10 CFR 50.55a



Serial: RNP-RA/12-0064

JUN 04 2012

United States Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 DOCKET NO. 50-261/RENEWED LICENSE NO. DPR-23

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO RELIEF REQUESTS (RR)-2 FOR THE FIFTH TEN-YEAR INTERVAL INSERVICE TESTING PROGRAM PLAN

Ladies and Gentlemen:

Carolina Power and Light (CP&L) Company, now doing business as Progress Energy Carolinas, Inc., submitted to NRC by letter dated May 10, 2012, its response to the May 4, 2012, NRC staff request for additional information (RAI). The RAI was discussed in a conference call on May 21, 2012, between H. B. Robinson, Unit 2 (HBRSEP), personnel and NRC Staff personnel involved in the review of these relief requests. As a result of that conference call, additional information was requested by letter dated May 24, 2012.

The response to the May 24, 2012, letter is provided in Attachment I. Attachment II provides a complete copy of the updated IST program plan. The revised relief requests are provided in Attachment 10.2 to that plan.

As stated in the letter dated March 16, 2012, the first refueling outage of the Fifth Ten-Year Interval is Refueling Outage 28 (RO-28), which is currently scheduled to begin in September of 2013. In order to support implementation of the Fifth Ten-Year Interval Inservice Testing Program, and to facilitate preparations for RO-28, CP&L requests NRC approval of the associated relief requests by July 18, 2012.

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Progress Energy Carolinas, Inc. Robinson Nuclear Plant 3581 West Entrance Road Hartsville, SC 29550 United States Nuclear Regulatory Commission Serial: RNP-RA/12-0064 Page 2 of 2

This document contains no new Regulatory Commitments. If you have any questions concerning this matter, please contact Richard Hightower, Supervisor – Licensing/Regulatory Programs at (843) 857-1329.

Sincerely,

Sharm a. Wheeler

Sharon A. Wheeler Manager – Support Services - Nuclear

SAW/rcw

Attachments:

- I. Response to Request for Additional Information
- II. RNP2 Fifth IST Plan Inservice Testing Program
- c: Mr. V. M. McCree, NRC, Region II Ms. A. T. Billoch-Colon, NRC Project Manager, NRR NRC Resident Inspector, HBRSEP

United States Nuclear Regulatory Commission Attachment I to Serial: RNP-RA/12-0064 4 Pages (including cover page)

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# RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION

# **RELATED TO RELIEF REQUESTS (RR)-2**

# **INSERVICE TESTING PROGRAM PLAN FOR THE FIFTH-TEN YEAR INTERVAL**

# REQUEST FOR ADDITIONAL INFORMATION REGARDING H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2 INSERVICE TESTING PROGRAM PLAN FOR THE FIFTH-TEN YEAR INTERVAL DOCKET NO. 50-261

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated March 16, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 110310012), Carolina Power & Light Company, doing business as Progress Energy Carolinas, Inc., (PEC) submitted Relief Requests (RR)-1, RR-2, and RR-3 for the Inservice Testing Program (IST) Plan for the Fifth 10-Year Interval for the H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP). By letter dated May 10, 2012 (ADAMS Accession No. ML 12138A041), PEC submitted its response to the NRC's staff request for additional information (RAI), which was sent on May 4, 2012. On May 24, 2012, a second RAI was issued by NRC staff. The response to that request is provided below.

# IST-RR-2: "Required Instrumentation Accuracy"

## RAI -1:

For the eight pumps in the alternative request, provide the number of times in the current 10-year inservice test interval that non-calibrated flow instrumentation was used during the inservice tests.

# CP&L Response

Below is the number of times in the current 10-year inservice test interval that the non-calibrated flow instrumentation was used for the eight pumps:

\*SW Pump 'A' – Two times from July 2009 until January 2010 \*SW Pump 'B' – Five times from July 2009 until January 2010 SI Pump 'C' – Once CCW Pumps – None

\*H. B. Robinson Steam Electric Plant, Unit 2, (HBRSEP) was not using ultrasonic flow rate measurement to assess SW Pump 'A' & 'B' performance when it became evident that the relatively new permanent flow meter was not measuring flow accurately. Once this became certain, two new calibrated ultrasonic flow meters were purchased and the vendor was brought in to assist with installation and testing. During this interim period, SW Pump 'B' was tested at an increased frequency due to high vibration, accounting for the additional tests. The new calibrated ultrasonic flow meters were received in November, 2009 and installed in December, 2009.

# **RAI-2:**

Clarify when the new flow measurement instruments will be available for use all of the time for the inservice tests

# CP&L Response

SW Pump 'A' & SW Pump 'B' utilize the same flow element which has proven to be unreliable. Two ultrasonic flow meters were procured and calibrated and are being used. It is our intent to inspect the in line flow element that failed in RO28 which occurs in the fall of 2013, prior to deciding on a permanent resolution. In the event that HBRSEP cannot return the existing permanent flow meter to service, the existing ultrasonic flow devices may be retained. If the existing permanent flow meter cannot be repaired and both ultrasonic flow meters were off-site for calibration, RR-2 would be needed if no other calibrated instrumentation could be obtained to perform the scheduled test. Consequently, this request may be required for the entire duration of the ten year inservice test interval for SW Pump 'A' & SW Pump 'B', but would only be used if calibrated instrumentation was unavailable at the time of testing.

HBRSEP intends to install a permanent flow meter to support the full flow testing of the Safety Injection Pumps by the fall of 2016. By the fall of 2016, HBRSEP would also have sufficient data to alleviate any concerns regarding the dependability of the permanent flow device recently installed to measure CCW Pump flow rate.

# **RAI-3:**

Describe the actions you will take to minimize the use of non-calibrated flow instruments.

# CP&L Response

SW Pump 'A' & SW Pump 'B' utilize the same flow meter. Two independent calibrated units have been procured, calibrated and field tested although only one is required for testing. There will be periods when one of the two meters is sent off-site for repairs and certification, leaving only one calibrated meter available.

For the SI Pumps, this relief impacts the comprehensive pump test. A calibrated meter can be procured or the original meter repaired within the nominal 25% grace period applicable for a biennial test.

A calibrated flow meter would be purchased for the CCW Pumps in the event that the permanent flow element was proven to be erroneous and beyond repair.

HBRSEP will exhibit best efforts to expedite the repair, calibration and re-installation of a meter in the event that a calibrated meter is not available.

# **RAI-4:**

Explain if a commitment will be made to not use the non-calibrated flow instruments on sequential tests for the same pump.

# **CP&L** Response

For the SI pumps, use of the non-calibrated flow instrument will not be necessary; however, the same assurance cannot be provided for a quarterly test, which would involve the SW Pumps 'A' and 'B' and the CCW Pumps. The meter and transducers must be removed and shipped to the vendor and the vendor must reserve time at a separate calibration facility. This time frame varies and cannot be predicted based on discussions with the vendor and previous experience. HBRSEP is uncertain that a 3 month window could be met; however, HBRSEP is confident that a calibrated meter could be available within 6 months from the date of the initial test.

# **RAI-5:**

Provide the amount of "Acceptable Range" margin currently available for each pump.

# CP&L Response

Based on most recent tests results, the following is the "Acceptable Range" margin:

SW Pump A – Approximately 450 gpm from the minimum performance requirement SW Pump B – Approximately 650 gpm from the minimum performance requirement CCW Pump A – Approximately 2400 gpm from the minimum performance requirement CCW Pump B - Approximately 2400 gpm from the minimum performance requirement CCW Pump C - Approximately 1200 gpm from the minimum performance requirement SI Pump A – Approximately 45 gpm from the minimum performance requirement SI Pump B – Approximately 55 gpm from the minimum performance requirement SI Pump B – Approximately 55 gpm from the minimum performance requirement SI Pump C – Approximately 60 gpm from the minimum performance requirement United States Nuclear Regulatory Commission Attachment II to Serial: RNP-RA/12-0064 230 Pages (including cover sheet)

