of unnecessary pump maintenance with essentially no adverse effect on plant safety since it can be assumed that the new Code requirements are equivalent to (or better than) the 1988 addenda.

In addition, by expanding this capability to pumps that are in the alert range, frequent and unnecessary testing can be avoided. Note that, in most cases, more frequent testing of pumps is itself a degrading mechanism. This also is required to avoid unnecessary plant shutdown for pumps that are tested at cold shutdown should a pump enter the alert range during such testing.

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	(continued)				
ALTERNATE T	ESTING				

In cases where a pumps' test parameters fall within either the <u>alert</u> or <u>action</u> <u>required</u> range and the pumps' continued use at the changed values is supported by an analysis, a new set of reference values may be established. The accompanying analysis will include verification of the pumps' operational readiness and an evaluation of test data that verifies that the subject pump is not expected to fall below the minimum required performance level in the periods between testing. The analysis will include both pump and system level operational readiness evaluations, description of the cause of the change in pump performance and an evaluation of all trends indicated by the available test and maintenance data. The results of this analysis will be documented in the record of tests.

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RELIEF REQUEST NO. PR-12					
COMPONENTS					
Low Pressure Safety Injection Pump 1A and 1B (8770-G-078, Sh 130B)					
PART 6 REQUIREMENT					

If deviations fall within the alert range of Table 3, the frequency of testing specified in paragraph 5.1 shall be doubled until the cause of the deviation is determined and the condition corrected. (Paragraph 6.1)

BASIS FOR RELIEF

The pumps are tested quarterly under minimum flow conditions (less than 2 percent of nominal flow) using the minimum flow recirculation piping and, during each refueling, at nominal design flowrate. Note, the flowrate experienced during quarterly testing is considerably less than that expected during accident or normal operational conditions. During the process of establishing new reference values for the quarterly tests related to implementation of the OM Code, it was discovered that the reference values for vibration for these pumps are near or exceed the absolute alert level of 0.325 in/sec. set forth in Table 3. Using the IRD Model 810 w/Model 970 Accelerometer Probe, the vibration levels at the pump bearings range between 0.28 and 0.38 in/sec. Because of this, these pumps will perpetually remain in "alert" since when operating at low flow at least one of these readings typically exceeds the alert limit established by Table 3 (0.325 in/sec). During the cold shutdown testing (substantial flow), vibration measurements are expected to be acceptable and well below the absolute alert limits of Table 3.

Due to the inherent design of the pumps, at low flows increased levels of vibration are induced as a consequence of energy dissipation and internal recirculation. Spectral analyses and pump vibration signatures confirm that the increased levels of vibration experienced at low flows are in the frequency range of five time rotational frequency, and thus, are a function or impeller design. In addition, there are significant levels of broad band vibration that is attributable to hydraulic instability. For this reason, it is clear that the increased vibration levels observed during low flow operation are, for the most part, unrelated to pump condition (degradation).

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BASIS FOR RELIEF (continued)

ASME OM Code 1995 and later revisions allow the classification of pumps into two groups, A and B, where the Group B pumps are those used for standby service, of which these pumps qualify. Recognizing that pump degradation that would manifest itself in increased vibration levels are not expected while a pump is in a standby mode, the code committee discontinued the requirement for quarterly vibration monitoring. This also reflects the growing concern of regulators and the members of the code committee that extended operation of pumps under minimum flow conditions has a deleterious effect on pump components. Thus it is apparent that vibration monitoring in this case is insignificant and certainly does not warrant any increased frequency of testing as required by the Code.

The proposed alternate testing is adequate and appropriate, and is capable of properly monitoring pump operability as intended by the Code. It should be noted that more frequent testing of these pumps under minimum flow conditions for no justifiable reason does not add to plant safety and could have a significant negative impact on pump and system operability and reliability.

ALTERNATE TESTING

In conjunction with the quarterly testing of these pumps, vibration data will be recorded per OM Code, Paragraphs 4.6.4 and 5.2. Test results will be evaluated, and the acceptance criteria of Table 3 applied with the exception that the minimum allowable vibration level defining the alert range will be 0.500 in/sec. Should measured vibration exceed 0.500 in./sec or $2.5V_r$, the subject pump will be placed in "alert" status and the frequency of testing doubled until the cause of the deviation is determined and the condition corrected. Should measured vibration exceed 0.700 in./sec or $6V_r$, the subject pump will be declared inoperable until the cause of the deviation is determined and the condition corrected.

When these pumps are tested at substantial flow conditions (plant shutdown), the vibration acceptance criteria as shown in Table 3 will be applied unconditionally.

APPROVAL

This relief request and alternate testing shall not be implemented without specific written approval of the relief request.

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COMPONENTS	5	
	Safety Injection (LPSI) Pumps 1A and 1B (8770-G-078, Safety Injection (LPSI) Pumps 2A and 2B (2998-G-078,	
PART 6 REQU	IREMENT	
	ange of each analog instrument shall be not greater tha reference value (Part 6, Para. 4.6.1.2).	an
BASIS FOR RE	ELIEF	
pressure to be the instrument. as much as \pm 6	requires the accuracy of instruments used to measure equal to or better than ± 2 percent based on full-scale This means that the accuracy of the actual measurem percent, assuming the range of the instrument is exten- ed deviation (3 times the reference value).	reading of ent can vary
•	calculating indicated instrument accuracy is as follows e Paragraph 5.5.1):	(from
	ple uses a reference pressure value of 20 psig and an gauge with full scale range of 60 psig that is calibrated	
Code requ	lirement:	
3 x r	rence value = 20 psig eference value = 60 psig ument tolerance = 1.2 psig (± 2% x 60 psig)	

Indicated accuracy:

Instrument tolerance / Reference value x 100 = Indicated accuracy

 \pm 1.2 psig / 20 psig x 100 = \pm 6%

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		RELI	EF REQUI (conti		PR-13			
the in instru	ndicated in ument in the	nethodolog nstrument a nis relief re- iment accu	iccuracy ca quest. The	an be calcu	ulated for e	each press	ure	
Table 1: C	Calculated I	nstrument A	ccuracies fo	or Selected	Pressure I	nstruments		
PUMP ID	INSTR	PARAME	REF	INSTR	INSTR	INSTR	IND	
1A LPSI	NUMBER PI-3314		VALUE 200 PSIG	RANGE 0-600	ACCUR ± 0.5%	TOL ± 3 PSIG	ACCUR ± 1.5%	
IA LPSI	P1-3314	Discharge Pressure	200 9313	PSIG	± 0.5%	± 3 P31G	± 1.5%	
1B LPSI	PI-3315	Discharge Pressure	195 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.5%	
2A LPSI	PI-3314	Discharge Pressure	190 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.6%	
2B LPSI	PI-3315	Discharge Pressure	185 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.6%	
Wher	· • ·							
110	0.							
REF	VALUE	= ref	ference val	ue establis	shed by th	e procedur	е	
INST	R ACCUR	e ac	curacy to v	which instr	ument is c	alibrated		
INST	R TOL	= ma	aximum INS	STR RANG	GE times I	NSTR ACC	CUR	
IND ACCUR = INSTR TOL divided by REF VALUE times 100								
								/R
								/130
		1.						

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As shown on Table 1, the indicated accuracy for all the instruments is less than \pm 6% of the reference value. These accuracy's are the same or better than those allowed by the Code. Therefore, there is no overall impact on the capability to detect and monitor degradation during pump tests based on use of these instruments. Continued use of the existing installed instruments is supported by NUREG-1482, Paragraph 5.5.1 which states that when the range of an installed analog instrument is greater than 3 times the reference value but the accuracy of the instrument is more conservative than the Code, NRC staff will grant relief when the combination of the range and accuracy yields a reading at least equivalent to the reading achieved from instruments that meet the Code requirements (i.e., up to \pm 6%).

ALTERNATE TESTING

Since the indicated accuracy of each permanently installed is less than the \pm 6 percent allowed tolerance, FPL requests approval for continued use of the instruments listed in this relief request.

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SYSTEM		
Various - This is	s a generic relief request.	
COMPONENTS	<u>.</u>	
All safety and re ambient condition	elief valves tested under ambient conditions using a te	st medium at
CATEGORY		
С		
FUNCTION		
Provide over-pre	essure protection to associated systems	
PART 1 REQUI	REMENT	
valve body shall	ability. The test method shall be such that the temper be known and stabilized before commencing set pres in measured temperature of more than 10°F (5°C) in 3 3.4)	ssure testing,
BASIS FOR RE	LIEF	
medium at appr	d under normal prevailing ambient (shop) conditions v oximately the same temperature, the requirement for v bility is inappropriate and of no value. There is little o	verifying

consequence of minor variations in ambient temperature. This has been identified by the OM-1 Code Working Group and the ASME Code

Committees and is reflected in the latest version of the Code (OM Code-1996) Paragraphs I 8.1.2(d) and I 8.1.3(d).

ALTERNATE TESTING

For safety and relief values tested under ambient conditions using a test medium at ambient conditions, the value body temperature will be measured and recorded prior to each series of tests (which may consist of multiple lifts) but there will be no verification of attaining thermal equilibrium.

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	RELIEF REQUEST NO. VR-03	
SYSTEM		
Various - This is	s a generic relief request.	
COMPONENTS		
All Class 2 and other than stear	3 safety and relief valves used for compressible fluid s n.	ervices
CATEGORY		
с		
FUNCTION		
Provide over-pre	essure protection to associated systems	
PART 1 REQUI	REMENT	
	lume. There shall be a minimum accumulator volume led on the valve capacity (cu ft) and calculated from the	
Minimum Volum (Paragraph 8.1.:	e = [valve capacity (cu ft per sec) X time open (sec) / ´ 2.2)	10].
BASIS FOR RE	LIEF	
the valve set pre	r volume requirement is not required for simple determinessure. This was recognized by the Code Committee are recent versions of the OM Code.	
ALTERNATE T	ESTING	

The volume of the accumulator drum and the pressure source flowrate shall be sufficient to determine the valve set-pressure. (Ref. ASME OM Code-1996, Paragraph I 8.1.2(b))

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SYSTEM		
Safety Injection	(2998-G-078, Sh 131 & 132; 8770-G-78, Sh 131 A&B)	
COMPONENTS		
Unit 1:		
	V3133, V3143, V3114, V3124, V3134, V3144, V3215, \ V3217, V3227, V3237, V3247	/3225,
Unit 2:		
	V3235, V3245, V3217, V3227, V3237, V3247, V3258, \ V3524, V3525, V3526, V3527	/3259,
CATEGORY		
AC		
FUNCTION		
These valves closs system.	ose to provide safety system isolation from the reactor	coolant
PART 10 REQL	JIREMENT	
	nall be exercised nominally every 3 months, except as p 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
Valves full-strok	e exercised at shutdowns shall be exercised during eac	ch

Valves full-stroke exercised at shutdowns shall be exercised during each shutdown, except as specified in (g) below. Such exercise is not required if the time period since the previous full-stroke exercise is less than 3 months. (Paragraph 4.3.2.2(f))

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	RELIEF REQUEST NO. VR-04 (continued)	
BASIS FOR RE	LIEF	
determining disc	e check valves with no external means of exercising no position, thus the only practical means of verifying clos skage or backflow test.	
Performing back considerable eff	flow or leakage tests of these valves typically involves a ort with the test connections and valves required for the iation areas with inconvenient access provisions.	
high pressure al	nes connected to the reactor coolant system are provide arms that would alert Operations personnel to any signi loard valves that could endanger low pressure systems.	
purpose of confi catastrophic failu St. Lucie Techni manner appropri	verify the closure capability of these valves is primarily forming their capability of preventing over-pressurization a ure of the safety injection piping and components. In this ical Specification 4.4.6.2 addresses the valve test freque iate for these valves. Performing the leak testing as pre- pecifications is adequate to ensure proper and reliable of	and is regard, ency in a escribed in
are not specifica valves; however	it 1, SIT Outlet Check Valves V3215, V3225, V3235 and ally listed in the Technical Specifications as pressure iso , as a result of a plant commitment, they are treated as with administrative testing requirements equivalent to the fications.	lation pressure

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		(continued)	
		ESTING	
ALIC	RNATE T	ESTING	
The cl	losure cap	ability of these check valves shall be demonstrated p	er the
applic	able Tech	nical Specification by verifying leakage to be within its	s limits during
cold s	hutdown c	outages only when any of the following conditions are	met:
	At logation	use nor 18 menths (Unit 2 only)	
1. <i>A</i>	At least of	ice per 18 months (Unit 2 only).	
2. F	Prior to en	tering MODE 2 after refueling (Unit 1 only).	
			_
		tering MODE 2 whenever the plant has been in COLI	
		VN for 7 days or more <u>and</u> if leakage testing has not	been
þ	performed	in the previous 9 months.	
4. F	Prior to ret	urning the valve to service following maintenance, rep	pair or
		nt work on the valve.	
5. F	Following	valve actuation due to flow through a valve (Unit 2 on	ly).

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	RELIEF REQUEST NO. VR-05	
SYSTEM		
STOTEM		
Safety Injection	(2998-G-078 Sh 132; 8770-G-078 Sh 131B)	
COMPONENTS		
V3215		
V3225		
V3235		
V3245		
CATEGORY		
A/C		
~0		
FUNCTION		
Those velves or	on to provide flownaths from the respective safety init	action tanks

These valves open to provide flowpaths from the respective safety injection tanks (SITs) to the reactor coolant system (RCS) and close to isolate the tanks from the high pressure of the RCS and the safety injection headers providing RCS integrity and preventing diversion of safety injection flow.

PART 10 REQUIREMENT

Check valves shall be exercised nominally every 3 months, except as provided by Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)

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	(continued)				

BASIS FOR RELIEF

These are simple check valves with no external means of exercising or for determining disc position. Consequently, the only practical method for stroke testing of the SIT discharge check valves is to discharge the contents of the SITs to the RCS. Performing a full flow test of the SIT discharge check valves during any plant operating mode is impractical because the maximum flowrates attainable by discharging the contents of the SIT to the RCS can not meet the valves' maximum required accident condition flowrate as required by Generic Letter 89-04, Position 1. The maximum flowrate achievable during an SIT discharge test is restricted by the long stroke time of the SIT discharge isolation valves - motor-operated valves with a nominal stroke time of 52 seconds and limitations on SIT pressure during testing. Under large break LOCA accident conditions, the maximum (peak) flowrate through these valves would be approximately 20,000 gpm as compared to typical test values of approximately 8,000 gpm.

Although the flowrate attained during these SIT discharge tests does not qualify as "full flow", it is sufficient to fully stroke the check valve discs to their fully open position. Verification of this is possible using non-intrusive testing techniques. Due to system configuration, however, full-stroke exercising of the SIT discharge check valves can not be performed in any plant operating mode other than refueling when the reactor vessel head is removed.

The SIT discharge check valves are identical with respect to size and design and they are installed in essentially identical orientations exposed to similar operating conditions. Each has been disassembled and inspected several times during previous refueling outages with no abnormal wear or deterioration noted. Additionally, FPL has reviewed the operating and maintenance history of similar valves used throughout the industry under comparable conditions. Based on these reviews and inspections, there has been no evidence of valve degradation with respect to their ability to open and satisfactorily pass the required flow needed to fulfill their safety function. This along with the observation that the SIT flowrate and pressure drop traces obtained during the 1994 refueling outage testing are nearly identical, indicate that this baseline data was taken when each valve was in good working condition.

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	(continued)	

BASIS FOR RELIEF (continued)

Partial-stroke (open) of these valves requires discharging from the SITs to either the reactor coolant system (RCS) or the SIT drain header and RWT. Flow directed to the reactor coolant system during normal plant operation is impossible since the pressure in the SIT cannot overcome RCS pressure to establish flow. Verification of flow via the drain lines to the RWT requires opening two manual containment isolation valves for Unit 1 and an outside manual containment isolation valve and an inside solenoid-operated containment isolation valve for Unit 2. In both cases the potential risk of the loss containment integrity in the event of an accident due to single active failure or dependence on operator action makes this unacceptable and impractical. (Reference NUREG-1482, Paragraph 3.1.1)

In addition to flow testing, each valve is confirmed to be closed under cold shutdown conditions and is subjected to periodic leakage tests. Note that, for this type of valve, the prescribed leakage testing is especially sensitive to internal valve degradation.

ALTERNATE TESTING

Each SIT discharge check valve will be partial-stroke exercised at cold shutdown and full-stroked in the open direction during refueling outage by discharging all four SIT to the reactor vessel.

4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 145 of 236 ADM-29.01 ST. LUCIE PLANT APPENDIX B REQUESTS FOR RELIEF - VALVES (Page 9 of 41) Image: Continued ALTERNATE TESTING (continued) Image: Continued Image: Continued Image: Continued Start ST discharge check valve will be verified closed and leakrate tested in coordance with Relief Request VR-04. During each refueling outage, under a ampling program on a rotating schedule, at least one of the check valves will be on-intrusively tested to verify its disc fully strokes to its backstop. Whould a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants", Paragraph 4.1.2.	REVISION NO .:	PROCEDURE TITLE:	PAGE
ROCEEDURE NO.: FOR PUMPS AND VALVES 145 of 236 ADM-29.01 ST. LUCIE PLANT APPENDIX B REQUESTS FOR RELIEF - VALVES (Page 9 of 41) (Page 9 of 41) RELIEF REQUEST NO. VR-05 (continued) (continued) ALTERNATE TESTING (continued) Stach SIT discharge check valve will be verified closed and leakrate tested in ccordance with Relief Request VR-04. During each refueling outage, under a ampling program on a rotating schedule, at least one of the check valves will be on-intrusively tested to verify its disc fully strokes to its backstop. Should a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,		INSERVICE TESTING (IST) PROGRAM	
ADM-29.01 ST. LUCIE PLANT APPENDIX B REQUESTS FOR RELIEF - VALVES (Page 9 of 41) (Page 9 of 41) RELIEF REQUEST NO. VR-05 (continued) (continued) ALTERNATE TESTING (continued) Each SIT discharge check valve will be verified closed and leakrate tested in ccordance with Relief Request VR-04. During each refueling outage, under a ampling program on a rotating schedule, at least one of the check valves will be on-intrusively tested to verify its disc fully strokes to its backstop. Should a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,			145 of 236
APPENDIX B <u>REQUESTS FOR RELIEF - VALVES</u> (Page 9 of 41) RELIEF REQUEST NO. VR-05 (continued) ALTERNATE TESTING (continued) Each SIT discharge check valve will be verified closed and leakrate tested in ccordance with Relief Request VR-04. During each refueling outage, under a ampling program on a rotating schedule, at least one of the check valves will be on-intrusively tested to verify its disc fully strokes to its backstop. Should a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,	ROCEDURE NO.		
REQUESTS FOR RELIEF - VALVES (Page 9 of 41) RELIEF REQUEST NO. VR-05 (continued) ALTERNATE TESTING (continued) Each SIT discharge check valve will be verified closed and leakrate tested in ccordance with Relief Request VR-04. During each refueling outage, under a ampling program on a rotating schedule, at least one of the check valves will be on-intrusively tested to verify its disc fully strokes to its backstop. Should a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,	ADM-29.01	ST. LUCIE PLANT	
(Page 9 of 41) RELIEF REQUEST NO. VR-05 (continued) ALTERNATE TESTING (continued) Each SIT discharge check valve will be verified closed and leakrate tested in ccordance with Relief Request VR-04. During each refueling outage, under a ampling program on a rotating schedule, at least one of the check valves will be on-intrusively tested to verify its disc fully strokes to its backstop. Should a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,		APPENDIX B	
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on-intrusively tested to verify its disc fully strokes to its backstop. Should a valve be found to be inoperable and incapable of performing its function o open, then the remaining three valves will be non-intrusively tested during the ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,	ampling progra	am on a rotating schedule. at least one of the check va	lves will be
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ame outage, after which the rotational inspection schedule will be reinitiated. This alternative testing as outlined is consistent with the requirements and ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,	o open, then th	ne remaining three valves will be non-intrusively tested	during the
ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,	ame outage, a	after which the rotational inspection schedule will be rein	nitiated.
ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482,			_
ecommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants", Paragraph 4.1.2.	This alternative	testing as outlined is consistent with the requirements	and
Guidelines for Inservice Testing at Nuclear Power Plants', Paragraph 4.1.2.	ecommendatio	ns of NRC Generic Letter 89-04, Position 1 and NURE	-1482,
	Guidelines for	Inservice Testing at Nuclear Power Plants, Paragraph	4.1.2.

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SYSTEM		
Safety Injection	n (2998-G-078 Sh 132; 8770-G-078 Sh 131B)	
COMPONENTS		
V3217		
V3227		
V3237 V3247		
V3247		
<u>CATEGORY</u>		
A/C		
AC		
FUNCTION		
These valves o	pen to provide flowpaths from the safety injection hea	ders to the
	system (RCS) and close to isolate the headers from t	
pressure of the	RCS.	-
PART 10 REQ	UIREMENT	
Check valves s	hall be exercised nominally every 3 months, except as	provided by
	.2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	previded by

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BASIS FOR RE	LIEF	
determining disc testing of these	le check valves with no external means of exercising c position. Consequently, the only practical method for check valves is by injection via the safety injection pro- contents of the safety injection tank (SIT) to the RCS	or stroke umps or
U 1	erations at power, partial flow exercising these valves se neither the SITs nor the safety injection pumps are	
overcoming read Performing a ful	ctor coolant system pressure. Il-flow test of these check valves by SIT discharge is	•
overcoming read Performing a ful because the ma to the RCS do r required by Gen during an SIT di discharge isolati		s of the SITs lition flow as achievable ne SIT es nominal
overcoming read Performing a ful because the ma to the RCS do r required by Gen during an SIT di discharge isolati stroke time of 52 Under large brea through these va values of approv	II-flow test of these check valves by SIT discharge is aximum flowrates attained by discharging the contents not meet the valves' maximum required accident conc heric Letter 89-04, Position 1. The maximum flowrate ischarge test is restricted by the long stroke time of the ion valve. This is based on the motor-operated valve 2 seconds and limitations on SIT pressure during test ak LOCA accident conditions, the maximum (peak) flow alves would be approximately 20,000 gpm as compar- kimately 8,000 gpm. Note also that normal shutdown hocapable of full stroking these valves based on the re-	s of the SITs lition flow as achievable ne SIT is nominal ting. owrate red to test cooling

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	RELIEF REQUEST NO. VR-06 (continued)	

BASIS FOR RELIEF (continued)

The safety injection header check valves are identical with respect to size and design and they are installed in essentially identical orientations exposed to similar operating conditions. Each has been disassembled and inspected several times during previous refueling outages with no abnormal wear or deterioration noted. FPL has additionally reviewed the operating and maintenance history of similar valves used throughout the industry under comparable conditions. Based on these reviews and inspections, there has been no evidence of valve degradation with respect to their ability to open and satisfactorily pass the required flow needed to fulfill their safety function. This, along with the observation that the SIT flowrate and pressure drop traces obtained during the 1994 refueling outage testing are nearly identical, indicate that this baseline data was taken when each valve was in similar good working condition.

In addition to flow testing, each valve is confirmed to be closed under cold shutdown conditions and is subjected to periodic leakage tests. Note that, for this type of valve, leakage testing is especially sensitive to internal valve degradation.

ALTERNATE TESTING

Each safety injection header check valve will be partial-stroke exercised at cold shutdown and full-stroked in the open direction during refueling outages by discharging all four SITs to the reactor vessel.

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	RELIEF REQUEST NO. VR-06 (continued)	
ALTERNATE T	ESTING (continued)	
in accordance w sampling progra	ction header check valve to be verified closed and lea with Relief Request VR-04. During each refueling outa- im on a rotating schedule, at least one of the check va ested to verify its disc fully strokes to its backstop.	ge, under a
to open, then th	be found to be inoperable and incapable of performing e remaining three valves will be non-intrusively tested fter which the rotational inspection schedule will be rein	during the
recommendation	testing as outlined is consistent with the requirements ns of NRC Generic Letter 89-04, Position 1 and NURE nservice Testing at Nuclear Power Plants," Paragraph	EG-1482,

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	RELIEF REQUEST NO. VR-07	
SYSTEM		
Main Steam (877	70-G-079, Sh 1)	
COMPONENTS		
V00447		
V08117 V08148		
00140		
CATEGORY		
С		
FUNCTION		
urbine generator release of steam rupture upstream	en to provide flowpaths from the steam generators to rs - non-safety function. They close to prevent unrest from an unaffected steam generator in the event of a of an MSIV. They are a redundant barrier along wit alve in the opposite main steam line.	tricted a steam line
PART 10 REQU	REMENT	
	all be exercised nominally every 3 months, except as 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
	to the testing in (a) or (b) above, disassembly every ine operability of check valves may be used.	refueling

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BASIS FOR RELIEF

These are simple check valves with no external means of exercising nor for determining obturator position. Due to the high operational temperature of the valves, non-obtrusive testing is impractical. Furthermore, there is no practical means or provision for pressurizing the piping downstream of these valves in order to conclusively verify closure of these valves via back leakage tests.

These are large valves (34-inch NPS) where disassembly is difficult and consumes a considerable amount of plant resources, thus disassembly of both of these valves during each reactor refueling would pose a significant hardship and, based on plant safety considerations, is not warranted. These valves are identical with the same manufacturer, size, model designation, orientation and service conditions.

ALTERNATE TESTING

During each reactor refueling outage at least one of these valves will be disassembled, inspected and manually stroked to verify operability. Should a valve under inspection be found to be inoperable, then the other valve will be inspected during the same outage, after which the rotational inspection schedule will be reinitiated. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods and final close-out inspections.

Following valve re-assembly forward flow operation of the valves will be observed during the ensuing startup.

This alternate testing satisfies the requirements of Generic letter 89-04, Position 2 and agrees with related comments and recommendations in NUREG-1482, Appendix A.

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	RELIEF REQUEST NO. VR-08	
SYSTEM		
Main Steam (29	98-G-079, Sh 1; 8770-G-079, Sh 1)	
COMPONENTS		
V08130		
V08163		
<u>CATEGORY</u>		
с		
C		
FUNCTION		
AFW Pumps 1C	en to provide flowpaths for steam from the stem gene and 2C turbine drivers. They close under accident c ected steam generator and prevent the uncontrolled b erators.	onditions to
DISCUSSION		
determining obtu	e check valves with no external means of exercising our analysis of exercising our and the service of these valves during a service and the se	ng plant

operation at normal operating pressures would require isolating the associated steam generator from the steam supply lines and venting the piping between the closed isolation valve and the check valve. It is considered to be imprudent to isolate a steam supply to the AFW pumps during operation and, in addition, it is undesirable to subject plant personnel to the hazards associated with venting live steam at these operating conditions. Furthermore, it is likely that testing in this manner would provide inconclusive results.

The physical configuration of piping and valves in the steam supply line differs between Unit 1 and Unit 2.

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	olation valve and vent/drain valve is available so that bac the steam supply check valves is possible. In this case.	

testing of one of the steam supply check valves is possible. In this case, the other steam supply check valve must be disassembled to provide a connection for a dedicated air compressor for the backflow test. As a result, testing during normal operation or cold shutdown is not practicable. NUREG-1482, Section 4.1.4 states, "...The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing until a refueling outage..."

For Unit 2, piping immediately upstream of the steam supply check valves has no telltale vent or drain with sufficient vent path capacity to adequately test the valve for closure without imposing overly restrictive leakage limits on the valve well below those required by any safety analyses. To expand the tested system boundary upstream of the valve to encompass a telltale vent or drain with sufficient vent path capacity would impose an undue hardship for the utility. This testing would require all maintenance activities associated with the pressure boundary of the steam generators and significant portions of main steam and feedwater piping to be stopped and the system secured to safely perform the testing. Since this test should only be performed during a refueling outage, much of these systems are undergoing maintenance. As a result, this test could significantly increase outage scope, cost and duration. This is considered an undue burden to the utility when disassembly and inspection of the valves would involve considerably less resources and is an approved alternative in accordance with the guidelines of NRC Generic Letter 89.04, Position 2.

ALTERNATE TESTING

<u>Unit 1</u>

During each reactor refueling outage one of the Unit 1 valves will be verified to close while the other will be disassembled and inspected and manually stroked to verify operability in accordance with OM Part 10, Paragraph 4.3.2.4(c). Following valve reassembly forward flow operation of the valve will be observed during the ensuring startup.

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ALTERNATE T	ESTING (continued)	
Unit 2		
disassembled, in valve under insp will be inspected schedule will be and inspection a and inspections and foreign mate measures may i equipment accor and final close-of flow exercised to This alternate te	actor refueling outage, at least one of these valves will be haspected and manually stroked to verify operability. Show bection be found to be inoperable, then the other valve in d during that same outage, after which the rotational inspe- reinitiated. During activities associated with valve disass and prior to system closure, appropriate precautions will be performed to ensure internal cleanliness standards are me erials are excluded from valve and system internals. The nclude creating controlled work areas, maintaining a tool unting system, installation of covers during non-working p but inspections. Following re-assembly, each valve will be to verify operability.	uld a that unit ection sembly be applied naintained ese and periods e partial-

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	RELIEF REQUEST NO. VR-10	
SYSTEM		
Foodwater Syst	em (8770-G-080, Sh 3)	
i eeuwater Syste		
COMPONENTS		
V09248		
V09280		
CATEGORY		
С		
FUNCTION		
	ose to isolate the respective steam generator to ensur	e adequate
inventory of con-	densate for auxiliary feedwater pump operation.	
PART 10 REQU	IREMENT	
Check values sh	all be exercised nominally every 3 months, except as	provided by
	2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
·		n o fe v o livo ov
	e to the testing in (a) or (b) above, disassembly every nine operability of check valves may be used.	refueling
(Paragraph 4.3.2		
BASIS FOR RE	LIEF	
•	e check valves with no external means of exercising r position. Consequently, the only practical method fo	
-	bse) is by performing a differential pressure back-leak	5
	onfiguration, there is no practical way of reliably perfo	
a test during <u>an</u> y	z plant operational mode. Under steaming conditions	at power,

isolation of the feedwater supply piping is not possible without causing a conditions at power, isolation of the feedwater supply piping is not possible without causing a conditions at power, isolation of the feedwater supply piping is not possible without causing a severe plant transient. Under shutdown conditions, backflow testing would require draining a significant portion of the upstream feedwater piping and attempting to seat the subject valves by injection of water through the associated 1-inch downstream drain valves. It is highly unlikely that such a test could be performed successfully and conclusively.

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]		

ALTERNATE TESTING

During each reactor refueling outage at least one of these valves will be disassembled, inspected and manually stroked to verify closure capability. Should a valve under inspection be found to be inoperable, then the other valve will be inspected during the same outage, after which the rotational inspection schedule will be reinitiated. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods and final closeout inspections.

This alternate testing agrees with the guidelines of NRC Generic Letter 89-04, Position 2 and, as such, is considered to be approved upon submittal.

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	RELIEF REQUEST NO. VR-11	
SYSTEM		
Feedwater Syst	em (2998-G-080, Sh 2B; 8770-G-080, Sh 4)	
	<u>}</u>	
V09303 (Unit 2	2 only)	
V09304	5,	
V09305		
<u>CATEGORY</u>		
с		
FUNCTION		
	pen to provide flowpaths from each auxiliary feedwate e condensate storage tank to ensure adequate pump oons.	
PART 10 REQL	JIREMENT	
	hall be exercised nominally every 3 months, except as .2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
	e to the testing in (a) or (b) above, disassembly every mine operability of check valves may be used. 2.4(c))	refueling
BASIS FOR RE	LIEF	
determining dis disk position (or	le check valves with no external means of exercising is k position. Consequently, the only practical method for pen) is by performing a pump flowrate test. Full stroke perified, per Generic Letter 89-04, Position 1, by attainir	er determining e capability

maximum accident flowrate through each valve. There is no flowrate instrumentation available to verify valve full-stroke exercising of these valves as required by the Generic Letter.