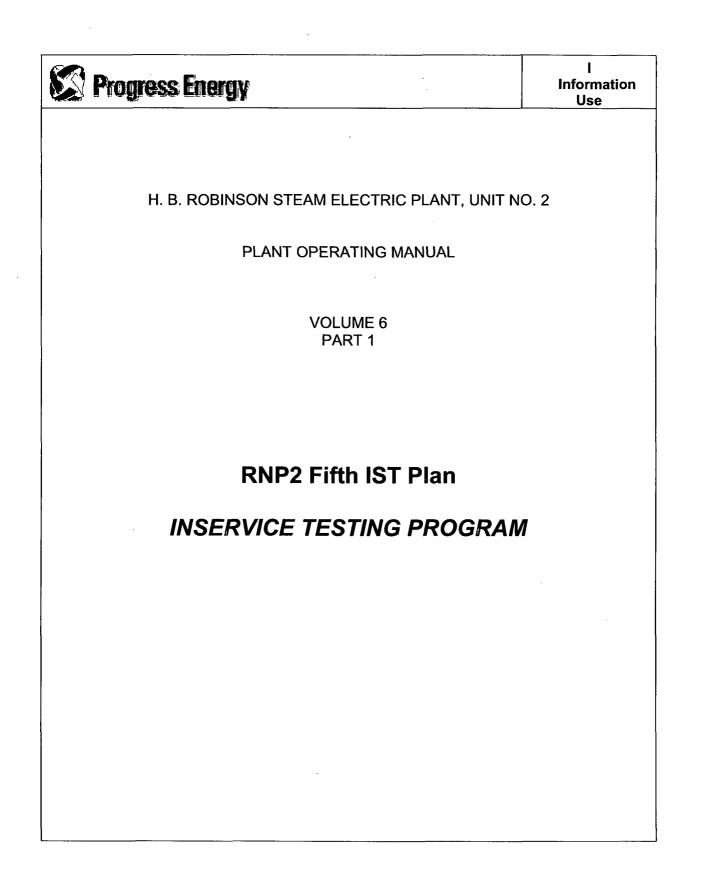
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# H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

# RNP2 FIFTH IST PLAN

# INSERVICE TESTING PROGRAM PLAN

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# SUMMARY OF CHANGES

Page	Description of Change		
11	Added PD-R to denote Positive Displacement-Reciprocating for Pump Type		
20	Table 8.2-3 - Added line for Reciprocating and deleted Note 3 and references to Note 3 to reflect table		
	re-format to include reciprocating pump types.		
21	Table 8.2-6 – Included reciprocating positive displacement pump for test parameters P (Pressure) & Q		
<u> </u>	(Flow rate)		
·	IST-RR-1		
5 A	• Included new column to denote pump type		
	<ul> <li>Deleted Group B pumps from request for relief (CV-SPRAY-PMP, SI-PMP)</li> <li>Corrected reference from ISTB-1300 to ISTB-2000</li> </ul>		
	<ul> <li>Corrected reference from ISTB-1300 to ISTB-2000</li> <li>Removed reference to "bi-ennial" frequency for Table ISTB-3510-1, "Required Instrument</li> </ul>		
	• Removed reference to bi-eminar frequency for rable 131B-3310-1, Required instrument Accuracy."		
	<ul> <li>Corrected title to reference ISTB-5121-1 to Centrifugal Pump Test Acceptance Criteria</li> </ul>		
	<ul> <li>Included reference and discussion to ISTB 5321-2 for Reciprocating Positive Displacement</li> </ul>		
47-49	Pumps		
	• Provided additional information in Specific Relief Requested to include references to		
	Paragraph ISTB-5123 and ISTB-5323 and deleted two occurrences stating: "unless calibrated		
	flow measuring instruments are not available". Re-worded first paragraph to improve clarity		
	and eliminated reference to HBRSEP, Unit 2.		
	• Revised last paragraph on page 48 to reflect the deletion of Group B pumps from the request		
•	and to re-structure wording to be more concise.		
· •	<ul> <li>Deleted reference to ISTB-3300(e)(2) on page 49</li> <li>Re-worded paragraph b (editorial)</li> </ul>		
	IST-RR-2		
	Included new column to denote pump type of digits of the distance of the second s		
	<ul> <li>Eliminated term "over the calibrated range", "digital" and "pump" and simply stated Table</li> </ul>		
50	ISTB-3510-1 requirements in the Applicable Code Requirement section.		
: ;	<ul> <li>Re-wrote the Basis for Requesting Relief to be more specific for these applications and</li> </ul>		
	document expectations and limitations regarding the use of this equipment.		
	IST-RR-3		
	<ul> <li>IST-RR-3</li> <li>Deleted references to ISTC-5222 and the check valve condition monitoring program</li> </ul>		
	<ul> <li>Added "spring-loaded ball type" in lead in sentence to Basis for Requesting Relief and in the</li> </ul>		
	Proposed Alternative sections.		
	<ul> <li>Listed approximate diameters of ball and discharge port</li> </ul>		
	<ul> <li>Removed language associated with Appendix J leakage testing to preclude the perception that</li> </ul>		
	<ul> <li>Removed language associated with Appendix 5 leakage testing to preclude the perception that a leak test is conducted.</li> </ul>		
	Discussed ancillary indications and devices to aid in detecting a failed open valve		
	Attachment 10.5		
91-92	• Deleted reference to IST-RR-1 for Group B pumps (CV-SPRAY, SI-PMP)		
-	• Clarified pump type to PD-R for CHG-PMP-A, CHG-PMP-B & CHG-PMP-C to reflect that		
	these pumps are positive displacement-reciprocating pumps.		
102	Deleted thermal relief valve CC-791A from Attachment 10.6 Valve Table and re-located to		
	Attachment 10.7, page 199 based on EC 84732.		
199	Included CC-791A on Attachment 10.7 due to being abandoned per EC 84732.		

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#### 1.0 PURPOSE A DESCRIPTION OF A MARKED AND A DESCRIPTION OF A

- This procedure details the Inservice Testing (IST) Program Plan for the fifth ten year 1.1 interval. This procedure identifies the components subject to test or examination, responsibilities, methods, intervals, parameters to be measured and evaluated. criteria for evaluating the results, corrective action and record keeping. These requirements apply to:
  - 1.1.1 Pumps and valves that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident. . 14 19 . . ٠. ÷.
  - Pressure relief devices that protect systems that are required to perform a 1.1.2 specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident., where a second second
  - Dynamic restraints (shubbers) used in systems that are required to perform a 1.1.3 specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident, or to ensure the integrity of the reactor coolant boundary.

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This procedure provides compliance with UFSAR Section 3.9.6, and Technical 1.2 Specification Section 5.5.8. States of the section 4.1

#### 2.0 REFERENCES

- Code of Federal Regulations, Title 10, Part 50, Section 55a, and Appendix J. 2.1
- 2.2 ASME OM Code – 2004 Edition through 2006 Addenda.
- 2.3 HBRSEP Unit 2 Technical Specifications, Section 5.5.8.
- 2.4 HBR 2 Updated FSAR, Section 3.9.6, In-Service Inspection and Inservice Testing of Pumps and Valves.
- NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, revision 1. 2.5
- NUREG/CR-6396, Examples, Clarification, and Guidance on Preparing Requests for 2.6 Relief from Pump and Valve Inservice Testing Requirements.
- Federal Register 36269, dated July 19, 2011. 2.7
- TMM-005, 10CFR50, Appendix "J" Testing Program 2.8
- 2.9 TMM-008, Check Valve Program Technical Requirements
- 2.10 TMM-009, Inservice Test Program Administration
- 2.11 EST-111, Safety, Pressure Relief & Vacuum Breaker Valve Test Selection and Verification (Refueling Shutdown and as Needed After Maintenance)
- 2.12 EST-112, Pressure, Safety, and Relief Valve Bench Testing
- 2.13 Generic Issue Document 90-181, Reactor Containment Isolation
- 2.14 PLP-037, Conduct of Infrequently Performed Tests or Evolutions and Pre-Job Briefs
- 2.15 Calculation RNP-M/MECH 1621, Containment Isolation Valves 10CFR50 Appendix J Allowable Leakage Rates

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2.16	CAP-NGGC-0200, Condition Identification and Screening Process
2.17	EGR-NGGC-008, Engineering Programs
2.18	NAS Assessment R-ES-99-01
2.19	NAS Assessment RES-ES-01-01
2.20	ESR 95-00796, AFW Self-Cooling
2.21	ESR 95-00189, Flow through SI Test Line during OST-151
2.22	RNP-M/MECH 1802, Safety Related Pump Minimum Performance Requirements
2.23	ESR 97-00383, Cool Water Injection to SWBP 'B' Discharge
2.24	ESR 98-00295, Function of EDG Skid Mounted Check Valves
2.25	ESR 98-00386, Locking Manual Containment Isolation Valves
2.26	ESR 98-00509, North Service Water Header Piping Replacement <sup>36</sup>
2.27	ESR 99-00176, Removing North Service Water Header From Service
2.28	SOER 98-01, Safety System Status Control
2.29	NRC Information Notice 97-16, Preconditioning of Plant Structures, Systems, and Components
2.30	NRC Information Notice 97-090, Use of Non Conservative Acceptance Criteria in Safety Related Pump Surveillance Tests
2.31	TMM-015, Inservice Repair and Replacement Program
2.32	EC 52357, SW South Header Flow Instrument Installation
2.33	EC 52753, CS/SI Pump Test Line
2.34	EC 51299, System Vents For RHR Piping
2.35	NAS Assessment R-ISI/SBO-05-012
2.36	ADM-NGGC-0115, Preconditioning of Structures, Systems and Components
2.37	Regulatory Guide 1.192, Operation and Maintenance Code Case Acceptability, ASME OM Code
2.38	Regulatory Guide 1.193, ASME Code Cases Not Approved for Use
2.39	NCR 455255, R-ISI-11-01-F1, Established Fleet Processes Not used to Document Conditions for Evaluation
2.40	EGR-NGGC-0028, Engineering Evaluation
2.41	OPS-NGGC-1305, Operability Determinations
2.42	EC 80584, Seismic Qualification of the SFP / RWST Purification System
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#### 3.0 RESPONSIBILITIES

- 3.1 The Supervisor - Engineering Programs is responsible for compliance with this procedure.
- 3.2 The IST Engineer has the responsibility to monitor, analyze, trend and archive IST data obtained during performance of surveillance procedures to comply with this procedure. Additionally, the IST Engineer will report adverse trends to the Responsible or System Engineers, as applicable.
- 3.3 The IST Engineer ensures that implementing test procedures are placed on Administrative Hold per RDC-NGGC-0002, Document Control Program when acceptance criteria have been revised and the existing procedure criteria is no longer and a star and a same valid.
- 3.4 The System Engineer is responsible for performing a component and system level review when necessary when performance parameters are outside the acceptable range (Alert, Required Action).
- 3.5 The IST and affected System or Responsible Engineer are accountable for working together to address any concerns over abnormal or unexplained findings.
- The affected System or Responsible Engineer is responsible for providing a peer check 3.6 of any acceptance limit derivation. ÷., •
- PREREQUISITES and the application of the state of th 4.0 A. A. A. B. A. N/A PRECAUTIONS AND LIMITATIONS
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### 8.0 INSTRUCTIONS

1.

### 8.1 IST Program Development – General

8.1.1 Regulatory Requirements

The Code of Federal Regulations, Title 10, Part 50.55a (10CFR50.55a), paragraph (f)(5)(i) requires each licensee of pressurized water-cooled nuclear reactors to revise the IST Program to meet the requirements of 10CFR50.55a(f)(4)(ii). As a result, the IST Program must be revised at 120month intervals to comply with the requirements of the latest edition and addenda of the Code incorporated by reference in 10CFR50.55a(b) 12 months prior to the start of the 120-month interval.

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### 8.1.2 Interval Information

The first program interval commenced on November 7, 1977 and ended on March 7, 1981.

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The second 120-month interval commenced on March 7, 1981 and ended on February 19, 1992.

The third 120-month interval commenced on February 19, 1992 and ended on February 18, 2002.

The fourth 120-month interval is applicable from February 19, 2002 through and including July 20, 2012.

The fifth 120-month interval is applicable from July 21, 2012 through and including February 18, 2022.

8.1.3 Applicable Code

In accordance with 10CFR50.55a, the code of record for the IST Program is ASME OM Code - 2004 Edition through 2006 Addenda and subject to limitations and modifications in 10CFR50.55a(b)(3).

### 8.1.4 Selection of Components

- 1. Pumps and valves are selected for inclusion in the IST Program based on a review of all plant systems. This review includes UFSAR, Technical Specifications, Plant Operating Manual procedures, design documents and Piping & Instrument Diagrams. In accordance with 10CFR50.55a(f), the components subject to OM Code requirements are limited to ASME Class 1, 2, and 3 pumps and valves.
- 2. Components and tests that are optionally included in this IST Program Plan are identified as follows:
  - Components optionally classified as Code Class 3 (e.g., Diesel Fuel Oil system) are identified as Augmented in the Remarks column of the Pump Table and Valve Table.
  - Components not within the Code Class 1, 2, or 3 boundaries are identified as Augmented in the Remarks column of the Pump Table and Valve Table.

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- Components not in the scope of the IST Program Plan are identified as Augmented in the Remarks column of the Pump Table and Valve Table.
- Specific tests that are not necessary to meet OM Code requirements are identified with "Aug" next to the test in the Test Type column of the Valve Table.
- Relief Requests and Test Deferral Justifications are not provided for components and tests identified as Augmented.
- 8.1.5 Code Classification
  - Code classification of pumps and valves at RNP is described in UFSAR Section 3.9.6 and is shown on the Piping and Instrumentation Diagrams provided in following section.
- 8.1.6 Systems and Flow Diagrams

A list of systems included in the IST Program along with the associated Piping and Instrumentation Diagrams (P&ID's) that identify the Code boundaries is provided in ATTACHMENT 10.1.

8.1.7 Relief Requests

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- Specific requests for relief in accordance with 10CFR50.55a(f)(5)(iii), and 10CFR50.55a(f)(5)(iv) are provided in ATTACHMENT 10.4. Where conformance with the requirements of the Code have been determined to be impracticable, alternate testing is proposed that would provide an
- acceptable level of quality and safety. Where conformance with the requirements of the Code would result in hardship or unusual difficulty
   without a compensating increase in the level of quality and safety.
  - alternate testing is proposed that would provide useful information to assess the operational readiness of the component tested.
  - 2. The relief requests define the component(s) and test(s) involved the basis for relief and the proposed alternative testing.
  - 3. Relief requests approved by the NRC shall not be altered without prior notification and approval by the NRC. The modification need not be in the form of a relief request; however, correspondence and acceptance by the NRC is required prior to implementing the revised request.
  - 4. Relief requests are numbered in an "IST-RR-N" format where:
    - **IST** = Designates the relief request is applicable to the IST Program Plan
    - **RR** = Relief request
    - **N** = Unique sequential number

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8.1.8 Use of Later Editions and Addenda (NRC Regulatory Issue Summary 2004-12)

> Later editions or addenda of the OM Code, incorporated by reference in paragraph (b) of 10CFR50.55a may be implemented during the course of an inspection interval subject to the limitations and modifications listed in paragraph (b) of 10CFR50.55a and provided all related requirements of the respective Code edition or addenda have been met. The voluntary update to a later Code edition or addenda of the Code referenced in paragraph (b) is not considered a relief request. Therefore, the requirements are not as stringent. A letter must be submitted to the NRC and should include a discussion of the related requirements. NRC approval is required prior to implementation. RIS 2004-12 provides clarification related to the process by which NRC approval can be obtained.

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#### 8.1.9 ASME Code Case Applicability

- 1. The NRC staff has developed RG 1.192 "Operation and Maintenance - Code Case Acceptability, ASME OM Code" and RG 1.193 "ASME Code : . • •
- Cases Not Approved for Use."
- 2. Per revision 1 of NUREG 1482, the licensee may implement the Code cases listed in RG 1.192 without obtaining further NRC review, if the Code cases are used in their entirety, with any supplemental conditions and the second specified in the regulatory guide (RG). RG 1.192 also lists Code cases **,**. that are conditionally acceptable. • • •

Code cases that may be utilized by the inservice test program are listed in ,3, the reference section. If utilized, a brief description will be provided below. 1 .

#### 1 \* 1 a. There are currently no Code cases being implemented

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8.1.10	Test Deferral Justifications
	1. In accordance with paragraphs 8.3.15 and 8.3.31, certain valves are full stroke exercised during cold shutdown conditions when they cannot be exercised during normal operation. When a valve cannot be exercised during normal operation or cold shutdown conditions, then it is full stroke exercised during refueling outages. The technical justification for exercising a valve during cold shutdown or refueling outages rather than normal operation is provided in a Cold Shutdown Test Justification or Refueling Outage Test Justification.
	<ol> <li>Valves tested during cold shutdowns or refueling outages shall be scheduled in accordance with paragraphs 8.3.15 and 8.3.31.</li> </ol>
anto anto A	<ul> <li>Cold Shutdown Test Justifications and Refueling Outage Test Justifications are numbered in a "XXX-VCS-N" or "XXX-VRS-N" format where:</li> <li>XXX = System Acronym</li> </ul>
	VCS = Cold Shutdown Test Justifications
	VRS = Refuel Outage Justifications
۰۱.	<ul> <li>N = Unique sequential number (e.g., SI-VCS-2 would be the second Cold Shutdown Test Justification for valves in the safety injection system)</li> </ul>
a la si	<ol> <li>Cold Shutdown Test Justifications are provided in ATTACHMENT 10.3 and Refueling Outage Test Justifications are provided in ATTACHMENT 10.4.</li> </ol>
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8.2 IST Program Development – Pumps

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- 8.2.1 Pump Scope
  - 1. Pumps included in the IST Program are those Safety Class 2 and 3 centrifugal and positive displacement pumps provided with an emergency power source that are required to:
    - Shut down the reactor to the safe shutdown condition, or
    - Maintain the reactor in the safe shutdown condition, or
    - Mitigate the consequences of an accident.
  - 2. Excluded from the above are: Attack the second second
    - Drivers, except where the pump and driver form an integral unit and the pump bearings are in the driver;
    - Pumps supplied with emergency power solely for operating convenience.
    - Skid-mounted pumps and component subassemblies that are tested as part of the major component.
- 8.2.2 Pump Table Format

Group

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A complete list of pumps in the scope of IST Program and their associated required tests are listed (in a tabular format) in ATTACHMENT 10.5. The Pump Table is sorted alphabetically. A description of each column in the Pump Table is shown below with applicable abbreviations.