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(continued)			
BASIS FOR RELIEF (continued)			
	ch these valves are installed are provided with permane flowrate such that the maximum possible is insufficient t		

that restrict the flowrate such that the maximum possible is insufficient to fully open these valves. For this reason, non-intrusive testing would be ineffective and inconclusive and thus is not practical.

The associated auxiliary feedwater pumps are normally idle in standby status operated only during test periods, thus these valves see little service and service-related failures are unlikely.

ALTERNATE TESTING

During quarterly pump testing each of these valves will be partial-stroked exercised via recirculation through the minimum flow test circuits with no flow measurements.

During each reactor refueling outage at least one of these valves will be disassembled, inspected and manually stroked to verify operability. Should a valve or valves under inspection be found to be inoperable, then the other valve or valves in that unit will be inspected during the same outage, after which the rotational inspection schedule will be reinitiated. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods and final close-out inspections.

Following re-assembly, each valve will be partial-flow exercised to verify operability.

This alternate testing agrees with the guidelines of NRC Generic Letter 89-04, Position 2 and, as such, is considered to be approved upon submittal.

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	REQU	ESTS FOR RE (Page 23	ELIEF - VALVES of 41)	
		(1 490 20	,	
	REL	LIEF REQUES	T NO. VR-12	
SYSTEM				
Instrument Air S	System (2998-)	G-085 Sh 2A;	8770-G-085, Sh 2A&3)
	<u>}</u>			
Unit 1:				
Vacuum Brea				
	V18294 V18295	V18695 V18696	V18699 V18099	
V 10291	V 10295	V 10090	10033	
Unit 2:				
Vacuum Brea	iker Supply			
V18290 V18294				
V18291	V18295			
<u>CATEGORY</u>				
С				
FUNCTION				
These valves close to trap air in the accumulators supplying the primary containment vacuum breaker valves and, for Unit 1, the MSIVs in the event of a loss of pressure in the plant main instrument air headers.				
PART 10 REQUIREMENT				
During plant operation, each check valve shall be exercised or examined in a manner which verifies obturator travel to the closed, full-open or partially open position required to fulfill its function. (Paragraph 4.3.2.2(a))				

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e check values with no external means of exercising	por for		
-			
· · ·			
	INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES ST. LUCIE PLANT APPENDIX B REQUESTS FOR RELIEF - VALVES (Page 24 of 41) RELIEF REQUEST NO. VR-12		

For these applications only one valve need close. Both valves are designated as ISI Class 2 (Class 3 for MSIV accumulators) and, as such, both valves in each line will be treated with the same quality assurance requirements.

ALTERNATE TESTING

Either of these valves will be verified to close by performing a back-leakage on the series combination of valves. In the event that both valves fail to close, the combination will be declared inoperable and both valves will be repaired or replaced, as appropriate.

This is consistent with the guidance provided in NUREG-1482, Paragraph 4.1.1.

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	RELIEF REQUEST NO. VR-13	
SYSTEM		
EDG Fuel Oil Ti	ransfer (2998-G-086 Sh 1; 8770-G-086 Sh 1)	
COMPONENTS	·	
V17204		
V17214		
CATEGORY		
С		
FUNCTION		
•	een to provide flowpaths from the diesel generator fue spective fuel oil day tanks.	l oil transfer
PART 10 REQU	IREMENT	
	all be exercised nominally every 3 months, except as 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
BASIS FOR RE	LIEF	

<u>NOTE</u>

The diesel fuel oil system was optionally upgraded to Class 3 and thus, testing is optional per ASME B&PV Code, Section XI, Paragraph IWA-1320(e). Consequently, this relief request is provided for information only and approval is not required.

These are simple check valves with no external means of exercising nor for determining disk position. Consequently, the only practical method of determining disk position (open) is by performing a pump flowrate test. Full stroke capability must then be verified, per Generic Letter 89-04, by attaining the maximum accident flowrate through each valve.

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BASIS FOR RELIEF (continued)

The only readily available test circuit for the EDG fuel oil transfer pumps consists of the normal day tank fill lines from the diesel oil storage tanks. There is a minimum flow recirculation line, however no flow instrumentation is installed that could provide flowrate information. Using the normal day tank fill line, a pump flowrate can be determined by calculating the fill rate of the day tanks, however, considering the usable volume of a day tank (150 gal.) and the rated capacity of the pumps (25 gpm @ 80 ft. head), the run time to refill a tank is insufficient to provide reliable and consistent flowrate data.

An alternate flowpath can be made available but is significantly more difficult to align and set up a flow test. This alternate method requires adjusting the levels in the main fuel oil tanks and then aligning to pump between the tanks. Although this can provide for adequate flowrate determination and valve performance evaluation, it is a complex test to perform and impractical to perform quarterly or even during cold shutdown periods.

Considering that the capacity of these lines to provide fuel oil to the day tanks (in excess of 25 gpm) is significantly greater than the predicted oil consumption of the diesel generators (approximately 5 gpm) and the fact that the valves are seldom operated (only during diesel generator testing), extending the test interval to 2 years will not significantly affect the reliability and availability of the diesel generators with respect to the capability of performing their intended safety function.

ALTERNATE TESTING

Each of these valves will be partial-stroke exercised quarterly and full-stroke tested every two (2) years.

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	RELIEF REQUEST NO. VR-14	
SYSTEM		
Containment Sp	ray (2998-G-088 Sh 1; 8770-G-088, Sh 1)	
COMPONENTS		
∨07119		
V07120		
CATEGORY		
с		
FUNCTION		
the containment	en to provide flowpaths from the refueling water tanks spray and safety injection suction headers. They close ontainment sump water back to the associated RWT a uation signal (RAS).	se to prevent
PART 10 REQU	IREMENT	
	all be exercised nominally every 3 months, except as 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
	e to the testing in (a) or (b) above, disassembly every nine operability of check valves may be used. 2.4(c))	refueling
(⊢arayrapri 4.3.∡	L.4(U <i>))</i>	

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BASIS FOR RELIEF

These are simple check valves with no external means of exercising nor determining obturator position. Full stroke exercising (open) of these valves would require the simultaneous operation of one high pressure safety injection (HPSI) pump, one low pressure safety injection (LPSI) pump, and one containment spray pump to verify that each valve can pass the maximum design accident flow. Such a test is not practical during any plant operational mode. Non-intrusive testing (NIT) of these valves necessarily requires that each valve undergo a full stroke cycle induced by flow through the associated piping. In this case, the maximum flowrate possible in the line is approximately 4,500 gpm - the nominal design flowrate of the LPSI pumps. At this flowrate, taking into consideration that these 24-inch NPS valves are on the suction side of the pumps and not subjected to a starting pressure surge at the pump discharge; they will not travel to the full-open position with a backstop impact when the associated LPSI pump is started or running. This precludes any meaningful, reliable, and conclusive non-intrusive testing.

These are large valves (24-inch NPS) where disassembly is difficult and consumes a considerable amount of plant resources, thus disassembly of both of these valves during each reactor refueling would pose a significant hardship and, based on plant safety considerations, is not warranted. In addition, access for disassembly requires draining a significant portion of the safety injection system piping creating a significant and unnecessary load on the plants' radwaste processing systems.

These valves are identical with the same manufacturer, size, model designation, orientation and service conditions.

ALTERNATE TESTING

During quarterly pump testing each of these valves will be partial-stroke exercised via recirculation through the minimum flow test circuits of the various safety injection systems.

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ALTERNATE T	ESTING (continued)	

During each reactor refueling outage at least one of these valves will be disassembled, inspected and manually stroked to verify OPEN and CLOSED operability. Should a valve under inspection be found to be inoperable, then the other valve will be inspected during the same outage, after which the rotational inspection schedule will be reinitiated. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods and final close-out inspections.

Following re-assembly, each valve will be partial-flow exercised open and tested closed to verify operability.

This alternate testing agrees with the guidelines of NRC Generic Letter 89-04, Position 2 and with related comments and recommendations in NUREG-1482, Appendix A.

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EVETEM	RELIEF REQUEST NO. VR-10	
<u>SYSTEM</u>		
Containment Sp	ray (2998-G-088 Sh 2; 8770-G-088, Sh 2)	
COMPONENTS		
V07172 V07174		
CATEGORY		
С		
FUNCTION		
	lves open to provide flowpaths from the containment s ay and safety injection pumps during post-accident red	•
PART 10 REQU	IREMENT	
	all be exercised nominally every 3 months, except as 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
	e to the testing in (a) or (b) above, disassembly every nine operability of check valves may be used. 2.4(c))	refueling
BASIS FOR RE	LIEF	
determining obtu there is no water sump for such a	e check valves with no external means of exercising our arator position. Exercising with system flow is not prace r inventory available in the containment sump and floc test is undesirable and impractical since it would have etting the chemistry of the RCS by introducing contam on system.	ctical since oding the e the

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BASIS FOR RELIEF (continued)

These are large valves (24-inch NPS) where disassembly is difficult and consumes a considerable amount of plant resources, thus disassembly of both of these valves during each reactor refueling would pose a significant hardship and, based on plant safety considerations, is not warranted. In addition, access for disassembly requires draining a significant portion of the safety injection system piping creating a sizable load on the plants' radwaste systems.

Each of these valves has been disassembled and inspected in the past and they have not displayed any indication of degradation that would impede their capability to perform their safety function to open. These valves are identical with the same manufacturer, size, model designation, orientation and service conditions.

Note that these valves remain closed in a benign medium under all but accident conditions and see no actual operation, thus service related failure is unlikely.

ALTERNATE TESTING

During each reactor refueling outage at least one of these valves will be disassembled, inspected and manually exercised on a sequential and rotating schedule. If, in the course of this inspection a valve is found to be inoperable with respect to its function to fully open, then the other valve will be inspected during the same outage. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods and final closeout inspections.

This alternate testing agrees with the guidelines of NRC Generic Letter 89-04, Position 2 and agrees with related comments and recommendations in NUREG-1482, Appendix A.

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SYSTEM		
Containment Sp	ray (2998-G-088 Sh 2; 8770-G-088, Sh 2)	
COMPONENTS		
V07192		
V07193		
CATEGORY		
С		
FUNCTION		
to the containme containment spr	lves open to provide flowpaths from the containment sent spray headers in containment. They close to isola ay system from the containment atmosphere and thus the event of a passive failure outside the containmer	te the prevent
PART 10 REQU	IIREMENT	
Check valves sh	all be exercised nominally every 3 months, except as	provided by

As an alternative to the testing in (a) or (b) above, disassembly every refueling outage to determine operability of check valves may be used. (Paragraph 4.3.2.4(c))

Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)

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BASIS FOR RELIEF

These are simple swing check valves with no external means of exercising or determining obturator position. Exercising to the open position with system flow would require operating each containment spray pump at nominal accident flowrate. Since no recirculation flowpath exists downstream of these valves, flow would necessarily be directed into the containment spray headers with the undesirable result of dousing personnel and equipment in the containment with radioactive contaminated borated water. Such a test is obviously impractical. Closure testing of the valves could only be performed by a back-leakage test. This is also impractical since back pressure cannot be applied to the valves due to the multiple open spray nozzles downstream of the vales. Due to their location inside containment and associated access difficulties, disassembly and inspection can only be performed during extended unit outages (refueling). Partial-flow testing using compressed air is possible but requires draining the entire containment spray discharge header. The partial-stroke air flow test for determining valve operability is only warranted after the headers have been drained following valve disassembly and inspection.

Currently, and for the last eight years, these valves have been disassembled and inspected during each refueling on an alternating schedule in accordance with NRC Generic Letter 89-04 - one valve each unit outage. Although it is possible to continue this activity, it has proven to be an extreme burden, potential personnel safety hazard, and undue hardship on the plant staff where the cost in plant resources to perform the inspections is not commensurate with any potential gain in plant safety derived from these inspections.

Each of these valves is located within the containment building in a horizontal run of pipe immediately upstream of the respective containment spray header at an elevation of approximately 148'. This is approximately 86 feet above the containment building operating deck. Since there is no permanent means of access to these valves (e.g., decking, grating, ladders), in order to gain access to each valve, the containment polar crane must be parked and locked in position below the subject valve and a scaffold approximately 25 feet high must be erected resting on the crane girders. Note that the working surface at the crane girders is approximately 60 feet above the operating deck. Working under these conditions poses significant safety concerns to labor and inspection crews during scaffold erection and disassembly as well as valve disassembly and inspection activities. Furthermore, the total cost in resources to perform this evolution, including scaffolding and inspection activities, is typically 75-80 man-hours.

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BASIS FOR RELIEF (continued)			
The containment building polar crane is typically a critical element with respect to			
the overall refueling outage schedule and duration. During the period of time that			
the scaffolding is being erected, installed, or being disassembled and removed the			
polar crane must be locked in place and disabled. Because of this, disassembly			

and inspection of these valves has a high probability of negatively impacting the unit outage with a potential for extending the outage duration without a commensurate increase is safety.

These valve normally remain idle in a dry condition with no mechanism, environmental or otherwise, that could damage a valve or cause any significant inservice deterioration. Indeed, the most probable cause of failure, albeit small, is probably related to the potential personnel error associated with the repeated unnecessary disassembly and re-assembly activities. Since the inspection effort has been in effect, each of these valves has been inspected several times and each time, no significant degradation or deterioration has been noted. The inspection history of these valves is provided below. Based on the results of the past inspections, it is clear that these valves are not subject to deterioration. In addition, an exhaustive search of the INPO NPRDS database indicates that there have been no relevant service failures of similar valves subject to similar operating conditions and environment.

UNIT 1			UNIT 2		
VALVE	INSP. DATE	RESULTS	VALVE	INSP. DATE	RESULTS
V07192	11/91	SAT	V07192	11/90	SAT
	11/94	SAT		3/94	SAT
	11/97	SAT		5/97	SAT
V07193	4/93	SAT	V07193	8/92	SAT
	6/96	SAT		11/95	SAT

Table:	Test/Inspection	Summary
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	(continued)	
BASIS FOR R	ELIEF (continued)	

These values open to provide flowpaths to the respective containment spray headers in order to limit containment pressure in the unlikely event of a loss of coolant accident. They have no safety significance with respect to core melt probability and thus, per St. Lucie probabiliatic analysis, are considered to be low safety significant components.

Each of these valves is identical with respect to design, manufacturer, model number, service conditions and valve orientation. By inspecting one valve every other unit refueling, effectively combining the valves from both units into a single inspection group, inspection of each valve will be performed nominally every six (6) years which is in compliance with the precepts presented in NRC Generic Letter 89-04, Position 2. In this regard, this request for relief satisfies the requirements as stated in GL 89-04 and thus should be considered "pre-approved".

Based on the foregoing discussion, it is clear that the continued disassembly and inspection of these valves on the alternating schedule for each unit imposed by a simple interpretation of NRC Generic Letter 89-04 is unwarranted. Little value, with respect to plant safety, is gained by these efforts while the cost in terms of plant resources, plant downtime, and personnel safety concerns is great. It is also clear that continued inspections of these valves at the proposed frequency will adequately ensure the continued operability of these valves and ensure the health and safety of the public while providing the plant staff some relief from this unnecessary burden.

ALTERNATE TESTING

One of these valves in each unit will be disassembled and inspected every other unit outage. Partial-flow exercising will be performed on each valve following disassembly and inspection. Successive inspections will be performed in a defined sequence such that inspections are performed in each unit on an alternating basis.

In the event that a valve is found to be inoperable, whereby it could not perform its intended function to open, the other valve in that unit will be similarly disassembled and inspected prior to startup of that unit. In addition, prior to the end of the next refueling outage of the other unit, both check valves in that unit will likewise be disassembled and inspected.