**Pump** Unique alphabetical designator assigned to each pump.

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- **Description** Descriptive name of the pump
- **P&ID (SHT)** P&ID in which the pump is located. A complete list of P&ID's is provided in ATTACHMENT 10.1.
- **Coord** Drawing coordinate of pump location on the P&ID.
- Pump Testing Group
  - A Pumps that are operated continuously or routinely during normal operation, cold shutdown or refueling operations.
  - **B** Pumps in standby systems that are not operated routinely except for testing.
- **Pump Type** Pump design
  - **C-H** Centrifugal pump where orientation of the pump and motor shaft is in the horizontal plane
  - **C-V** Centrifugal pump where orientation of the pump and motor shaft is in the vertical plane.
  - PD Positive displacement pump.
  - **PD-R** Positive displacement pump Reciprocating

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•••••	VLS	Centrifugal vertically suspended pump where the pump driver and pumping element are connected by a line shaft within an enclosing column which contains the pump bearings
	Speed .	Identifies whether the pump speed is fixed or variable. All pumps in the IST Program Plan are tested at speeds greater than 600 rpm.
	Fixed	Speed is constant and is a function of the motor design.
	Vari	Speed is variable.
	Test Type	Parameters measured and evaluated during the pump test.
an a	Comp.	Test types prefixed with designator comply with the requirements for Comprehensive pump tests per OM Code.
	0 A	Test types prefixed with designator comply with the requirements for Group A pump tests per OM Code.
1 45 ° . 7	Grp Bara	Test types prefixed with designator comply with the requirements for Group B pump tests per OM Code.
·		Pump differential pressure
t	No esta de	Pump speed (variable speed pumps only).
	P fra	Discharge pressure
5.3° - 55		Pump or motor bearing vibration velocity (broad band unfiltered peak in inches per second or peak to peak in mils).
	Test Freq	Frequency of pump testing per OM Code
	Q	Quarterly (once per 92 days)
	Bi	Biennial (once per 731 days)
51° I	Relief Request	Reference to applicable relief request. Relief requests are located in ATTACHMENT 10.2.
50 10 - 10 1 	Remarks	Applicable notes or other unique comments that provide clarification.

# 8.2.3 Pump Groups

Pumps are divided into groups based on their frequency of operation. These groups are then used to determine the test frequency, test parameters measured, and acceptance criteria.

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- Group A Pumps are operated continuously or routinely during normal operation, cold shutdown, or refueling.
- Group B Pumps pumps in standby systems that are not operated in the system of the sy

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- 8.2.4 Testing Requirements
  - 1. When a Group A Test is required, a Comprehensive Test may be substituted.
  - 2. When a Group B Test is required, a Group A Test or Comprehensive Test may be substituted.

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- 3. A Preservice Test may be substituted for any Inservice Test.
- 8.2.5 Preservice Tests
  - Tests are conducted during the preservice test period or before implementing inservice testing. The tests shall be conducted under conditions as near as practicable to those expected during subsequent inservice testing. Only one preservice test is required for each pump. The parameters to be measured are those identified for Group A Tests, Group B Tests, and Comprehensive Tests in Table 8.2-1.
  - 2. For centrifugal and vertical line shaft pumps where resistance can be varied, flow rate and differential pressure shall be measured at a minimum of 5 points. A pump curve shall be established based on the measured points and at least one point shall be identified as the reference point. If practical, these points shall be from pump minimum flow to at least pump design flow. A pump curve need not be established for pumps in systems where resistance cannot be varied.
    - 3. For positive displacement pumps, reference values shall be taken at or near pump design pressure for the parameters specified in Table 8.2-1.
    - 4. Vibration measurements are only required to be taken at the reference point(s).

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Quantity	Preservice Test	Group A Test	Group B Test	Comprehensive Test	Remarks
Speed, N	X	х	X	X	If variable speed
Differential Pressure, $\Delta P$	X	X	X [Note (1)]	X	Centrifugal pumps, Vertical Line Shaft
Discharge Pressure, P	х	х		×	Positive Displacement, Reciprocating Positive
· · ·	: * .	111	N	23. N. S. S.	Displacement
Flow Rate, Q	X	Χ	X [Note (1)]	, <b>X</b> .,	
Vibration	х	х		tionat, Xola ≜u	Measure either $V_d$ or $V_v$
Displacement, $V_d$ Velocity, $V_v$			1 .1 P	1 8 7 gr	Peak-to-peak ` Peak

### Table 8.2-1 Inservice Test Parameters

NOTE:

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(1) For positive displacement and reciprocating positive displacement pumps, flow rate shall be measure or determined; for all other pumps, differential pressure or flow rate shall be measured or determined.

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8.2.6	Inser	vice Testing
<sup>1</sup>	Inser	vice testing shall commence when the pumps are required to be operable.
8.2.7	Refe	rence Values
	Refe	rence values shall be obtained as follows:
	1.	Initial reference values shall be determined from the results of Preservice Tests or from the results of the first Inservice Test.
	2.4	New or additional reference values shall be established in accordance with paragraphs 8.2.8, 8.2.9, and 8.2.10.
	3.	Reference values shall be established only when the pump is known to be operating acceptably.
	' <b>4</b> .	Reference values shall be established at a point(s) of operation (reference point) readily duplicated during subsequent tests.
· ;	5.	Reference values should be established in a region(s) of relatively stable pump flow.
Ň	; - ( <u>;</u> :	a. Reference values should be established within ±20% of pump design flow rate for the comprehensive test.
	3,	b. Reference values should be established within $\pm 20\%$ of design flow for Group A and Group B pumps, if practical. If not practical, the reference flow rate shall be established at the highest practical flow rate.
une in Vine provi Provinsi Vine com	<b>6</b> .	All subsequent test results shall be compared to these initial reference values or to new reference values established in accordance with paragraphs 8.2.8, 8.2.9, and 8.2.10.
and the second secon Second second second Second second	7.	If the particular parameter being measured or determined can be significantly influenced by other related conditions, then these conditions shall be analyzed and documented in the record of test.
8.2.8	Effec	t of Pump Maintenance, Replacement, or Repair
a po	1.	When a reference value or set of reference values may have been affected by repair, replacement, or routine servicing of a pump, a new reference value or set of reference values shall be determined in accordance with paragraph 8.2.7 or the previous value reconfirmed by a Comprehensive or Group A test run before declaring the pump operable.
	2.	The Owner shall determine whether the requirements of Preservice Testing (paragraph 8.2.5), to reestablish reference values, apply.
	3.	Deviations between the previous values and new values shall be evaluated, and verification that the new values represent acceptable pump operation shall be placed in the record of test.

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#### 8.2.9 Establishment of Additional Set of Reference Values

If it is considered necessary or desirable, for some reason other than paragraph 8.2.8, to establish an additional set of reference values, a Group A or Comprehensive Test shall be performed at the conditions of an existing set of reference values and the results analyzed. If operation is acceptable in accordance with paragraph 8.2.29 an additional set of reference values may be established as follows. 12.13

For centrifugal pumps, the additional set of reference values shall be determined from the pump curve established during Preservice Testing (paragraph 8.2.5). Vibration acceptance criteria shall be established by a Group A or Comprehensive test at the new reference point. If vibration data was taken at all points used in determining the pump curve, an interpolation of the new vibration reference value is acceptable.

For positive displacement pumps, the additional set of reference values shall be established in accordance with Preservice Testing (paragraph 8.2.5).

A test shall be run to verify the new reference values before their implementation. Whenever an additional set of reference values is established. the reason for so doing shall be justified and documented in the record of test. 化二氟基化 计推进 化过程分离 法法国际部门 化合物合物

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## 8.2.10 New Reference Values

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In cases where the pump's test parameters are within either the alert or required action ranges, and the pump's continued use at the changed values is supported by an analysis, a new set of reference values may be established. This analysis shall include verification of the pump's operational readiness. The analysis shall include a pump level and system level evaluation of operational

readiness, the cause of the change in pump performance, and an evaluation of all trends indicated by available data. The results of this analysis shall be documented in the record of test. The system level evaluation shall be performed by the applicable system engineer. Caution should be exercised if an evaluation is used to recommend pump operability when performance is in

the alert or required action range. OPS-NGGC-1305, Operability Determinations should be consulted to determine if the process for a degraded

or non-conforming condition should be followed. all second and the second s

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#### 8.2.11 **Data Collection**

#### 8.2.12 General

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Accuracy - Instrument accuracy shall be within the limits of Table 8.2-2. If a parameter is determined by analytical methods instead of by measurement, then the determination shall meet the requirements of the table. For individual analog instruments, the required accuracy is percent of full scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

#### 2. Range

- A CONTRACT OF AND A CONTRACT OF The full-scale range of each analog instrument shall not be greater than three times the reference value.
- Digital instruments shall be selected such that the reference value does not exceed 90% of the calibrated range of the instrument.
- Vibration instruments are excluded from the range requirements identified above.

·	• ;	Requi	Table 8.2-2 ired Instrument A	
1	Quantity		· · · · · · · · · · · · · · · · · · ·	Comprehensive and
	Pressure	. )- <b>(</b> , -	±2	
	Speed		±2	''' <b>±2</b>
	Vibration		<b>±5</b> 🔅 😳	±5
: - :- :	Differential Pres	sure	±3 · · · · · · · · · · · · · · · · · · ·	±1⁄2

- 3. Instrument Location - The sensor location shall be established by the Owner, documented in plant records, and shall be appropriate for the . , parameter being measured. The same location shall be used for subsequent tests. Instruments that are position sensitive shall be either permanently mounted, or provision shall be made to duplicate their position. . .
- Calibration Instruments and instrument loops shall be calibrated in 4. accordance with the H. B. Robinson Quality Assurance Program.
  - Fluctuations Symmetrical dampening devices of averaging techniques 5. may be used to reduce instrument fluctuations. Hydraulic instrument may be damped by using gage snubbers or by throttling small valves in instrument lines.
  - Frequency Response Range The frequency response range of the 6. vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hz.

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### 8.2.13 Pressure

- 1. Gage Lines If the presence or absence of liquid in a gage line could produce a difference of more than 0.25% in the indicated value of the measured pressure, means shall be provided to ensure or determine the presence or absence of liquid as required for the static correction used.
- 2. Differential Pressure When determining differential pressure across a pump, a differential pressure gage or a differential pressure transmitter that provides direct measurement of pressure difference, or the difference between the pressure at a point in the inlet and the pressure in the outlet shall be used.

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### 8.2.14 Rotational Speed

Rotational speed measurements of variable speed pumps shall be taken by a method that meets the requirements of paragraph 8.2.12.

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# 8.2.15 Vibration

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- 1. On centrifugal pumps, except vertical line shaft pumps, measurements shall be taken in a plane approximately perpendicular to the rotating shaft in two approximately orthogonal directions on each accessible pump thrust bearing housing. Measurements shall also be taken in the axial direction on each accessible pump thrust bearing housing.
  - 2. On vertical line shaft pumps, measurements shall be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction.
  - 3. On reciprocating pumps, the location shall be on the bearing housing of the crankshaft, approximately perpendicular to both the crankshaft and the line of plunger travel.
  - 4. If a portable vibration indicator is used, the measurement points shall be clearly identified on the pump to permit subsequent duplication in both location and plane.
- 8.2.16 Flow Rate of the sub-sub-sub-
  - When measuring flow rate, a rate or quantity meter shall be installed in the pump test circuit. If a meter does not indicate flow rate directly, the record shall include the method used to reduce data.
- 8.2.17 Testing Methods

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- Testing methods are clearly defined within the implementing procedures.
- 8.2.18 Frequency of tests
  - Group A and Group B Tests shall be performed quarterly. Comprehensive Tests shall be performed Elennially.
    - Star Star
- 8.2.19 Test Procedure
  - Implementing Group A, Group B and comprehensive pump tests are listed in ATTACHMENT 10.5.

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### 8.2.20 Group A Test

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Group A Tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table 8.2-1 shall be determined ..... and recorded as required by this paragraph. The test shall be conducted as follows. . . .

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- 1. The pump shall be operated at nominal motor speed for constant speed drives or at a speed adjusted to the reference point  $(\pm 1\%)$  for variable speed drives.
- .2. For centrifugal and vertical line shaft pumps, the resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate may be varied until the differential pressure equals the reference point and the flow rate determined and compared to its reference value.

3. For positive displacement pumps, the resistance shall be varied until the discharge pressure equals the reference point. The flow rate shall then be determined and compared to its reference value: ÷.,

4. Where resistance cannot be varied, flow rate and pressure shall be determined and compared to their respective reference values.

5. Vibration (displacement or velocity) shall be determined and compared with the reference value. Vibration measurements shall be broadband ۰. (unfiltered). If velocity measurements are used, they shall be peak. If displacement amplitudes are used, they shall be peak to peak.

6. All deviations from the reference values shall be compared with the ranges in Table 8.2-3 and Table 8.2-4 and corrective action taken as specified in paragraph 8.2.29 . . . . .

7. The vibration measurements shall be compared to both the relative and absolute criteria shown in the alert and required action ranges in Table 8.2-3.

Standard Barris A. Standard B. Standard Strategies & State 8.2.21 Group B Test

> Group B tests shall be conducted with the pump operating at a specified reference point. The test parameter value identified in Table 8.2-1 shall be determined and recorded as required by this paragraph. The test shall be conducted as follows.

- 1. The pump shall be operated at nominal motor speed for constant speed drives or at a speed adjusted to the reference point  $(\pm 1\%)$  for variable speed drives.
- 2. For centrifugal and vertical line shaft pumps, the pressure or flow rate shall be determined and compared to its reference value.
- 3. For positive displacement pumps, the flow rate shall be determined and compared to its reference value.

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4.	System resistance ma	y be varied as necessary to achieve	eve the reference
	point.		

5. All deviations from the reference values shall be compared with the ranges of Table 8.2-5 and correction action taken as specified in paragraph 8.2.29.

8.2.22 Comprehensive Tests

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Comprehensive Tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table 8.2-1 shall be determined and recorded as required by this paragraph. The test shall be conducted as follows.

1. The pump shall be operated at nominal motor speed for constant speed drives or at a speed adjusted to the reference point ( $\pm$  1%) for variable speed drives.

2. For centrifugal and vertical line shaft pumps, the resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate may be varied until the differential pressure equals the reference point and the flow rate determined and compared to its reference value.

3. For positive displacement pumps, the resistance shall be varied until the discharge pressure equals the reference point. The flow rate shall then be determined and compared to its reference value.

4. Where resistance cannot be varied, flow rate and pressure shall be determined and compared to their respective reference values.

Vibration (displacement or velocity) shall be determined and compared with the reference value. Vibration measurements shall be broadband (unfiltered). If velocity measurements are used, they shall be peak. If displacement amplitudes are used, they shall be peak to peak.

6. All deviations from the reference values shall be compared with the ranges in Table 8.2-3 and Table 8.2-6 and corrective action taken as specified in paragraph 8.2.29.

7. The vibration measurements shall be compared to both the relative and

absolute criteria shown in the alert and required action ranges in Table 8.2-3.

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Table 8.2-3		
Group A and Comprehensive Tests Vibration Acceptance Criteria		

Pump Type	Pump Speed	Test Parameter	Acceptable Rarige	Alert Range	Required Action Range
Centrifugal, Vertical Line Shaft, Positive Displacement [Note (2)]	<600 rpm	$V_d$ or $V_v$	≤2.5V <sub>r</sub>	>2.5Vr to 6Vr or >10.5 to 22 mils	>6V₂ or >22 mils
Centrifugal, Vertical Line Shaft, Positive Displacement [Note (2)]	≥600 rpm	V <sub>d</sub> or V <sub>v</sub>	≤2.5Vr	>2.5Vr to 6Vr or >0.325 to 0.7 in./sec	>6Vr or >0.7 in./sec
Reciprocating Positive Displacement		$V_d$ or $V_v$	)) + ≤2.5Vr	>2.5V <sub>r</sub> to 6V <sub>r</sub>	>6 <i>V</i> r

÷. GENERAL NOTE: The subscript *r* denotes reference value. 1.00 125 · `` NOTES:

(1) Vibration parameter is per Table 8.2-1. Vr is vibration reference value in the selected unit.