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	RELIE	F REQUEST N	O. VR-18			
<u>SYSTEM</u>						
Emera Diesel G	Generator System	ns (2998-G-096	Sh 1C&2C; 8770)-G-096		
Sh 1C & 2C)			,			
COMPONENTS						
Unit 1:						
FCV-59-2A1 FCV-59-3A1		SE-59-4A SE-59-5A	SE-59-3B SE-59-4B SE-59-5B SE-59-6B			
Unit 2:						
FCV-59-2A1 FCV-59-3A1	FCV-59-1B1 FCV-59-2B1 FCV-59-3B1 FCV-59-4B1	SE-59-4A SE-59-5A				
V59183 V59187 V59191 V59192	V59193 V59197 V59198 V59199	V59231 V59235 V59239 V59240	V59241 V59245 V59246 V59247			
<u>CATEGORY</u>	CATEGORY					
B & C						
FUNCTION						
These valves operate as required to energize and to engage/disengage the emergency diesel generator air start motors.						

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	(continued)	
PART 10 REQU	JIREMENT	
•••	A and B valves shall be exercised nominally every 3 mo ded by Paragraphs 4.2.1.2, 4.2.1.5 and 4.3.2.7. 1)	onths,
	nall be exercised nominally every 3 months, except as p 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	rovided by
BASIS FOR RE	LIEF	
	NATE	<u> </u>
The diese	<u>NOTE</u> I fuel oil and air start systems were optionally upgraded	to
	a ruer on and an start systems were optionally upgraded	.0

Class 3 and thus, testing is optional per ASME B&PV Code, Section XI, Paragraph IWA-1320(e). Consequently, this relief request is provided for information only and approval is not required.

These valves are associated with the four (redundant) air start motors related to the respective emergency diesel generators. There are no external position indicators or other convenient means of verifying operation other than evaluating their performance during diesel engine start. Due to the redundant design, individually testing each of these valves requires isolation of the component then proving that the diesel generators successfully start and operate properly. Performing such testing on a quarterly basis is not consistent with the St. Lucie EDG Testing Program and, based on current testing philosophy, is not considered to be required to ensure EDG availability.

ALTERNATE TESTING

At least once every two (2) years these valves will be tested, as appropriate, in conjunction with the EDG comprehensive testing program.

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	RELIEF REQUEST NO. VR-19	
SYSTEM		
Heating, Ventilat	ion and Air Conditioning (2998-G-878; 8770-G-878)	
<u>COMPONENTS</u>		
V-25-20		
V-25-21		
CATEGORY		
AC		
FUNCTION		
These valves op containment isol	en as required to limit containment internal vacuum an ation.	d close for
PART 10 REQU	IREMENT	

- 1. Within every 6 month period operability tests shall be performed unless historical data indicates a requirement for more frequent testing.
- 2. Leak tests shall be performed every 2 years unless historical data indicates a requirement for more frequent testing.

BASIS FOR RELIEF

These check valves are tested in such a way that immediate access to each valve is required. Since these valves are located inside the primary containment building, routine access during power operation is considered to be impractical. At 100% power, the dose rates on 62' reactor containment building in the vicinity of the vacuum relief valves are 42 mrem/hour gamma and 300 mrem/hour neutron. These dose rates are documented at floor level and the vacuum relief valves are located 11 feet off the floor at the 73' elevation. The source of radiation streaming in this area is the gap between the 6 foot high bio-wall and the reactor head missile shield which would suggest that dose rates would be slightly higher at the actual vacuum relief valve location. Thus, operational testing can only be performed during cold shutdown conditions.

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	(continued)				

BASIS FOR RELIEF (continued)

Leakrate testing of these valves is performed in accordance with the St. Lucie Containment Leakage Rate Testing Program (Technical Specification, Paragraph 6.8.4 h.). This Program allows extension of leakrate testing beyond the 2-year interval based on 10 CFR 50 Appendix J, Option B. There is no overriding justification nor engineering issue that demands more frequent testing than that required by Appendix J and the St. Lucie Containment Leakrate Testing Program.

ALTERNATE TESTING

Each of these valves will be subjected to an operability test (opened and closed) during plant cold shutdown periods. Testing during cold shutdowns will be on a frequency determined by intervals between shutdowns as follows:

- For cold shutdown periods occurring at intervals of 6 months or longer each shutdown.
- For cold shutdown periods occurring at intervals of less than 6 months testing is not required unless 6 months have passed since the last cold shutdown test.

Cold shutdown testing of pumps and valves will commence within 48 hours of entering cold shutdown and continue until testing of all pumps and valves designated for cold shutdown testing during the outage is complete or the unit is ready to return to power. For extended outages, testing need not be commenced within 48 hours provided all required testing is completed prior to startup. If pump and valve testing is not begun within the 48-hour period then both of these valves will be tested prior to startup. Where plant conditions or other circumstances arise that preclude testing of a valve, a unit will not be retained in Mode 3 for the sole purpose of completing testing.

Leakrate testing will be performed on a schedule as set forth in the St. Lucie Containment Isolation Valve Leakrate Testing Program.

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	RELIEF REQUEST NO. VR-21	
SYSTEM		
Safety Injection	System (2998-G-078, Sh 130A)	
COMPONENTS		
V3102		
V3103		
CATEGORY		
С		
FUNCTION		
pumps to the Re	en to provide flowpaths from the high pressure safety efueling Water Tank (RWT) to provide for minimum flo ump in the event if is operating under low or no flow o	w through
PART 10 REQU	IREMENT	
	all be exercised nominally every 3 months, except as 2.2, 4.3.2.3, 4.3.2.4., and 4.3.2.5. (Paragraph 4.3.2)	provided by
	e to the testing in (a) or (b) above, disassembly every nine operability of check valves may be used. (Parag	-
BASIS FOR RE	LIEF	
determining obtu determining disk capability must b maximum accide	e check valves with no external means of exercising r irator position. Consequently, the only practical methor position (open) is by performing a pump flowrate test be verified, per Generic Letter 89-04, Position 1, by at ent flow through each valve. There is no installed flow able with which this determination can be made.	od for . Full stroke taining the

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		•.		
BASIS FOR RE	LIEF (continued)			
	rification of full-stroke operation is not practical since the			
provided with pe	ermanently installed orifices that restrict flow to a quantity	less than		
that required to	fully open the valves.			

The associated high pressure safety injection pumps are normally idle in standby status and are operated only during test periods, thus valves see little service and service-related failures are unlikely.

These valves are identical with the same manufacturer, size, model designation, orientation, and service conditions.

ALTERNATE TESTING

During quarterly pump testing each of these valves will be partial-stroke exercised via recirculation through the minimum flow test circuits with no flow measurements.

During each reactor refueling outage, at least one of these valves will be disassembled, inspected, and manually stroked to verify operability. Should a valve under inspection be found to be inoperable, then the other valve will be inspected during the same outage, after which the rotational inspection schedule will be retained. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods, and final close-out inspections.

Following reassembly, each valve will be partial-flow exercised open and tested closed to verify operability.

This alternate testing agrees with the guidelines of NRC Generic Letter 89-04, Position 2 and with related comments and recommendations in NUREG-1482, Appendix A.

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REFUELING INTERVAL TESTING				
ASME/ANSI OM-Code, Part 10, Paragraphs 4.2.1.2 and 4.3.2.2 allow deferral of testing of certain valves to refueling where completion of the Code-required testing during plant power operation or cold shutdown periods is not practicable. NUREG-1482, Guidelines For Inservice Testing At Nuclear Power Plants, Chapter 3, gives further guidance for determining when test deferral is appropriate and the basis for justifying deferral. This appendix provides those test justifications for the instances at St. Lucie where test deferral to refueling is necessary. Each justification is based on the OM-Code and relevant portions of NUREG-1482.				

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REFUELING JUSTIFICATION NO. RFJ-01			
SYSTEM			
Chemical and Volume Control (8770-G-078, Sh 120B)			
COMPONENTS			
V2430			
V2431			
CATEGORY			
С			
FUNCTION			
coolant system a when a HPSI pu These valves are	ves open to provide a flowpath for boron injection to t and the pressurizer auxiliary spray. They are required mp is utilized for hot leg injection. (FUSAR Appendix e not required to close or to provide containment isola idered to be in operation during a LOCA.	to pass flow 6C.2)	
DISCUSSION			
Opening either of operation would affect plant safet and nozzle woul- pump must be u	hese valves, wither SE-02-03 or SE-02-04 must be op of these valves (or failure in the open position) during cause an RCS pressure transient that could potential by and lead to plant trip. In addition, the pressurizer s d be subjected to undesirable thermal shock. Further sed to develop the required flow. For this to occur, the e to satisfy Low Temperature Over Pressure concernant	plant ly adversely pray piping , a HPSI ne vent paths	

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ALTERNATE T	ESTING	
Check valve V2 Paragraphs 4.3.	430 will be part stroke exercised quarterly per Part 10 2.2(d) and (g).	
Check valve V2 Part 10 Paragra	431 will be part stroke exercised during each cold shu phs 4.3.2.2(b).	tdown per
	ueling outage these valves will be full stroked. This is es presented in Generic Letter 89-04 Position 1.	consistent
	•	

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	REFUELING JUSTIFICATION NO. RFJ-02	
<u>SYSTEM</u>		
Chemical and V A&B)	olume Control (2998-G-078, Sh 121 A&B 8770-G-07	8. Sh 121
COMPONENTS	<u>.</u>	
V2177		
V2190		
V2191		
V2443 V2444		
V2526 (Unit 2 o	nlv)	
CATEGORY		
С	· ·	
FUNCTION		
•	provide a flowpath for emergency boration from the b pumps to the suction of the charging pumps.	ooric acid
•	provide a flowpath for emergency boration via gravity akeup tanks to the suction of the charging pumps.	drain from
	provide a flowpath from the Refueling Water Tank (R narging pumps as an alternate supply of borated wate ttion.	

V2443 and V2444 open to provide flowpaths from the BAM pumps to the charging pump suction header for emergency boration.

In Unit 2, V2526 is an additional check valve leading from the boric acid tanks and pumps to the charging pump suction header that must open for emergency boration.

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	(continued)	

These are simple check valves with no external means of exercising or for determining obturator position. Thus, testing these valves in the open direction requires system flow. Since there is no convenient recirculation flowpath capable of full-flow (120 gpm) the only practical flowpath is into the RCS via three charging pumps. Injection into the RCS results in the introduction of highly concentrated boric acid solution from the boric acid makeup tanks to the suction of the charging pumps and thence to the RCS. This would result in the addition of excess boron to the RCS. The rapid insertion of negative reactivity would result in an RCS cooldown and de-pressurization which, given a large enough boron addition, could result in an unscheduled plant trip and a possible safety injection system initiation. Except for BAM Pump Discharge Check Valves, V2443 and V2444, partial-stroke exercising presents the same problems with respect to boron injection as does full-stroke exercising. V2443 and V2444 can be exercised by recirculating to the BAM tanks, however, there is no flow instrumentation available to verify full-stroking of these valves.

During cold shutdown, the introduction of excess quantities of boric acid into the RCS is undesirable from the aspect of maintaining proper plant chemistry and the inherent difficulties that may be encountered during the subsequent startup due to over-boration of the RCS. The waste management system would also be overburdened by the large amounts of RCS coolant that would require processing to decrease the boron concentration at startup. Since the boron concentration is normally increased to a limited extent for shutdown margin prior to reaching cold shutdown, a part stroke exercise of these valves could be performed at that time.

ALTERNATE TESTING

Each of these check valves, except for V2443 and V2444, will be part stroke exercised during each cold shutdown per Part 10, Paragraphs 4.3.2.2(d) and (g).

Valves V2443 and V2444 will be part stroke exercised quarterly.

Each of these check valves will be full-stroke exercised during each reactor refueling outage.

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	REFUELING JUSTIFICATION NO. RFJ-03	
SYSTEM		
Safety Injection	System (2998-G-078, Sh 130A; 8770-G-078, Sh 130A	.)
COMPONENTS		
V3101 V3103		
CATECODY		
CATEGORY		
С		
FUNCTION		
pumps to the re	pen to provide flowpaths from the high-pressure safety fueling water tank (RWT) to provide for minimum flow t as in the event they are operating under low or no flow	through the
DISCUSSION		
determining obturequires system	e check valves with no external means of exercising o urator position. Thus, testing these valves in the open flow. There is no flowrate instrumentation available in to verify valve full stroke exercising as defined by 9-04, Position 1.	direction
	, these valves can be full flow tested and the flowrates	

The flowpath for this test is from the refueling cavity to the RWT via the HPSI pump mini-flow recirculation line. The flowrate can be calculated by determining the increase in RWT volume over a measured period of time. Since this test procedure reduces RCS inventory it can only be performed during refueling outages with the reactor head removed, permitting refueling cavity water inventory to be pumped to the RWT.

ALTERNATE TESTING

During quarterly pump testing each of these valves will be partial-stroke exercised via recirculation through the minimum flow test circuits with no flow measurements.

During each reactor refueling outage each of these valves will be full-flow tested.

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	REFUELING JUSTIFICATION NO. RFJ-04	
SYSTEM		
Safety Injection	(2998-G-078, Sh 130A; 8770-G-078, Sh 130A)	
<u>COMPONENTS</u>		
V3401		
V3410		
10110		
<u>CATEGORY</u>		
С		
FUNCTION		
	en to provide flowpaths from the refueling water tanks nent sumps to the suction of the associated high-pres pumps.	

These are simple check valves with no external means of exercising or for determining obturator position. Thus, testing these valves in the open direction requires system flow. The only flowpath available during normal power operation is recirculating RWT water via the HPSI mini-flow line that results in only partial-stroke exercising. Full stroke exercising of these valves to the open position requires injection into the RCS via the HPSI pumps. During plant operation this is precluded because the HPSI pumps can not develop sufficient discharge pressure to overcome primary system pressure. At cold shutdown, there are several issues that make exercising impractical, including:

1. There is no available reservoir in the reactor coolant system to accept the injected water and the shutdown cooling system can not provide sufficient letdown flow back to the RWT to accommodate full design flow from the RWT while maintaining the necessary core cooling function;

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DISCUSSION	(continued)	
	sive quantities of boric acid injected during such testin namper the ensuing startup; and	g would
to preclude the pressu	d shutdown conditions, operation of the HPSI pumps is e RCS system pressure transients that could result in a pre-temperature limits specified in the St. Lucie Technic ons, Section 3.4.9.	exceeding
•	the only practical opportunity for full-flow testing these ueling outages when water from the RWT is used to fill avity.	
ALTERNATE T	ESTING	
	ill be partial-flow exercised during quarterly testing of the ninimum flow circuit and full-flow exercised during each e.	