(2) Refer to OM Code Figure ISTB 5223-1 to establish displacement limits for pumps with speeds ≥600 rpm or velocity limits for pumps with speeds <600 rpm. and a second second second

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•	1	54 . s	Group A Test Hydraulic Acceptance Criteria	5 X

Test Descenter		Required Ac	tion Range
Test Parameter	Acceptable Range	Low	High
P (Positive Displacement, Reciprocating Positive Displacement)	0.93 to 1.10 <i>P</i> <sub>r</sub> 0.90 to <0.93 <i>P</i> <sub>r</sub>	<0.90 <i>P</i> r	>1.10 <i>P</i> r
$\Delta P$ (Vertical Line Shaft)	0.95 to 1.10⊿Pr 0.93 to <0.95⊿Pr	<0.93⊿Pr	>1.10⊿Pr
Q (Positive Displacement, Reciprocating Positive Displacement and Vertical Line Shaft)	0.95 to 1.10Qr 0.93 to <0.95Qr		>1.10Qr
⊿P (Centrifugal)	0.90 to $1.10 \Delta P_r$ none	<0.90⊿Pr	>1.10⊿Pr
Q (Centrifugal)	0.90 to 1.10Qr none	<0.900.	>1.10Qr

GENERAL NOTE: The subscript r denotes reference value: The subscript r denotes reference value: Table 8 2-5

artyn. ar <b>Te</b>	st Parameter	Acceptable Range	11 A. 1	
	and Change and State	· · · · · · · · · · · · · · · · · · ·	Low	High
⊿P (Centrifi Shaft), or	ugal, Vertical Line	0.9C to 1(10⊿P <sub>n</sub> . 3 (194))	<0.90⊿Pr	>1.10⊿P
Q (All types	s), [See Note (1)]	0.90 to 1.10Q	<0.90Q	>1.10Q
		notes reference value. splacement pumps.		
			:	

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Test Deversetes	Associable Dense		Required Actio	
Test Parameter	Acceptable Range	Alert Range	Low	High
P (Positive displacement, Reciprocating Positive Displacement)	0.93 to 1.03 <i>P</i> ,	0.90 to <0.93 <i>P</i> r	<0.90 <i>P</i> r	>1.03 <i>P</i> r
⊿P (Vertical Line Shaft)	0.95 to 1.03⊿P <sub>r</sub>	0.93 to <0.95⊿Pr	<0.93⊿Pr	>1.03⊿P,
Q (Positive Displacement, Reciprocating Positive Displacement and Vertical Line Shaft)	0.95 to 1.03Q <sub>r</sub>	0.93 to <0.95Q,	<0.93Qr	>1.03Qr
△P (Centrifugal)	0.93 to 1.03⊿Pr	0.90 to <0.93⊿P <sub>r</sub>	<0.90⊿Pr	>1,03⊿Pr
Q (Centrifugal)	0.94 to 1.03Q <sub>r</sub>	0.90 to <0.94Qr	<0.90Qr	>1.03Qr

Table 8.2-6 All the second **Comprehensive Test Hydraulic Acceptance Criteria** 

NOTE: The subscript r denotes reference value.

8.2.23 Pumps in Regular Use

Group A pumps that are operated more frequently than every 3 months need not be run or stopped for a test provided the plant records show the pump was operated at least once every three months at the reference conditions and quantities specified were determined, recorded, and analyzed.

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8.2.24 Pumps in Systems Out of Service

> For a pump in system declared inoperable or when it is not required to be operable, the test schedule need not be followed. Within 3 months before the system is placed in an operable status, the pump shall be tested and then the normal test schedule followed. Pumps that can only be tested during plant operation shall be tested within 1 week following plant startup. ವರ್ಷ-೧೯೯೯ ಎಂಗಿ 4 (2 -

Pumps Lacking Required Inventory 8.2.25

> Group B pumps lacking required fluid inventory (pumps in dry sumps) shall receive a comprehensive test at least once every two years except as provided in paragraph 8.2.24. The required fluid inventory shall be provided during the test. A Group B Test is not required.

- Duration of Tests Segment Action and the second second second second 8.2.26
  - 1. Group A Test After pump conditions are as stable as the system permits, each pump shall be run for at least 2 minutes. At the end of this time, at least one measurement or determination of the quantities required by Table 8.2-1 shall be made and recorded.
  - Group B Test After pump conditions are stable, at least one 2. measurement or determination of the quantity required by Table 8.2-1 shall be made and recorded. and the state
  - 3. Comprehensive Test – After pump conditions are as stable as the system permits, each pump shall be run for at least 2 minutes. At the end of this time, at least one measurement or determination of the quantities required by Table 8.2-1 shall be made and recorded.

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8.2.27 Analysis and Evaluation

Requirements for analysis and evaluation are defined within implementing procedures.

8.2.28 Trending

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Test parameters shown in Table 8.2-1, except for fixed values shall be trended.

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- 8.2.29 Acceptance Criteria
  - Acceptance offena
     Alert Range If the measured test parameters values fall within the alert range of Table 8.2-3, Table 8.2-4, or Table 8.2-6, as applicable, the frequency offesting specified in paragraph 8.2.18 shall be doubled until the cause of the deviation is determined and the condition is corrected.
    - 2. Action Range If the measured test parameter values fall within the required action range of Table 8.2-3, Table 8.2-4, or Table 8.2-6, as applicable, the pump shall be declared inoperable until the cause of the deviation is determined and the condition is corrected, or an analysis of the pump is performed and a new reference values are established in accordance with paragraph 8.2.10.
    - 3. Systematic Error When a test shows measured parameter values that fall outside of the acceptance range of Table 8.2-3, Table 8.2-4, Table 8.2-5, or Table 8.2-6, as applicable, and have resulted from an identified systematic error such as improper system lineup or inaccurate system instrumentation, the test shall be rerun after correcting the error.

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8.3 IST Program Development - Valves

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8.3.1 Valve Scope

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- 1. Valves included in the IST Program Plan are those active or passive Safety Class 1, 2, and 3 valves that are required to perform a specific function in:
  - Shutting down the reactor to the safe shutdown condition, or
  - Maintaining the reactor in the safe shutdown condition, or
  - Mitigating the consequences of an accident.
- Pressure relief devices included in the IST Program Plan are those Safety
   Class 1, 2, and 3 pressure relief devices for protecting systems or portion of systems that perform a specific function in:
  - Shutting down the reactor to the cold shutdown condition, or
  - Maintaining the reactor in the cold shutdown condition, or
  - Mitigating the consequences of an accident.
  - The following are excluded from above, provided that they are not required to perform a specific function as specified above:
    - Valves used only for operating convenience such as vent, drain, instrument, and test valves.
    - Valves used only for system control, such as pressure regulating valves.
      - Valves used only for system or component maintenance.
      - External control and protection systems responsible for sensing plant conditions and providing signals for valve operation.
      - Skid-mounted valves and component subassemblies that are tested as part of the major component.

Valves (except some vent and drain valves) that are excluded from the IST Program are listed in ATTACHMENT 10.7.

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### 8.3.2 Valve Table Format

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A complete list of valves in the scope of the IST Program and their associated required tests are listed (in a tabular format) in ATTACHMENT 10.6. The Valve Table is sorted alpha-numerically by valve number. A description of each column in the Valve Table is shown below with applicable abbreviations.

	column in the va	ave Table is shown below with applicable abbievrations.
· *	Valve Number	Unique alpha-numeric designator assigned to each valve. The valve number used in the Valve Table is taken from the P&ID's listed in ATTACHMENT 10.1.
	P&ID (SHT)	P&ID in which the valve is located. A complete list of P&ID's is provided in ATTACHMENT 10.1.
	Coord	Drawing coordinate of valve location on the P&ID.
	Cat	Category as defined in paragraph 8.3.4.
	Α	Valves for which seat leakage is limited to a specific amount in the closed position for fulfillment of their required function(s).
	A/C	Valves which are both self actuating and for which seat leakage is limited to a specific amount in the closed position for fulfillment of their required function(s).
	<b>B</b>	Valves for which seat leakage in the closed position is inconsequential for fulfillment of the required function(s).
	С	Valves which are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves) for fulfillment of the required function(s).
def the state of	<b>D</b>	Valves which are actuated by an energy source capable of only one operation such as rupture disks or explosively actuated valves. (Note: There are no Category D components at RNP.)
	Act Pass	Identifies whether the valve performs an active or passive safety function as defined in paragraph 8.3.4.
	Act	Active valve
	Pass	Passive valve
$\epsilon_{1}$ , $\epsilon_{2}$	Size	Valve size, in inches.
	Valve Type	Valve design body style.
	BL	Ball valve
	BF	Butterfly valve
i		Check valve states we state and a set
, , , , , , , , , , , , , , , , , , ,	201 <b>DA</b>	Diaphragm:valve
	GA	Gate valve
	GL	Globe valve
	ND	Needle valve
11 A.	SCK	Stop check valve

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TW     Three-way valve       VB     Vacuum breaker       PORV     Power Operated Relief Valve that is remotely actuated and not capacity certified under ASME Section III overpressure protection requirements       Act Type     Actuator type used to change valve obturator position.       AO     Air operator       HYD     Hydraulic operator       PNE     Pneumatic operator       M     Manual operator       MO     Motor operator       SA     Self actuated       SO     Solenoid operator       Nom Pos     Identifies the valve position during normal plant operation as defined by plant operating procedures.       C     Closed       LC     Locked Closed       LO     Locked Closed       Safe Pos     Identifies the valve position required for the valve to perform its function.       C     Closed       O     Open       O/C     Open and Closed       Fail Pos     Identifies the position of the valve on loss of actuator power.       AI     As is       C     Closed       O     Open       N/A     Not applicable. Valve does not have a fail position       App J Type C     Identifies if the valve is equipped with remote position indication.       RNP2 Fifth IST Plan     Revision 1	RV	Relief valve	
PORV       Power Operated Relief Valve that is remotely actuated and not capacity certified under ASME Section III overpressure protection requirements         Act Type       Actuator type used to change valve obturator position.         AO       Air operator         HYD       Hydraulic operator         M       Manual operator         MO       Motor operator         SA       Self actuated         SO       Solenoid operator         SA       Self actuated         SO       Solenoid operator         Norm Posi       Identifies the valve position during normal plant operation as defined by plant operating procedures.         C       Closed         LO       Locked Open         O       Open         O/C       Open and Closed         Safe Pos       Identifies the valve position required for the valve to perform its function.         C       Closed         O       Open         O/C       Open and Closed         Fail Pos       Identifies the position of the valve on loss of actuator power.         AI       As is         C       Closed         O       Open         O/C       Open and Closed         Fail Pos       Identifies the valve is included in the 10CFR50 Ap	TW	Three-way valve	
capacity certified under ASME Section III overpressure protection requirements         Act Type       Actuator type used to change valve obturator position.         AO       Air operator         HYD       Hydraulic operator         PNE       Pneumatic operator         MO       Motor operator         SA       Self actuated         SO       Solenoid operator         Norm Pos       Identifies the valve position during normal plant operation as defined by plant operating procedures.         C       Closed         LC       Locked Closed         LO       Locked Closed         LO       Locked Closed         JO       Open         O/C       Open and Closed         Safe Pos       Identifies the valve position required for the valve to perform its functon.         C       Closed         O       Open         O/C       Open and Closed         Fail Pos       Identifies the position of the valve on loss of actuator power.         AI       As is         C       Closed         O       Open         O/C       Open and Closed         Fail Pos       Identifies the valve is included in the 10CFR50 Appendix J, Type C lesting program.         N/A	VB	Vacuum breaker	
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defined by plant operating procedures.         C       Closed         LC       Locked Closed         LO       Locked Open         O       Open and Closed         O/C       Open and Closed         Safe Pos       Identifies the valve position required for the valve to perform its function.         C       Closed         O       Open         O/C       Open and Closed         D       Open         O/C       Open and Closed         Fail Pos       Identifies the position of the valve on loss of actuator power.         AI       As is         C       Closed         O       Open         N/A       Not applicable. Valve does not have a fail position         App J Type C       Identifies if the valve is included in the 10CFR50 Appendix J, Type C testing program.         N       No         Y       Yes         Pos Ind       Identifies if the valve is equipped with remote position indication.	SO SO	Solenoid operator	
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Type C testing program.         N       No         Y       Yes         Pos Ind       Identifies if the valve is equipped with remote position indication.	N/A	Not applicable. Valve does not	have a fail position
N       No         Y       Yes         Pos Ind       Identifies if the value is equipped with remote position indication.	Арр Ј Туре С		••
Y       Yes         Pos Ind       Identifies if the value is equipped with remote position indication.	Ν	No	
indication.	Y		
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n n n n n n	No. No.
Y	Yes
Test Type	Identifies the test requirements which apply to the valve.
DA	Valve will be disassembled and visually inspected in accordance with paragraph 8.3.34.3 as described in the applicable Refueling Outage Test Justification.
CV	Closure verification of a check valve to satisfy the bi- directional test requirement of paragraph 8.3.34.1.
FC	Fail stroke closed exercise valve with a fail-safe actuator to the closed position in accordance with paragraph 8.3.18.2
<b>FF</b>	Full stroke open exercise of Category C valves in accordance with paragraph 8.3.31.
<b>FO</b> <sup>restand</sup>	Fail stroke open exercise valve with a fail-safe actuator to the open position in accordance with paragraph 8.3.18.2.
FS	Full stroke exercise Category A or B valves to the open and closed position in accordance with paragraph 8.3.15.
FV	Functional verification of component operation (this is an Augmented test which does not satisfy OM Code requirements)
sa y ta	Leak test per 10CFR50 Appendix J, Type C, in accordance with paragraph 8.3.26 (containment isolation function only)
LK	Leak test in accordance with paragraph 8.3.27 (leakage rate for other than containment isolation valves)
	Open verification of a check valve to satisfy the bi-directional test requirement in accordance with paragraph 8.3.34.1.
en de la composition de la composition Reference de la composition de la compos	Valve with remote position indication verified in accordance with paragraph 8.3.12.
RF	Full stroke close exercise of Category C valves in accordance with paragraph 8.3.31.
RL	Relief valve testing in accordance with EST-112.
TM	Stroke time valve open (O) or closed (C) in accordance with paragraph 8.3.17.
Test Freq	Identifies the frequency required for valve testing as determined by OM Code:
App. I	Test frequency in accordance with EST-111 and Appendix I of the OM Code. For augmented components, the frequency may be set in accordance with the PM program.
alle state of <b>App: II</b> for a	monitoring program and as described in paragraph 8.3.35 and
an a	<b>TMM-008.</b>

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App. J	Test frequency in accordance with the 10CFR50 Appendix J program for Type C testing.
Bi	Biennial, Once per 731 days (2 years).
CS	Cold Shutdown, Testing performed during the cold shutdown condition (if not performed during the previous 92 days). If required, testing may be performed during the transition period between normal operation and cold shutdown
	Quarterly, Once per 92 days
R	Refueling Outage, Testing performed during the refueling outage condition. If required, testing may be performed during the transition period between normal operation and refueling
an an an an an an Africa San Arrange	This field identifies, by unique number, applicable relief request (RR), cold shutdown test justification (VCS) and refueling outage test justification (VRS) for the individual component or test. These documents are located in ATTACHMENT 10.2, 10.3, and 10.4 respectively.
Remarks	Applicable notes or other unique comments that provide clarification.

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#### Excluded Valve Table 8.3.3

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Valves (except yent and drain valves) that are excluded from the IST Program are listed in ATTACHMENT 10.7. y . . . .

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	Inservice Test Reg	iromont	c
 . :	Table 8.3-	l :,	:
 :	1 H (A) (A)	· · ·	

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Category	Valve Function	Leakage Test Procedure	Exercise Test Procedure	Special Test Procedure [Note (1)]	Position Indication Verification
Α	Active	See para. 8.3.24	See para. 8.3.13	None	See para. 8.3.12
Α	Passive	See para. 8.3.24	None	None	See para. 8.3.12
в , , , , , , , , , , , , , , , , , , ,	Active	None	See para. 8.3.13	None	See para. 8.3.12
В	Passive	None	None	None	See para. 8.3.12
C (Safety and Relief) [Note (3)]	Active	None [Note (2), (3)]		None	See para. 8.3.12
C (Check) [Note (4)]	Active	None [Note (3)]	See para. 8.3.298	None	See para. 8.3.12
D	Active	None [Note (3)]		See paragraphs 8.3.39, 8.3.40	None

NOTE: (1) Note additional requirement for fail-safe valves, paragraph 8.3.19.

(2) Leak test as required for Mandatory Appendix I

(3) When more than one distinguishing category characteristic is applicable, all requirements of each of the individual categories are applicable, although duplication or repetition of common testing requirements is not necessary.

(4) If a check valve used for a pressure relief device is capacity certified, then it shall be classified as a pressure or vacuum relief device. If a check valve used to limit pressure is not capacity certified, then it shall be classified as a check valve.

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### 8.3.4 Valve Categories

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Valves shall be placed in one or more of the following categories. When more than one distinguishing category characteristic is applicable, all requirements of each of the individual categories are applicable, although duplication or repetition of common testing requirements is not necessary.

- Category A Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their required function.
- Category B Valves for which seat leakage in the closed position is inconsequential for fulfillment of the required function(s).

• Category C – Valves that are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves) for fulfillment of their function.