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SYSTEM		
Safety Injection	(2998-G-078, Sh 130A; 8770-G-078, Sh 130A)	
<u>COMPONENTS</u>		
V3414		
V3427		
CATEGORY		
С		
FUNCTION		
•	pen to provide flowpaths from the respective HPSI pump afety injection headers. They close to prevent recircula	•
DISCUSSION		
determining obture requires system requires injection precluded becau- to overcome prin	e check valves with no external means of exercising or urator position. Thus, testing these valves in the open flow. Full stroke exercising of these valves to the oper n into the RCS via the HPSI pumps. During plant oper use the HPSI pumps can not develop sufficient discharg mary system pressure. At cold shutdown, there are sev ben exercising impractical, including:	direction n position ation this is ge pressure
injected wa letdown flo	o available reservoir in the reactor coolant system to ac ater and the shutdown cooling system can not provide s w back to the RWT to accommodate full design flow fro maintaining the necessary core cooling function;	sufficient

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DISCUSSION	continued)		
	sive quantities of boric acid injected durir amper the ensuing startup; and	ng such testing would	
to preclude the pressu	d shutdown conditions, operation of the H RCS system pressure transients that co re-temperature limits (LTOP) specified in ons, Section 3.4.9.	ould result in exceeding	
pump is used to specified by the refilled on an as incorporated int	cising of these valves is performed when refill an SIT. The acceptable SIT level a Technical Specifications are very narrow -needed basis; therefore, the partial flow o a periodic test. Alternate flowpaths for esign pressure of the associated piping.	and pressure bands / and the SITs are only test can not readily be	
perform partial f following cold sl is maintained at that the contain and both manua lineup breaches 3.6.1.1, and the controls. Routir	ter to the RWT through containment pen ow testing of these valves. This evolution outdown outages to ensure the boron con- concentrations required for safety injection nent isolation valves, one of them a man I isolations on Unit 2, be opened to comp containment integrity, as defined in Tech refore can only be aligned infrequently un e quarterly use of this flowpath violates to luded in Modes 1, 2, 3, and 4.	on is normally performed incentration in the headers on. This method requires rual isolation on Unit 1, plete the flowpath. This innical Specifications onder strict administrative	/R4
ALTERNATE T	ESTING		
tanks will only b Specification lim	I be part-stroke exercised open while ref e refilled as required to maintain them wi its. An SIT will not necessarily be filled f cising any one of these check valves.	thin the Technical	·
each cold shutd	alves will be verified closed quarterly, pa own per Part 10, Paragraphs 4.3.2.2(d) a during each reactor refueling outage.		
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	REFUELING JUSTIFICATION NO. RFJ-06	
SYSTEM		
Safety Injection	(2998-G-078, Sh 130B; 8770-G-078, Sh 130B)	
COMPONENTS		
V07000		
V07001		
CATEGORY		
с		
FUNCTION		
•	en to provide flowpaths from the refueling water tanks e associated low-pressure safety injection pumps.	s (RWTs) to
DISCUSSION		
These are simpl	e check valves with no external means of exercising o	or for

determining obturator position. Thus, testing these valves in the open direction requires system flow. The only flowpath available during normal power operation is recirculating RWT water via the LPSI mini-flow line that results in only partial-stroke exercising. Full stroke exercising of these valves to the open position requires injection into the RCS via the LPSI pumps. During plant operation this is precluded because the LPSI pumps can not develop sufficient discharge pressure to overcome primary system pressure. At cold shutdown, there is no available reservoir in the reactor coolant system to accept the injected water and the shutdown cooling system can not provide sufficient letdown flow back to the RWT to accommodate full design flow from the RWT while maintaining the necessary core cooling function. Also, the excessive quantities of boric acid injected during such testing would seriously hamper the ensuing startup. Therefore, the only practical opportunity for full-flow testing these valves is during refueling outages when water from the RWT is used to fill the refueling cavity.

ALTERNATE TESTING

These valves will be partial-flow exercised during quarterly testing of the LPSI pumps via the minimum flow circuit and full-flow exercised during each reactor refueling outage.

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	REFUELING JUSTIFICATION NO. RFJ-07	
<u>SYSTEM</u>		
Safety Injection	System (2998-G-078, Sh 130B; 8770-G-078, Sh 130B)	
COMPONENTS		
V3104 V3105		
CATEGORY		
С		
FUNCTION		
pumps to the re- the respective p conditions. The	en to provide flowpaths from the low-pressure safety inj fueling water tanks (RWTs) to provide for minimum flow umps in the event they are operating under low or no flo y close during shutdown cooling and long-term recircula ation through idle pump(s).	through w

These are simple check valves with no external means of exercising or for determining obturator position. Thus, testing these valves in the open direction requires system flow. There is no flowrate instrumentation available in the respective minimum flow lines to verify valve full stroke exercising as defined by Generic Letter 89-04, Position 1. Due to the installation of flow orifices in these lines, the maximum flow velocity achievable is approximately 10 ft/sec. which is considerably less than the 32.8 ft/sec. needed to fully open the valves. For this reason the use of non-intrusive techniques for verifying valve operability is impractical.

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	(continued)	
	(continued)	
DISCUSSION	(continued)	
v v	these valves can be full-flow tested and the flowrates	
•	r this test is from the refueling cavity to the RWT via the recirculation line. The flowrate can be calculated by c	
	RWT volume over a measured period of time. Since t	
	ces RCS inventory it can only be performed during ref	
outages with the	e reactor head removed, permitting refueling cavity wa the RWT.	ter inventory
ALTERNATE T	ESTING	
During quarterly	pump testing each of these valves will be partial-strol	ke exercised
via recirculation	through the minimum flow test circuits with no flow	
neasurements.		
During each rea	ctor refueling outage each of these valves will be full-	flow tested.

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	REFUELING JUSTIFICATION NO. RFJ-08	
SYSTEM		
Safety Injection	(2998-G-078, Sh 131; 8770-G-078, Sh 131A)	
COMPONENTS	<u>i</u>	
V3113		
V3123 (Unit 1 o	nhy)	
V3123 (01/// 10	, , , , , , , , , , , , , , , , , , ,	
V3143		
V3766 (Unit 2 o	nlv)	
	5,	
CATEGORY		
A/C		
FUNCTION		
	pen to provide flowpaths from the high-pressure safety injects and close to isolate the headers from the high pressus system.	
DISCUSSION		
determining obture requires system requires injection precluded becau- to overcome prin	le check valves with no external means of exercising or fo urator position, thus, testing these valves in the open direct flow. Full stroke exercising of these valves to the open p n into the RCS via the HPSI pumps. During plant operation use the HPSI pumps can not develop sufficient discharge mary system pressure. At cold shutdown, there are sever ow exercising impractical, including:	ction osition on this is pressure
injected wa letdown flo	o available reservoir in the reactor coolant system to accep ater and the shutdown cooling system can not provide suff w back to the RWT to accommodate full design flow from a maintaining the necessary core cooling function;	icient

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DISCUSSION	(continued)	
	ssive quantities of boric acid injected during such testing wo hamper the ensuing startup; and	uld
to precluc the press	old shutdown conditions, operation of the HPSI pumps is res de RCS system pressure transients that could result in excer ure-temperature limits (LTOP) specified in the St. Lucie Tech tions, Section 3.4.9.	eding
pump is used t specified by the refilled on an a incorporated in	ercising of these valves is performed whenever its associate to refill an SIT. The acceptable SIT level and pressure band e Technical Specifications are very narrow and the SITs are is-needed basis; therefore, the partial flow test can not readi to a periodic test. Alternate flow paths for partial flow tests design pressure of the associated piping.	ls only ily be
perform partial following cold s is maintained a that the contair and both manu lineup breaches 3.6.1.1, and the controls. Routi	vater to the RWT through containment penetration P-41 can flow testing of these valves. This evolution is normally perfe- shutdown outages to ensure the boron concentration in the h at concentrations required for safety injection. This method r ment isolation valves, one of them a manual isolation on Ur ral isolations on Unit 2, be opened to complete the flowpath. Is containment integrity, as defined in Technical Specification erefore can only be aligned infrequently under strict administ ine quarterly use of this flowpath violates the intent of these ecluded in Modes 1, 2, 3, and 4.	ormed headers requires nit 1, This ns trative
ALTERNATE 1	[ESTING	
tanks will only Specification lir	vill be part-stroke exercised open while refilling an SIT. The be refilled as required to maintain them within the Technical mits. No SIT will be filled for the sole purpose of part-stroke one of these check valves.	
Each of these refueling outag	valves will be full-stroke exercised (open) during each react e.	or

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	REFUELING JUSTIFICATION NO. RFJ-09	
<u>SYSTEM</u>		
Safety Injection	(2998-G-078, Sh 130A)	
COMPONENTS		
V3522		
V3547		
<u>CATEGORY</u>		
С		
C		
FUNCTION		
hot leg injection	pen to provide flowpaths from the respective HPSI pumps headers. Should the normal charging header become dis ed to close to direct charging flow to the RCS via the 2A H	sabled,
DISCUSSION		
determining obture requires system requires injection precluded becauto to overcome prir	e check valves with no external means of exercising or fourator position. Thus, testing these valves in the open direction. Full stroke exercising of these valves to the open photo the RCS via the HPSI pumps. During plant operations the HPSI pumps can not develop sufficient discharge mary system pressure. At cold shutdown, there are sever pen exercising impractical, including:	ection osition on this is pressure
injected wa letdown flo	o available reservoir in the reactor coolant system to acce ater and the shutdown cooling system can not provide suff w back to the RWT to accommodate full design flow from maintaining the necessary core cooling function;	ficient
	sive eventition of horiz and injected during such testing w	

2. The excessive quantities of boric acid injected during such testing would seriously hamper the ensuing startup; and

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DISCUSSION	(continued)	· · · · ·
to preclud	d shutdown conditions, operation of the HPSI pumps is r e RCS system pressure transients that could result in ex- ire-temperature limits (LTOP) specified in the St. Lucie T	ceeding

Specifications, Section 3.4.9.

Recirculating water to the RWT through containment penetration P-41 can also perform partial flow testing of these valves. This evolution is normally performed following cold shutdown outages to ensure the boron concentration in the headers is maintained at concentrations required for safety injection. This method requires that the containment isolation valves, one of them a manual isolation on Unit 1, and both manual isolations on Unit 2, be opened to complete the flowpath. This lineup breaches containment integrity, as defined in Technical Specifications 3.6.1.1, and therefore can only be aligned infrequently under strict administrative controls. Routine quarterly use of this flowpath violates the intent of these controls and thus is precluded in Modes 1, 2, 3, and 4.

Closure testing of V3547 requires charging pumps to be aligned to the 2A HPSI header and a seat leakage test performed to verify valve closure. This is undesirable during normal plant operation since the lineup will direct water of lower boron concentration than that required for safety injection reactivity control into the HPSI header. Also, there is the potential that the higher pressure from the charging system could inadvertently cause injection of the higher boron concentrated water from the HPSI header into the RCS undesirably affecting reactivity and reactor power. Performance of this testing requires isolation of the HPSI pump discharge and installation of leak measuring equipment. NUREG-1482, Section 4.1.4 states, "...The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing until a refueling outage...". Therefore, based on this guidance FPL considers closure testing during of this valve during cold shutdown as well as normal operation to not be practicable.

ALTERNATE TESTING

Each of these check valves will be part stroke exercised during each cold shutdown per Part 10, Paragraphs 4.3.2.2(d) and (g) and full stroke exercised during each reactor refueling outage. V3547 will be verified closed each refueling outage.

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	REFUELING JUSTIFICATION NO. RFJ-10	
SYSTEM		
Safety Injection	(2998-G-078, Sh 131)	
COMPONENTS	<u>5</u>	
V3524		
V3525		
V3526		
V3527		
FUNCTION		
These values of	pen to provide flowpaths from the high-pressure safety inje	ection
	o the RCS for hot leg injection and close to isolate the saf	
	rs from the high pressure of the reactor coolant system.	
, DISCUSSION		
<u>DI3C033IUN</u>		
These are simp	le check valves with no external means of exercising or fo	r
	urator position, thus, testing these valves in the open direc	
	flow. Full stroke exercising of these valves would require	
	n pressure safety injection (HPSI) pump at nominal accide	
-	ecting into the reactor coolant system. At power operation	
	cause the HPSI pumps can not develop sufficient discharg	
•	rcome reactor coolant system pressure. During cold shute	
	low operation of the HPSI pumps is restricted to preclude	RCS
	e transients that could result in exceeding the pressure-	
temperature lim	its specified in the Technical Specifications, Section 3.4.9.	
Partial flow testi	ing of V3525 and V3527 during normal operation cannot b	e
	the only flow path is to the higher pressure RCS.	ر ۲۴
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DISCUSSION (continued)		
the RWT throug performed follow the headers is a method requires isolation on Uni the flowpath. T Specifications 3	ing of V3524 and V3526 can be performed by recirculating the containment penetration P-41. This evolution is normal wing cold shutdown outages to ensure the boron concentre maintained at concentration required for safety injection. Is that the containment isolation valves, one of them a mark t 1, and both manual isolations on Unit 2, be opened to con- his lineup breaches containment integrity, as defined in T 6.6.1.1, and therefore can only be aligned infrequently und controls. Routine guarterly use of this flowpath violates the	lly ration in This nual omplete echnical ler strict	
	and thus is precluded in Modes 1, 2, 3, and 4.		/R4

ALTERNATE TESTING

Each of these check valves will be part stroke exercised during each cold shutdown per Part 10, Paragraphs 4.3.2.2(d) and (g) and full stroke exercised during each reactor refueling outage.

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	REFUELING JUSTIFICATION NO. RFJ-11	
SYSTEM		
Condensate an	d Feedwater (8770-G-080, Sh. 4)	
COMPONENT		
V09303		
CATEGORY		
С		
FUNCTION		
	is to provide a flowpath from Auxiliary Feedwater Pum e condensate storage tank (CST) to ensure adequate (conditions.	
PART 10 REQU	JIREMENT	
	e to the testing in (a) or (b) above, disassembly every mine operability of check valves may be used. 2.4(c))	refueling
DISCUSSION		
This is a simple	sheet value with no outernal means of oversising or f	

This is a simple check valve with no external means of exercising or for determining obturator position, thus, testing it in the open direction requires system flow. There is no flowrate instrumentation available to verify valve full-stroke exercising of this valve as required by Generic Letter 89-04, Position 1.

Note that this value is significantly different from the other two pump recirculation values and, thus, it is called out for individual inspection and not included in the other group of values.

ALTERNATE TESTING

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During each reactor refueling outage this valve will be disassembled, inspected and manually stroked to verify operability. This is consistent and in compliance with Part 10, Paragraph 4.3.2.4(c).

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	REFUELING JUSTIFICATION NO. RFJ-12	
SYSTEM		
Condensate an	d Feedwater (2998-G-080, Sh. 2B)	
COMPONENT		
V12806		
CATEGORY		
С		
FUNCTION		
Tank (CST) to f	e opens to provide a flowpath from the Unit 2 Condens the suction of Unit 1 auxiliary feedwater pumps in the e to the unprotected Unit 1 Condensate Storage Tank.	
PART 10 REQI	JIREMENT	
	hall be exercised nominally every 3 months, except as .2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
DISCUSSION		
determining obt flow. Cycling the	check valve with no external means of exercising or four urator position, thus, testing it in the open direction requis valve is unacceptable during plant operation as it would be used the unit 1 and Unit 2 Auxiliary Feedwater Pumps when per	uires system ould

flow test. To pass flow through this valve requires aligning the pumps' suction piping to the non-classed and non-seismic cross connect piping and components. Thus, a credible single failure of the non-classed piping could disable all (both units) auxiliary feedwater pumps. Cycling of this valve during Unit 2 shutdowns is not practicable since it would require Unit 1 also be shut down to perform the testing.

ALTERNATE TESTING

During each Unit 1 reactor refueling outage this valve will be full-stroke exercised.

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	REFUELING JUSTIFICATION NO. RFJ-13	
<u>SYSTEM</u>		
Feedwater Syst	em (8770-G-080, Sh 4)	
COMPONENTS		
V12507		
CATEGORY		
с		
FUNCTION		
•	s to provide a discharge flowpath for bearing cooling ixiliary Feedwater Pump 1C.	water from
PART 10 REQU	JIREMENT	
	nall be exercised nominally every 3 months, except as 2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)	provided by
DISCUSSION		
determining obtained flow. There is n	check valve with no external means of exercising or urator position, thus, testing it in the open direction re- to flowrate instrumentation available to verify valve ful s valve as required by Generic Letter 89-04, Position	quires system I-stroke

ALTERNATE TESTING

During each reactor refueling outage this valve will be disassembled, inspected and manually stroked to verify operability. This is consistent and in compliance with Part 10, Paragraph 4.3.2.4(c).

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	REFUELING JUSTIFICATION NO. RFJ-14	
SYSTEM		
Make-up Water	(2998-G-084, Sh 1; 8770-G-084, Sh 1C)	
COMPONENTS		
V15328		
CATEGORY		
A/C		
FUNCTION		
	s to provide primary containment for the penetration re upply line to the containment building.	elated to the
DISCUSSION		
determining obtu by performing a effort, including impractical durin	check valve with no external means of exercising or fourator position, thus the only practical means of verifyin leak test or backflow test. This would require a considentry into the containment building. Due to access, this g plant operation and would be an unreasonable burd form during cold shutdowns.	ng closure is derable is is
ALTERNATE T	ESTING	
÷	eling outage this valve will be verified to close. This i es provided in NUREG-1482, Paragraph 4.1.4.	s consistent

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	REFUELING JUSTIFICATION NO. RFJ-15	
SYSTEM		
Instrument Air (2	2998-G-085, Sh 2A; 8770-G-085, Sh 2A)	
COMPONENTS		
V18195		
CATEGORY		
A/C		
FUNCTION		
	s to provide primary containment for the penetration re upply line to the containment building.	elated to the
DISCUSSION		

This is a simple check valve with no external means of exercising or for determining obturator position, thus the only practical means of verifying closure is by performing a leak test or backflow test. This would require a considerable effort, including entry into the containment building and securing all instrument air to the containment. Due to access limitations and the undesirability of isolating the air supply for critical equipment, this is impractical during plant operation and would be an unreasonable burden on the plant staff to perform during cold shutdowns.

ALTERNATE TESTING

During each refueling outage this valve will be verified to close.

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	REFUELING JUSTIFICATION NO. RFJ-16	
<u>SYSTEM</u>		
Containment Sp	oray (2998-G-088, Sh 1; 8770-G-088, Sh 1)	
COMPONENTS		
V07129 V07143		
CATEGORY		
с		
FUNCTION		
	pen to provide flowpaths from the respective containment spray headers.	ent spray

These are simple check valves with no external means of exercising or for determining obturator position. Thus, testing these valves in the open direction requires system flow. Full-stroke exercising of these valves would require operating each containment spray pump at nominal accident flowrate. Since exercising these valves through the normal containment spray flowpath would result in spraying down the containment, the only practical flowpath available for such a test requires pumping water from the refueling water tank (RWT) to the RCS via the shutdown cooling loops. At cold shutdown, the shutdown cooling system can not provide sufficient letdown flow to the RWT to accommodate full design flow from the RWT while maintaining the necessary core cooling function.

ALTERNATE TESTING

Each of these valves will be partial-stroke exercised quarterly in conjunction with testing of the containment spray pumps via the minimum flow test line.

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During each refueling outage, each valve will be exercised at least once to demonstrated full stroke capability.

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	REFUELING JUSTIFICATION NO. RFJ-17	
SYSTEM		
Containment Sp	ray (8770-G-088, Sh 1)	
COMPONENTS		
V07256		
V07258		
CATEGORY		
С		
FUNIOTION		
FUNCTION		
These valves or	en to provide flowpaths from the spray additive tank t	to the
respective conta	inment spray pump suction header via the containme	nt spray
-	close to prevent reverse flow and recirculation throug	h the
educator leading	to an idle containment spray pump.	
DISCUSSION		
<u></u>		
•	e check valves with no external means of exercising of	
	irator position, thus, testing these valves in the open of	
	flow. Testing these valves during normal plant operations of the containment energy number would contain	
	testing of the containment spray pumps would contar ay piping with sodium hydroxide. The only practical n	
•	ves requires connection of a source of demineralized	
	hen directing water into the containment spray piping.	
•	en or closed requires removing sodium hydroxide che	÷
•	ity from both containment spray trains.	

In addition to the physical system constraints, frequent performance of the above mentioned testing is undesirable based on the personnel hazards associated with testing. Sodium hydroxide is a dangerous, highly caustic liquid. Testing of the valves either open or closed requires draining of system piping potentially exposing personnel to the caustic fluid. The caustic liquid generated by this testing will also require expensive disposal. For these reasons, it is proposed to perform this testing only during reactor refueling outages.

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ALTERNATE T	ESTING	
During each rea	actor refueling outage both of these valves will be full-s	stroke
exercised (open	and closed).	

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	REFUELING JUSTIFICATION NO. RFJ-18	
SYSTEM		
Containment Sp	ray (2998-G-088, Sh 1)	
COMPONENTS		
V07256		
V07258		
CATEGORY		
С		
FUNCTION		
	een to provide flowpaths from the hydrazine pumps to inment spray pump suction header. They have no sp losed position.	
DISCUSSION		
determining obture requires system conjunction with containment spr draining significa	e check valves with no external means of exercising our ator position, thus, testing these valves in the open of flow. Testing these valves during normal plant power testing of the hydrazine pumps would contaminate the ay piping with hydrazine. In addition, any mode of test ant portions of the containment spray system. This endex procedure and system re-alignment that is considered.	direction operation in e sting requires tails a

somewhat complex procedure and system re-alignment that is considered outside the scope of work that is typically performed during operations or a routine cold shutdown period, thus, such a test is impractical during periods other than reactor refueling outages.

In addition to the physical system constraints, frequent performance of the above mentioned testing is undesirable based on the personnel hazards associated with testing. Hydrazine is a dangerous, highly flammable liquid with cumulative toxic effects when absorbed through the skin, inhaled or ingested. It has also been identified as a known carcinogen. For this reason, it is proposed to perform this testing only during refueling outages.

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ALTERNATE TESTING	
During each reactor refueling outage both of these valves will be full-stroke exercised (open).	

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	REFUELING JUSTIFICATION NO. RFJ-19	
SYSTEM		
Miscellaneous S	Sampling (2998-G-092, Sh 1; 8770-G-092, Sh 1)	
COMPONENTS		
V27101		
V27102		
CATEGORY		
A/C		
FUNCTION		
	en to provide flowpaths for the return from containmen - non-safety function. They close to provide primary of enetrations.	
DISCUSSION		
These are simple check valves with no external means of exercising or for determining obturator position, thus the only practical means of verifying closure is by performing a leak test or backflow test. This would require a considerable effort, including entry into the containment building and breaking the sampling line connections. This is impractical during plant operation and would be an unreasonable burden on the plant staff to perform at cold shutdown.		
ALTERNATE TE	ESTING	
-	ueling outage these valves will be verified to close. Thi he guidelines presented in NUREG-1482, Section 4.1.4	I

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	REFUELING JUSTIFICATION NO. RFJ-22	
<u>SYSTEM</u>		
Main Steam (87	70-G-079, Sh. 1)	
COMPONENTS	<u>.</u>	
V08372		
V08373		
<u>CATEGORY</u>		
с		
FUNCTION		
pump during pu	lves open to emit steam to the steam-driven auxiliary mp startup. They close during a steam leak accident m generator and prevent the uncontrolled blowdown of	to isolate the

These are simple check valves with no external means of exercising or determining obturator position. Verifying closure of these valves during plant operation at normal operating pressures would require isolating the associated steam generator from the steam supply lines and venting the piping between the closed isolation valve and the check valve. It is considered to be imprudent to isolate a steam supply to the AFW pump during operation and, in addition, it is undesirable to subject plant personnel to the hazards associated with venting live steam at these operating conditions. Furthermore, it is likely that testing in this manner would provide inconclusive results.

The backflow testing is performed using compressed air. In order to perform this test a dedicated air compressor is connected to the system via a disassembled check valve - a test that is impractical to perform during cold shutdown periods.

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	APPENDIX C REFUELING JUSTIFICATIONS	
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	REFUELING JUSTIFICATION NO. RFJ-22	
	(continued)	
ALTERNATE T	ESTING	
During each rea alternate testing	ctor refueling outage these valves will be verified to close satisfies the guidelines of NUREG-1482, Section 3.1.1.4.	. This

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	REFUELING JI	JSTIFICATION NO. RFJ-23	
SYSTEM			
Feedwater Syst	tem (8770-G-080, St	n. 4; 2998-G-080 Sh. 2B)	
COMPONENTS	<u>}</u>		
<u>Unit_1</u>	<u>Uni</u>	<u>t 2</u>	
V09824 V098	325 V09724	V09725	
V09824 V098		V09727	
CATEGORY			
С			
FUNCTION			
the four AFW per function to oper maintaining pro	ump discharge head n to provide a chemic per system chemistry the safety related Al	he chemical feed piping connected lers. These valves have a non-sa cal feed path to the AFW system y. These valves also have a safe FW system from the non-safety re	afety related thereby ety function to

These valves are small 3/8" tubing "Whitey" lift check valves. These valves only have one moving part and do not have any external means of exercising or determining obturator position. No installed plant instrumentation exists to validate or monitor inservice conditions. Due to system configuration and location of test connections, the only method to verify closure would require installation of test equipment. In addition, installation of test equipment requires special precautions and techniques since the contained fluid (hydrazine) is a carcinogenic. Using test equipment, valve closure can be verified by observing backflow (seat leakage), pressure decay or other test method.

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	REFUELING JUSTIFICATION NO. RFJ-23 (continued)	
DISCUSSION (C	continued)	
NUREG-1482, S	ormal operation or cold shutdown is not practicable. Section 4.1.4 states, "The NRC has determined that the ment is adequate justification to defer backflow testing un "	
ALTERNATE T	ESTING	
	ctor refueling outage these valves will be verified to close DM Part 10, Paragraph 4.2.1.2.(e) and NUREG-1482, Se	
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		:

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	REFUELING JUSTIFICATION NO. RFJ-24	
	Reputeling Justin Reation No. Ri 3-24	
SYSTEM		
Containment Sp	ray (2998-G-088, Sh. 1)	
COMPONENTS		
V29431		
V29432		
CATEGORY		
В		
FUNCTION		
storage tank. The a pressurized (~ gas cover prevention)	lves are located in the nitrogen supply line to the hydronia hese valves have a non-safety related function to ope 10 psig) nitrogen gas cover in the hydrazine tank. The nts evaporation of hydrazine into the RAB environments are carcinogenic, and precludes interaction with oxy	n to provide nis nitrogen nt, since
	so have a safety function to close to maintain hydrazir Technical Specification limits upon loss of the non-sa line.	
DISCUSSION		
not have any extinstrumentation i and nitrogen gas	e 1" lift check valves with seal welded bonnets. Thes ternal means of exercising or determining obturator po is installed to monitor hydrazine tank nitrogen gas cov s supply regulator pressure. However, this instrument monitor performance of the subject check valves as a	osition. Plant ver pressure lation can

they are installed in series without intermediate test connections. The only

technique such as radiography. Performance of radiography requires installation/setup of test equipment and strict coordinations scheduling with operations and maintenance activities for evacuation of the test area.

method to verify closure of each check valve individually is to use a non-intrusive

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	REFUELING JUSTIFICATION NO. RFJ-24	
	(continued)	
	(continued)	
DISCUSSION (continued)	
······································	,	
Therefore, testir	ng quarterly during normal operation or cold shutdown is	not
	JREG-1482, Section 4.1.4 states, "The NRC has determ	
the need to setu	up test equipment is adequate justification to defer backflo	ow testing
until a refueling	outage"	
ALTERNATE T	ESTING	
During each rec	enter refugling outgoe these values will be verified to close	This is
	actor refueling outage these valves will be verified to close	e. This is
consistent with	actor refueling outage these valves will be verified to close OM Part 10, Paragraph 4.2.1.2.(e) and NUREG-1482,	e. This is
		e. This is
consistent with		e. This is
consistent with		e. This is
consistent with		e. This is
consistent with		e. This is
consistent with		e. This is /R
consistent with		

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ADIVI-23.01		
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	REFUELING JUSTIFICATION NO. RFJ-25	
SYSTEM		
Waste Manage	ment (2998-G-078, Sh. 163B; 8770-G-078, Sh. 163	3B)
COMPONENT		
V6779 (Unit 1)		
V6792 (Unit 2)		
<u>CATEGORY</u>		
С		
FUNCTION		
These check va	alve open to supply nitrogen to various tanks inside ing normal operation. It is required to close and to	
These check va as required duri		
These check va as required duri	ing normal operation. It is required to close and to	
These check va as required duri containment pe <u>DISCUSSION</u>	ing normal operation. It is required to close and to	isolate this
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re	ing normal operation. It is required to close and to netration during an accident. configuration and location of test connections, the c equires installation of test equipment inside contain	only method to ment and
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re performance of	ing normal operation. It is required to close and to netration during an accident. configuration and location of test connections, the o	only method to ment and states, "The
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re performance of NRC has deterr justification to d	ing normal operation. It is required to close and to netration during an accident. configuration and location of test connections, the dequires installation of test equipment inside contain a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". T	only method to ment and states, "The equate herefore, based
These check va as required duri containment pe <u>DISCUSSION</u> Due to system of verify closure re performance of NRC has deterr justification to d on this guidance	ing normal operation. It is required to close and to metration during an accident. configuration and location of test connections, the operative installation of test equipment inside contain a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade	only method to ment and states, "The equate herefore, based
These check va as required duri containment pe <u>DISCUSSION</u> Due to system of verify closure re performance of NRC has deterr justification to d on this guidance	ing normal operation. It is required to close and to inetration during an accident. configuration and location of test connections, the operative installation of test equipment inside contains a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". The FPL considers closure testing during this value during ell as normal operation to not be practicable.	only method to ment and states, "The equate herefore, based
These check va as required duri containment pe <u>DISCUSSION</u> Due to system of verify closure re performance of NRC has deterr justification to d on this guidance shutdown as we <u>ALTERNATE T</u>	ing normal operation. It is required to close and to inetration during an accident. configuration and location of test connections, the operation installation of test equipment inside contains a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". The FPL considers closure testing during this value during ell as normal operation to not be practicable.	only method to ment and states, "The quate herefore, based uring cold
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re performance of NRC has deterr justification to d on this guidance shutdown as we <u>ALTERNATE T</u> During each ref	ing normal operation. It is required to close and to inetration during an accident. configuration and location of test connections, the operative installation of test equipment inside contains a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". The FPL considers closure testing during this value during ell as normal operation to not be practicable.	only method to ment and states, "The quate herefore, based uring cold
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re performance of NRC has deterr justification to d on this guidance shutdown as we <u>ALTERNATE T</u> During each ref	ing normal operation. It is required to close and to metration during an accident. configuration and location of test connections, the operation installation of test equipment inside contains a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". The FPL considers closure testing during this value during ell as normal operation to not be practicable. ESTING fueling outage these values will be verified to close.	only method to ment and states, "The quate herefore, based uring cold
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re performance of NRC has deterr justification to d on this guidance shutdown as we <u>ALTERNATE T</u> During each ref	ing normal operation. It is required to close and to metration during an accident. configuration and location of test connections, the operation installation of test equipment inside contains a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". The FPL considers closure testing during this value during ell as normal operation to not be practicable. ESTING fueling outage these values will be verified to close.	only method to ment and states, "The quate herefore, based uring cold
These check va as required duri containment pe <u>DISCUSSION</u> Due to system verify closure re performance of NRC has deterr justification to d on this guidance shutdown as we <u>ALTERNATE T</u> During each ref	ing normal operation. It is required to close and to metration during an accident. configuration and location of test connections, the operation installation of test equipment inside contains a seat leakage test. NUREG-1482, Section 4.1.4 mined that the need to setup test equipment is ade lefer backflow testing until a refueling outage". The FPL considers closure testing during this value during ell as normal operation to not be practicable. ESTING fueling outage these values will be verified to close.	only method to ment and states, "The quate herefore, based uring cold

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exercising only a 4.2.1.2 and 4.3. Guidelines For I	s intended to provide the justification for performing value at cold shutdown conditions as permitted by Part 10, Par 2.2. In addition, the guidance provided in NUREG-1482 nservice Testing At Nuclear Power Plants was applied for test deferral is appropriate and justified. Specifically inc e the following:	agraphs or	
	nose failure in a position other than its normal position co the immediate safety of the plant or system components		
	nose failure in a position other than its normal position co f a safeguard system to be inoperable;	ould cause	
	nose failure in a position other than its normal position the ansient that could lead to a plant trip; or	at might	
When test access.	requirements or conditions are precluded by system ope	ration or	
Reactor Coolar	nt (8770-G-078, Sh 110A)		
PCV-1100E and Pressurizer Spi	l PCV-1100F ray Control Valves		
pressure by auto opening these v an immediate ne condense part o	ower operations, these two valves are used to control Report of the spray flow into the pressurizer. For alves, in preparation for timing the stroke closed test, we egative effect on RCS pressure. The increased spray flow for the steam bubble inside the pressurizer, causing press erefore RCS pressure, to drop rapidly.	Fully ould have w would	
V1402 and V14 Power-Operate			
Due to the potential impact of the resulting transient should one of these valves open prematurely or stick in the open position, it is considered imprudent to cycle them during plant operation with the reactor coolant system at full operating pressure.			

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Reactor Coolar	nt (8770-G-078, Sh 110A) (continued)	
•	V1446 and V1449	
Reactor Coolar	nt System Vents	
the power suppl reactor coolant leakage followin imposed by the Furthermore, if a returned to the f would likely resu	re administratively controlled in the keylocked closed pos- ly disconnected to prevent inadvertent operation. Since system boundary valves, failure of a valve to close or s og closure can result in a loss of coolant in excess of the Technical Specifications leading to a plant shutdown. a valve were to fail open or valve indication fail to show fully closed position following exercising, prudent plant o ult in a plant shutdown. Note also that Technical Specifi these valves to be closed during operation.	these are ignificant limits the valve peration
This justification Paragraph 3.1.1	agrees with the guidelines provided in NUREG-1482,	
Chemical & Vo	lume Control (8770-G-078, Sh 120B)	
SE-02-03 and S Auxiliary Press	E-02-04 surizer Spray Valves	
operation would affect plant safe	of these valves (or failure in the open position) during pla cause an RCS pressure transient that could potentially ty and lead to a plant trip. In addition, the pressurizer s Id be subjected to undesirable thermal shock.	adversely
V2431 Auxiliary Press	urizer Spray Check Valve	
either of these v cause an RCS p safety and lead	his valve, either SE-02-03 or SE-02-04 must be opened alves (or failure in the open position) during plant operatoressure transient that could potentially adversely affect to a plant trip. In addition, the pressurizer spray piping a ted to undesirable thermal shock.	tion would plant

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Chemical & Volume Control (8770-G-078, Sh 120B) (continued)

V2432

Loop B Charging Injection Check Valve

In order to fully stroke this valve all other parallel pathways into the RCS must be isolated. This would require closing manual valve V2434. Since V2434 is located inside the containment building it is considered to be inaccessible during plant operation at power.

V2515 and V2516 Letdown Line Isolation Valves

Closing either of these valves during operation isolates the letdown line from the RCS and would result in undesirable pressurizer level transients with the potential for a plant trip. If a valve failed to reopen, then an expedited plant shutdown would be required.

Chemical & Volume Control (8770-G-078, Sh 121A)

V2501 Volume Control Tank Outlet Valve

Closing this valve during operation of a charging pump would isolate the VCT from the charging pump suction header with the potential for damaging any operating charging pump. This would effectively interrupt the flow of charging water flow to the RCS with the potential of an RCS transient and plant trip.

SE-01-01 and V2505 RCP Seal Water Return Valves

Closing either of these valves when any of the reactor coolant pumps (RCPs) are in operation would interrupt flow from the RCP seals and result in damage to the pumps' seals. Thus testing these valves would require the unnecessary shutdown of all the reactor coolant pumps or installation of elaborate means to ensure seal leakage is maintained while these valves are closed.

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Chemical & Ve	olume Control (8770-G-078, Sh 121A) (continued)	
V2118		
VCT Discharge	e Header Check Valve	
exercising or de available to ver (i.e., radiograph charging flow. maintain reacto can only be per ength to stop b	swing check valve that does not have any external means etermining obturator position. Therefore, the only methods ify valve closure are a backflow test or a non-intrusive tes my). Both of these methods require isolation or cessation of Since reactor coolant pump seal bleed-off must be isolate or coolant inventory when normal charging is secured, these formed during a refueling outage or cold shutdown of suff both reactor coolant pumps. n / Residual Heat Removal (8770-G-078, Sh 130B)	s t of normal d to e tests
V3106 and V31 LPSI Pump Dis	107 scharge Check Valves	
discharge press in the open dire shutdown coolir HCV-3657, V34	plant operation, the LPSI Pumps can not develop sufficient sure to pump through these valves to the RCS and exercise action. The only other test flowpath available is through the ng line recirculating to the RWT. This would require openi 60 and V3459. With these valves open, both trains of the Id be considered to be inoperable, therefore this testing so	e them e ng valves e LPSI
√3659 and V36 Minimum Flow	660 /Recirculation Line Isolation Valves	
Failure of either	of these valves in the closed position during testing will re	ender all

Failure of either of these valves in the closed position during testing will render all safety injection pumps inoperable due to the high probability of damage should these pumps be started and operated without sufficient flow for cooling of pump internal components.

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Safety Injection	n / Residual Heat Removal (8770-G-078, Sh 131A)			
	V3134 and V3144			
I PSI Injection	Check Valves			

These are simple check valves with no external means of exercising or for determining obturator position. Thus, testing these valves in the open direction requires system flow. Since no full flow recirculation path exists, full stroke exercising of these valves would require operating a low pressure safety injection (LPSI) pump at nominal accident flowrate and injecting into the reactor coolant system. At power operation this is not possible because the LPSI pumps do not develop sufficient discharge pressure to overcome reactor coolant system pressure. Partial flow testing is similarly not practical since it would require isolating the associated safety injection tank which is not permitted during plant operation.

V3480, V3481, V3651 and V3652 Shutdown Cooling RCS Isolation Valves

These valves are provided with electrical interlocks that prevent opening during reactor power operation. In addition, during operation it is likely that these valves will experience a large differential pressure (in excess of 2000 psid). At this differential pressure the valve operators are incapable of opening the valves. Furthermore, if they could be opened operation at high differential pressure it could result in damage to their seating surfaces. For these reasons exercising these valves in any plant condition other than cold shutdown is impractical.

Safety Injection / Residual Heat Removal (8770-G-078, Sh 131B)

V3614, V3624, V3634 and V3644 SI Tank Discharge Isolation Valves

During normal plant operation, these valves are administratively controlled to be locked open with their breakers racked out to ensure they remain in the open position with no chance of misalignment. These valves are also interlocked such that they will automatically go open if RCS pressure is greater then 350 psia. Therefore, the valves can only be cycled closed during Modes 4 (<350 psia), 5 and 6.

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Main Steam (87	70-G-079, Sh 1)	/\\4
HCV-08-1 A&B Main Steam Iso	lation Valves	
power operation and could result	these valves isolates the associated steam header. Dur isolation of a header would require a significant power re in unacceptable steam generator level and reactor powe he potential for a plant trip.	eduction
MV-08-1 A&B Main Steam Iso	lation Valve Bypass Valves	
whenever the M	iteria and interlocks prevent opening either of these valve SIV or Bypass valve in the other steam line are open. The ant operations these valves cannot be cycled.	
V08130 and V08 Main Steam Su	3163 oply to AFW Pump 1C Turbine	
Feedwater Pump (450°F) feedwate thermal stress or	ising of these valves would require operation of Auxiliary o 1C and injection of cold water (85°F) into the hot er supply piping. This, in turn, would result in unacceptate of the feedwater system piping components. These valve ted during quarterly testing via the minimum flow recircula	ble s will be
Main Steam (87	<u>70-G-079, Sh 7)</u>	
	ugh 1A4 and SE-08-1B1 through 1B4 lation Valve (MSIV) Air Pilot Valves	
operation of thes operating at pow that a failure of a an MSIV to close	ontrol systems for each of the MSIVs are designed such be pilot valves can be verified and tested while the plant is ber and the associated MSIV is open; however, there is can a blocking valve or procedural mishap could inadvertently e. Closure of one of these valves at power would subject cant and traumatic transient with a plant trip likely.	s oncern cause

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Feedwater (877	<u>'0-G-080, Sh 3)</u>	
MV-09-01 and 0		
Main Feedwate	r Pump Isolation Valves	
During plant no	ver operation, closure of either of these valves is not pra	ctical as it
would require a	significant decrease of plant power and possibly securing	a main
	in addition to upsetting the steam plant static operating	
NUREG-1432, \	/ol 1, Rev. 1, "STANDARD TECHNICAL SPECIFICATIO	NS -
Combustion Eng	gineering Plants Specifications", states that MFIVs should	I not be
	rtial stroke) at power and they are exempt from the requ	
	de, Section XI while operating in Modes 1 or 2. Based of	on this
recommendation	n, these valves should not be partial stroke tested.	
MV-09-07 and 0	18	
	r Isolation Valves	
	ver operation, closure of either of these valves is not pra	
	olating a steam generator which would result in a severe	transient
on the steam an	id reactor systems and a possible plant trip.	
NUREG-1432 \	/ol 1, Rev. 1, "STANDARD TECHNICAL SPECIFICATIO	NS -
	gineering Plants Specifications", states that MFIVs should	
	irtial stroke) at power and they are exempt from the requ	
of the ASME Co	de, Section XI while operating in Modes 1 or 2. Based of	on this
recommendatior	n, these valves should not be partial stroke tested as wel	l.
Feedwater (877	0 G-080 Sh 4)	
reeuwater (077	<u>0-0-000, 011 4)</u>	
V09107, 09123	and 09139	
Auxiliary Feedv	vater Pump Discharge Check Valves	
Full stroke ever	sisting of those values would require operation of a related	t auvilian <i>u</i>
	cising of these valves would require operation of a related and injection of cold water (85°F) into the hot (450°F) fe	
	This, in turn, would result in unacceptable thermal stress	
	m piping components.	_
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	(- 3 ,	
Feedwater (87)	70-G-080, Sh 4) (continued)	
V00440 00425	00151 and 00157	
	, 09151 and 09157 water Header Check Valves	
Auxiliary I cou		
Full-stroke exer	cising of these valves would require operation of a rela	ated auxiliary
	o and injection of cold water (85°F) into the hot (450°F	
	This would result in unacceptable thermal stresses on	the
reedwater syste	em piping components.	
V12174 and V1	2176	
	water Pump Suction Check Valves	
		
	cising of these values would require operation of a relation of a relation of a relation of a relation (450%) into the bet (450%)	-
	o and injection of cold water (85°F) into the hot (450°F This, in turn, would result in unacceptable thermal stre	•
	m piping components. These valves will be partial stre	
	testing via the minimum flow recirculation lines.	
V12177	ante Otenene Terris (COT) te da end do Auvilians Fe	
Pump Suction	sate Storage Tank (CST) to 1A and 1B Auxiliary Fe	edwater
This manual val	lve is opened when cross connecting the 1A and 1B A	uxiliary
	p suction to the Unit 2 CST. This function is required	
	ptures the Unit 1 CST which is not missile-protected v	•
	lve during plant power operation is unacceptable as it operability of 1A and 1B Auxiliary Feedwater Pumps by	
	uction piping to non-classed and non-seismic piping.	
	ailure of the non-classed piping without timely operato	
-	oth auxiliary feedwater pumps.	
V40407		
V12497 Unit 1 Conden	. sate Storage Tank (CST) Outlet to 1A/1B Auxiliary	Foodwater
Pump Suction		i ecuwalei
	lve is closed to isolate the Unit 1 CST when cross con	•
	liary Feedwater Pump suction to the Unit 2 CST. This	•
	ures the Unit 1 CST which is not missile-protected vertive during plant operation is unacceptable as it would re	
	Auxiliary Feedwater Pumps inoperable.	
	while y roouwator r unipo inoperable.	

4 INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES 223 of 236 29.01 ST. LUCIE PLANT 223 of 236 29.01 ST. LUCIE PLANT APPENDIX D COLD SHUTDOWN JUSTIFICATIONS - UNIT 1 (Page 9 of 10) INSERVICE TESTING (IST) PROGRAM APPENDIX D COLD SHUTDOWN JUSTIFICATIONS - UNIT 1 (Page 9 of 10) INSERVICE TESTING (IST) PROGRAM INSERVICE TESTING (IST) PROGRAM APPENDIX D COLD SHUTDOWN JUSTIFICATIONS - UNIT 1 (Page 9 of 10) INSERVICE TESTING (IST) PROGRAM INSERVICE TESTING (IST) PROGRAM APPENDIX D INSERVICE TESTING (IST) PROGRAM APPENDIX D INSERVICE TESTING (IST) PROGRAM APPENDIX D INSERVICE TESTING (IST) PLANT INSERVICE COLSTON PLANT
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n from functioning, it requires that both trains of the shield building
on system (Technical Specification 3.6.6.1) and containment vacuum relief
cal Specification 3.6.5) be considered out of service. This would require
to the technical specification applicability statements as non-compliance for
nent vacuum relief applicable in Modes 1 through 4 and require plant
n.
of these valves requires entry into the shield building annulus for valve
nd monitoring purposes - a neutron radiation area during Modes 1 and 2.
ALARA considerations and the aforementioned dual train operability
s with components credited for accident mitigation, these valves should
tested at cold shutdown intervals. This is consistent with the guidelines
ed in NUREG-1482, Paragraph 3.1.1(1).

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Instrument Air	<u>(8770-G-085, Sh 3)</u>	
V18099 V1869	5, V18696 and V18699	
•	ator Instrument Air Supply Check Valves	
•	e valves (closed) is not practical during plant operation	
	rument air supply to the main steam isolation valves	· · · ·
•	dump valves (ADVs) and could lead to an inadverter	
	e of an MSIV would isolate steam from the respective	1
•	would result in a severe transient on the steam and	1
systems and a	possible plant trip. Isolation of air to the ADVs would	cause them

to be inoperable and incapable of opening. Although these valves are not "safety-related" they are operationally important in minimizing plant transients and shutting down the plant if necessary.

Containment Spray (8770-G-088, Sh 1)

V07119 and V07120 RWT Outlet Check Valves

These are simple check valves with no external means of exercising or for determining obturator position. Thus, testing these valves in the closed direction requires a back-leakage test. Such a test requires realignment of the associated safety injection and containment spray train that would render the complete train (LPSI, HPSI and containment spray) inoperable for an extended period of time and entry into a multiple LCO. During plant power operation this is considered to be imprudent. This justification agrees with the guidelines provided in NUREG-1482, Paragraphs 3.1.1 and 3.1.2.

Heating, Air Conditioning and Ventilation, & Air Conditioning (8770-G-878)

FCV-25-1 through FCV-25-6 Primary Containment Purge and Vent Valves

These valves are administratively maintained in the closed position at all times when the plant is operating in Modes 1, 2 or 3 thus they are not required to operate (close) during operational periods. Due to the large size of these valves and the potential for damage as a result of frequent cycling, it is not prudent to operate them more than is absolutely necessary.

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exercising only a 4.2.1.2 and 4.3.2 Guidelines For I	intended to provide the justification for performing valve at cold shutdown conditions as permitted by Part 10, Para 2.2. In addition, the guidance provided in NUREG-1482, inservice Testing At Nuclear Power Plants was applied for test deferral is appropriate and justified. Specifically incl the following:	r
	ose failure in a position other than its normal position couthe immediate safety of the plant or system components;	
	ose failure in a position other than its normal position cou a safeguard system to be inoperable;	Ild cause
	ose failure in a position other than its normal position tha nsient that could lead to a plant trip; or	t might
When test access.	requirements or conditions are precluded by system oper	ation or
Reactor Coolan	t (2998-G-078, Sh 107)	
V-1460 through Reactor Coolan		
the power supply reactor coolant leakage following by Technical Spe valve were to fai	e administratively controlled in the key-locked closed posi v disconnected to prevent inadvertent operation. Since the system boundary valves, failure of a valve to close or sign closure result in a loss of coolant in excess of the limits ecification 3.4.6.2 leading to a plant shutdown. Furthermod open or valve indication fail to show the valve returned to ion following exercising, prudent plant operation would like wn.	ese nificant imposed ore, if a to the

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Reactor Coola	nt (2998-G-078, Sh 108)	
V-1474 and V-1 Power-Operate	475 d Relief Valves	
open premature	ntial impact of the resulting transient should one of the ly or stick in the open position, it is considered imprude nt operation with the reactor coolant system at full open	ent to cycle
Chemical & Vo	<u>lume Control (2998-G-078, Sh 120)</u>	
V2522 Letdown Line (Containment Isolation Valve	
would result in a	ve during operation isolates the letdown line from the R undesirable pressurizer level transients with the potentia ailed to reopen, then an expedited plant shutdown wou	al for a plant
Chemical & Vo	lume Control (2998-G-078, Sh 121A)	
V2501 Volume Contro	I Tank Outlet Valve	
the charging purcharging pump.	ve during operation of a charging pump would isolate th mp suction header with the potential for damaging any This would effectively interrupt the flow of charging wa e potential of an RCS transient and plant trip.	operating
V2505 and V25 RCP Seal Wate	24 r Return Valves	
operation would pumps' seals. T of all the reactor	these valves when any of the reactor pumps (RCPs) a interrupt flow from the RCP seals and result in damage hus testing these valves would require the unnecessar coolant pumps or installation of elaborate means to en tained while these valves are closed.	e to the y shutdown

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	COLD SHUTDOWN JUSTIFICATIONS - UNIT 2	
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Chemical & Vo	lume Control (2998-G-078, Sh 121A) (continued)	
V2118		
VCT Discharge	Header Check Valve	
closure testing of test involves iso charging pump s verified by confi VCT. To make VCT must be iso accommodating coolant pump is	le check valves with no external means of verifying clos of these valves requires a backflow test. Performance of lation of the normal charging flow path and pressurization suction header using the boric acid pumps. Valve closu rming no significant transfer of water from the BAM tank this test meaningful and conclusive, all sources of water plated, including the RCPs or providing extraordinary me seal leak-off which must be maintained whenever a real in operation.	of such a on of the ire is t(s) to the r into the eans of
SE-02-03 and S Auxiliary Press	E-02-04 urizer Spray Valves	
operation would affect plant safe	of these valves (or failure in the open position) during pl cause an RCS pressure transient that could potentially ty and lead to a plant trip. In addition, the pressurizer s d be subjected to undesirable thermal shock.	adversely
V2431 Auxiliary Press	urizer Spray Check Valve	
either of these v cause an RCS p safety and lead	his valve, either SE-02-03 or SE-02-04 must be opened alves (or failure in the open position) during plant opera pressure transient that could potentially adversely affect to a plant trip. In addition, the pressurizer spray piping ted to undesirable thermal shock.	tion would plant
V2432 Loop B Chargir	ng Injection Check Valve	
isolated. This w	stroke this valve all other parallel pathways into the RCS ould require closing manual valve V2434. Since V2434 mment building it is considered to be inaccessible during ver.	is located

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Chemical & Vo	lume Control (2998-G-078, Sh 122) (continued)	
V2440 Charging Pump	o Discharge Check Valve to Safety Injection	/R4
RCS via the saf	lve requires operating a charging pump and discharging in ety injection nozzles. Thermal cycling of the safety inject irable and should be avoided.	
V2515 and V25 Letdown Line I	16 solation Valves	
would result in L	alves during operation isolates the letdown line from the Fundesirable pressurizer level transients with the potential f ailed to reopen, then an expedited plant shutdown would	or a plant
V2523 Charging Line	Isolation Valve	
would result in u trip and potentia	ve during operation isolates the charging pumps from the indesirable pressurizer level transients with the potential f I damage to the charging pumps. If the valve failed to re- ed plant shutdown would be required.	or a plant
Safety Injection	n/Residual Heat Removal (2998-G-078, Sh 130B)	
V3101		
Safety Injection	I Supply To Volume Control Tank	
This is a simple check valve with no external means of exercising nor for determining disc position, thus the only practical way of verifying opening is by means of a forward flow test. Such a test requires partial draining of an SIT to the VCT. During such a test, if the isolation valves were to fail open for any reason, the SIT would be drained below the Technical Specification limits and the reactor coolant system over-borated to the extent that a plant shutdown would result.		
V3106 and V310 LPSI Pump Dis	07 charge Check Valves	
÷ .	lant operation, the LPSI pumps can not develop sufficient ure to pump through these valves to the RCS and exercis ction.	

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Safety Injection	<u>n/Residual Heat Removal (2998-G-078, Sh 131)</u>			
V3114, V3124, V3134 and V3144 LPSI Injection Check Valves				
	e check valves with no external means of exercising or urator position. Thus, testing these valves in the open of			
	flow since no full flow recirculation path exists, full strol			
	ese valves would require operating a low pressure safet			
	nominal accident flowrate and injecting into the reactor			
system. At pow	er operation this is not possible because the LPSI pum	ps do not		
	nt discharge pressure to overcome reactor coolant syste			
	al flow testing is similarly not practical since it would req			
	ociated safety injection tank which is not permitted duri			
	ication of closure can be done by operating a HPSI pun	•		
1	I header isolation valve open and determining check va			
	however, would unseat the associated downstream hea	ider check		
valve and requir	e leakage testing of this valve per St. Lucie Technical			

Specification 4.4.6.2. Although not impractical, such quarterly leakage testing would be an undue burden on the plant staff. Note that valves V3114, V3124, V3134 and V3144 remain closed during power operation.

V3480, V3481, V3651 and V3652 Shutdown Cooling RCS Isolation Valves

These valves are provided with electrical interlocks that prevent opening during reactor power operation. In addition, during operation it is likely that these valves will experience a large differential pressure (in excess of 2000 psid). At this differential pressure the valve operators are incapable of opening the valves. Furthermore, if they could be opened operation at high differential pressure it could result in damage to their seating surfaces. For these reasons exercising these valves in any plant condition other than cold shutdown is impractical.

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Safety Injectior	Safety Injection/Residual Heat Removal (2998-G-078, Sh 132)			
	V03002 through V03005 Safety Injection Tank (SIT) Drain Line Check Valves			
Exercising these valves requires draining of each of the SITs. This is not considered to be an appropriate nor prudent activity to perform during plant operation due to the obvious safety issues related to SIT inventory and chemistry control.				
	V3260 and V3261 Header Check Valves			
These valves open to provide flow paths from the high/low pressure safety injection headers to the RCS and close to isolate the headers from the high pressure of the reactor coolant system.				
Since no full flow recirculation path exists, full stroke exercising of these valves would require operating a low pressure safety injection (LPSI) pump at nominal accident flowrate and injecting into the reactor coolant system. At power operation this is not possible because the LPSI pumps do not develop sufficient discharge pressure to overcome reactor coolant system pressure.				
refilled. The acc very narrow. Th	cising of these valves is performed whenever its associate ceptable SIT level band specified by the Technical Specific e SITs are only refilled on an as needed basis; therefore, can not readily be incorporated into a quarterly test.	cation is		
perform partial fl following cold sh is maintained at that the containn and both manua lineup breaches Specifications 3. administrative co	ter to the RWT through containment penetration P-41 car ow testing of these valves. This evolution is normally per outdown outages to ensure the boron concentration in the concentrations required for safety injection. This method nent isolation valves, one of them a manual isolation on L I isolations on Unit 2, be opened to complete the flowpath containment integrity, as defined in Technical 6.1.1, and therefore can only be aligned infrequently unde ontrols. Routine quarterly use of this flowpath violates the nd thus is precluded in Modes 1, 2, 3, and 4.	formed headers requires Jnit 1, n. This er strict		

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Safety Injection	n/Residual Heat Removal (2998-G-078, Sh 132) (continu	ied)	
V3614 V3624	V3634 and V3644		
	Isolation Valves		
U U	lant operation, these valves are administratively controlled h their breakers racked out to ensure they remain in the c		
	chance of misalignment. These valves are also interlock		h
that they will au	tomatically go open if RCS pressure is greater than 500 p	osia.	
Therefore, the v	alves can only be cycled during Modes 4 (<500 psia), 5 a	and 6.	
V3733 through	V3740		
SIT Vent Valves	5		
Cycling any of th	nese valves during normal plant operation with the SITs		
	ndesirable since if a valve were to fail to re-close the resu	ult woul	d
•	ation of the affected SIT and a plant shutdown. Even con		
0	duce SIT pressure below the Technical Specification limit essary recharging of the SIT.	S	
requiring unnece	essary recharging of the STT.		/R4
Main Steam (29	<u>98-G-079, Sh 1)</u>		
HCV-08-1 A&B			
Main Steam Iso	lation Valves		
Closing sither of	these volves isolates the appeariated steam header. Dur	ina	
	these values isolates the associated steam header. Dur isolation of a header would require a significant power re		1
and could result	in unacceptable steam generator level and reactor power		
transients with th	ne potential for a plant trip.		
NUREG-1432. V	ol 1, Rev. 1, "STANDARD TECHNICAL SPECIFICATION	IS -	
Combustion Eng	ineering Plants Specifications", states that MSIVs should	not be	
• •	rtial stroke) at power and they are exempt from the requir	rements	5
of the ASIME CO	de, Section XI while operating in Modes 1 or 2.		
MV-08-1 A&B			
Main Steam Iso	lation Valve Bypass Valves		
The operating cr	iteria and interlocks prevent opening either of these valve	s	
whenever the M	SIV or Bypass valve in the other steam line are open. Th		
auring normal pl	ant operation these valves cannot be cycled.		

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998-G-079, Sh 1) (continued)	
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AFW Pump Steam Supply Check Valves	
cising of these valves would require operation of Auxiliar p 2C and injection of cold water (85°F) into the hot (450 y piping. This, in turn, would result in unacceptable ther er system piping components. These valves will be partia parterly testing via the minimum flow recirculation lines.	°F) mal stress
ic Control (2998-1014)	
5A, V19A, V20A, V2B through V5B, V19B and V20B blation Valve (MSIV) Air Pilot Valves	
control systems for each of the MSIVs are designed such se pilot valves can be verified and tested while the plant ver and the associated MSIV is open; however, there is a blocking valve or procedural mishap could inadvertent e. Closure of one of these valves at power would subject cant and traumatic transient with a plant trip likely.	is concern y cause
8-G-080, Sh 2A)	
3 and CHKVLV-2 A&B r Air Supply Check Valves	
e check valves with no external means of determining di re, verification of closure can only be accomplished by p ack-leakage test. Since the system was not provided wit ng means, this test requires isolation of the air supply to ad disassembly of portions of the air supply piping. It is a	erforming h a the not
	INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES ST. LUCIE PLANT APPENDIX E COLD SHUTDOWN JUSTIFICATIONS - UNIT 2 (Page 8 of 12) 298-G-079, Sh 1) (continued) 8163 AFW Pump Steam Supply Check Valves cising of these valves would require operation of Auxiliar p 2C and injection of cold water (85°F) into the hot (450° y piping. This, in turn, would result in unacceptable ther r system piping components. These valves will be partia tarterly testing via the minimum flow recirculation lines. ic Control (2998-1014) 5A, V19A, V20A, V2B through V5B, V19B and V20B Dation Valve (MSIV) Air Pilot Valves control systems for each of the MSIVs are designed such se pilot valves can be verified and tested while the plant ver and the associated MSIV is open; however, there is of a blocking valve or procedural mishap could inadvertent! e. Closure of one of these valves at power would subject cant and traumatic transient with a plant trip likely. (8-G-080, Sh 2A) B and CHKVLV-2 A&B r Air Supply Check Valves e check valves with no external means of determining di re, verification of closure can only be accomplished by p ack-leakage test. Since the system was not provided wit ng means, this test requires isolation of the air supply to

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Feedwater (299	98-G-080, Sh 2A) (continued)	
	and HCV-09-2 A&B	
Main Feedwate	r Isolation Valves	
During plant nov	wer operation, closure of any of these valves is not pr	actical as it
	olating a steam generator which would result in a sev	
	nd reactor systems and a possible plant trip.	
	/ol 1, Rev. 1, "STANDARD TECHNICAL SPECIFICAT	
	gineering Plants Specifications", states that MFIVs sho	
	artial stroke) at power and they are exempt from the re	
	ode, Section XI while operating in Modes 1 or 2. Base	
recommendation	n, these valves should not be partial stroke tested as	wen.
Feedwater (299	<u>8-G-080, Sh 2B)</u>	
<u></u>	<u> </u>	
V09107, V0912:	3 and V09139	
Auxiliary Feed	water Pump Discharge Check Valves	
	cising of these valves would require operation of the re-	
	ter pump and injection of cold water (85°F) into the he y piping. This, in turn, would result in unacceptable th	
	r system piping components.	
V09119, V0913	5, V09151 and V09157	
Auxiliary Feed	water Supply Check Valves	
		
	cising of these valves would require operation of a relation	
• •	and injection of cold water (85°F) into the hot (450°F	,
	his, in turn, would result in unacceptable thermal stre	ss on the
reeuwater syster	m piping components.	

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Feedwater (299	8-G-080, Sh 2B) (continued)	
V12802 and V1 Unit 2 Condens Suction Isolatic	ate Storage Tank (CST) to Unit 1 Auxiliary Feedwater	[.] Pump
CST. This is rea from vertical mis unacceptable as connecting their	alves are opened when cross-tying the Unit 2 CST to the quired if a missile ruptures the Unit 1 CST which is not pr siles. Opening these valves during plant operation is it would jeopardize the Unit 2 Auxiliary Feedwater Pump suction piping to non-classed and non-seismic piping. The ailure of the non-classed piping could disable all the auxil s.	rotected os by hus, a
Component Co	<u>oling System (2998-G-083, Sh 2)</u>	
_		
HCV-14-1, 2, 6 & RCP Cooling W	& 7 /ater Supply/Return Isolation Valves	
These valves are coolant pump co during plant ope	e required to be open to ensure continued cooling of read imponents and the control rod drives. Closing any of the ration could result in severe RCP and CRD damage lead in a potentially unsafe mode and a subsequent plant shut	se valves ing to

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<u>nstrument Air</u>	<u>(2998-G-085, Sh 2A)</u>		
	402021		
V18279 and [V1 pstrument Air	Supply To Maintenance Hatch Door Seal A[B	31 In Annulus	
nstrument An		· , ··· · ·······	
	1, [V18294 and V18295]		
nstrument Air	to FCV-25-7 & [8] (Containment Vacuum Brea	akers)	
his is a simple	check valve with no external means of exercisir	ng nor tor	
	c position, thus the only practical way of verifying kflow test. Testing of these valves by any method		
	mmon instrument air header to the shield buildir		
	be created on the upstream side of the check v		
	est removes one maintenance hatch seal and/or		
	om service and potentially renders both trains in		
	strument air would be isolated from the common		
	sing train component as the requisite vent path.		
	r and subsequent testing of a single train should		
	unctioning, it requires that both trains of the shie m (Technical Specification 3.6.6.1) and containn		
	sification 3.6.5) be considered out of service. Th		
	chnical specification applicability statements as r		
	cuum relief applicable in Modes 1 through 4.		
	e valves requires entry into the shield building an		
•	itoring purposes - a neutron radiation area during considerations and the aforementioned dual trair		
	omponents credited for accident mitigation, these		
	at cold shutdown intervals.		
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Instrument Air	<u>(2998-G-085, Sh 2C)</u>			
HCV-18-1	() () () () () () () () () ()			
Primary Contai	nment Instrument Air Supply			
Closing this valu	re isolates operating air to critical components in the cont	ainment		
	g the pressurizer spray, RCP cooling water supply and re			
	solation valves and could cause severe plant transients,			
	plant trip. Failure in the closed position would cause a pla			
shutdown and R				
Containment S	<u>pray (8770-G-088, Sh 1)</u>			
V07119 and V07 RWT Outlet Che				
determining obtu requires a back- safety injection a (LPSI, HPSI and and entry into a be imprudent. T	e check valves with no external means of exercising or four arator position. Thus, testing these valves in the closed of leakage test. Such a test requires realignment of the ass and containment spray train that would render the complet I containment spray) inoperable for an extended period of multiple LCO. During plant power operation this is consi this justification agrees with the guidelines provided in Paragraphs 3.1.1 and 3.1.2.	lirection sociated ste train f time		
Heating Air Co	nditioning And Ventilation And Air Conditioning (299	8-6-878)		
neating, Air Co	nationing and ventilation and air conditioning (235	0-0-0701		
FCV-25-1 throu	gh FCV-25-6	FCV-25-1 through FCV-25-6		
	•			
Primary Contai	nment Purge and Vent Valves			
Primary Contai	nment Purge and Vent Valves			

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