 Category D – Valves that are actuated by an energy source capable of only one operation, such as rupture disks or explosively actuated valves.

In addition to the valve categories described above, valves are also characterized as active or passive based on the definitions below.

• Active Valves – Valves that are required to change obturator position to accomplish their required function.

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• Passive Valves – Valves that maintain obturator position and are not required to change obturator position to accomplish their required function.

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### 8.3.5 Preservice Testing

Each valve shall be tested during the preservice period. These tests shall be conducted under conditions as near as practicable to those expected during subsequent inservice testing. Note that the Preservice Period had already passed when IST requirements were first introduced at Robinson. Only one preservice test of each valve is required with the following exceptions:

• Any valve that has undergone maintenance that could affect its performance after the preservice test shall be tested in accordance with paragraph 8.3.8;

 Safety and relief valves and non-reclosing pressure relief devices shall meet the preservice test requirements of Appendix I of the OM Code.

### 8.3.6 Inservice Testing

Inservice testing shall commence when the valves are required to be operable to fulfill their required function(s).

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8.3.7 Reference Values

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- Reference values shall be determined from the results of preservice 1. testing or from the results of inservice testing. These tests shall be performed under conditions as near as practicable to those expected during subsequent inservice testing.
- Values shall be established only when the valve is known to be operating 2. acceptably. If the particular parameter being measured can be significantly influenced by other related conditions, then these conditions shall be analyzed.
- Effect of Valve Maintenance, Replacement, or Repair 8.3.8
  - When a valve or its control system has been replaced, repaired, or has 1. undergone maintenance that could affect the valves performance, a new reference value shall be determined or the previous value shall be reconfirmed by an inservice test before it is returned to service. Deviations between the previous and new reference values shall be 1.00 identified and analyzed. Verification that the new values represent acceptable operation shall be documented in the record of tests.
- Safety and relief valves and nonreclosing pressure relief devices shall be 2. tested as required by the replacement, repair and maintenance requirements of EST-027, EST-028, EST-068, EST 112 and EST-130. 2 . . . . These EST's meet the requirements of OM Code, Appendix I. !
- 8.3.9 Establishment of Additional Set of Reference Values
  - If it is necessary or desirable for some reason, other than the 1. . . requirements of paragraph 8.3.8, to establish additional reference values, an inservice test shall first be run at the conditions of an existing set of reference values, or, if impractical, at the conditions for which the new reference values are required, and the results analyzed.
  - If operation is acceptable in accordance with 8.3.17.1 below, a second 2. test shall be performed under the new conditions as soon as practicable.
  - The results of the second test shall establish the additional reference 3. values.
- 4. The reasons for establishing additional reference values shall be justified and documented in plant records.
- Inservice Testing Requirements 8.3.10 00

Active and passive Category A, B, C, and D valves shall be tested in accordance with Table 8.3-1.

NOTE: There are no ASME Code class Category D (explosive valves, rupture discs) at RNP.

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8.3.11 Testing Methods

8.3.12	Valve Position Verification
1911 1	Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated.
··· · · ·	• Where practicable, this local observation should be supplemented by other indications such as flow or pressure. These observations need not be concurrent.
	• Where local indication is not possible other indications shall be used to verify valve operation.
8.3.13	Category A and B Valve Exercise Tests
8.3.14	Exercising Test Frequency
	Active Category A and B valves shall be tested nominally every three months, except as provided by paragraphs 8.3.15, 8.3.20 and 8.3.21.
8.3.15	Exercising Requirements (1997) and 1997 and 1997 and 1997 and 1997.
a de la companya de la	Valves shall be tested as follows:
. 1	1. Full stroke exercising during plant operation to the position required to fulfill its function;
	2. If full-stroke exercising during plant operation is not practicable, it may be limited to part-stroke exercising during plant operation and full-stroke exercising during cold shutdown;
in an	3. If exercising is not practicable during plant operation, it may be limited to full stroke exercising during cold shutdown;
	4. If exercising is not practicable during plant operation and full-stroke during cold shutdowns is also not practicable, it may be limited to part stroke during cold shutdowns, and full-stroke during refueling outages;
	5. If exercising is not possible during plant operations or cold shutdowns, it may be limited to full stroke exercising during refueling outages;
	6. Except as specified below, valves full-stroke exercised during cold shutdowns shall be exercised during each cold shutdown. Exercising is not required if the time period since the pervious full-stroke exercise is less than 3 months.
	7. Valve exercising during cold shutdown shall commence within 48 hours of achieving cold shutdown and continue until all testing is completed or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdowns will be tested prior to plant startup and all valves that are required to perform their specified function are exercised every 3 months. However, it is not intended to keep the plant in cold shutdown to complete cold shutdown testing.

8. All valve testing required to be performed during a refueling outage shall be completed before returning the plant to operation.

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#### 8.3.16 Valve Obturator Movement

The necessary valve obturator movement shall be determined by exercising the valve while observing an appropriate indicator, such as indicating lights or observing other evidence such as changes in system pressure, flow rate, level, or temperature.

#### 8.3.17 Power-Operated Valve Stroke Testing:

Limiting values of full-stroke time of each power-operated valve shall be 1. specified;

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- 2. The stroke time shall be measured to the nearest second;
- 3. Any abnormality or erratic action shall be recorded and an evaluation shall be made to determine if corrective action is required.

#### Power-Operated Control Valve Testing 8.3.18

- . . 1. For power-operated control valves that have only a fail-safe safety function, the requirements for valve stoke-time measurement testing, the associated stroke-time test acceptance criteria, and any corrective actions that would result from stroke-time testing need not be met. For these valves, all other applicable requirements listed below shall be met.
  - and the states and the states of the states Stroke Testing a.
    - b. Bosition Indication Testing
    - Leakage Testing c.

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d. Any abnormality or erratic action shall be recorded and an evaluation shall be made regarding the need for corrective action.

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2. Valves with fail-safe actuators shall be tested by observing the operation of the actuator upon loss of valve actuator power in accordance with the exercising frequency of paragraph 8.3.14. Note that there are valves with fail-safe actuators where neither the actuator nor the valve has a safety function. These actuators are not included in the program. 

#### Power-Operated Relief Valve Testing 8.3.19

Power-operated relief valves testing shall be performed in the following sequence or concurrently. If testing in the following sequence is impractical, it may be performed out of sequence, and a justification shall be documented in the record of tests for each test or in the test plan. Pursuant to this requirement, leakage testing of PORVs is performed on a continuous basis using installed plant indicators and daily RCS leak rate computations. These tests are performed at normal operating pressure and exceed the test pressures required by Appendix I of the OM Code for e seat tightness testing. Therefore, an additional seat leakage test is not necessary. RNP power-operated relief valves are not capacity certified.

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The following test requirements apply to power-operated relief valves

- a. Leakage testing
- Stroke testing, including stroke time b.
- Position Indication Testing C.
- · d. Any abnormality or erratic action shall be recorded and an evaluation shall be made regarding the need for corrective action ۰,

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- Stroke testing shall be performed during normal operating е. conditions for temperature and pressure
- 8.3.20 Valves in Regular Use

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Valves that operate in the course of plant operation at a frequency that satisfies the exercising requirements need not be additionally exercised, provided that the observations otherwise required for testing are made and analyzed during operation. The results shall be recorded in the plant record at intervals no greater than specified in paragraph 8.3.14.

Valves in systems Out of Service 8.3.21

> For valves in a system declared inoperable or not required to be operable, the exercising test schedule need not be followed. Valves shall be exercised within three months before placing the system in operable status and the normal test frequency resumed. and the second of the second second second

8.3.22 Power Operated Valves Stroke Time Acceptance Criteria

Test results shall be compared to the initial reference values or reference values established in accordance with paragraphs 8.3.8 or 8.3.9.

- Motor operated valves with reference stroke times of greater than 10 i: 1. NACE . seconds shall exhibit no more than ± 15% change in stroke time when compared to the reference value.
  - 2. Pneumatic, Hydraulic, Solenoid and Power-operated relief valves with reference stroke times of greater than 10 seconds shall exhibit no more than  $\pm$  25% change in stroke time when compared to the reference value.

Motor operated valves with reference stroke times of less than or equal to 10 seconds shall not exhibit no more than  $\pm$  25% nor  $\pm$  1 second change in stroke time, whichever is greater, when compared to the reference W value: A third of the second of the second of the second

- Pneumatic, Hydraulic, Solenoid and Power-operated relief valves with 4. reference stroke times of less than or equal to 10 seconds shall exhibit no more than ±50% change in stroke time when compared to the reference the source value.
- Power operated valves that stroke in less than 2 seconds may be 5. exempted from paragraphs 3 and 4 above. In such cases the maximum stroke time shall be 2 seconds. المراجع والمراجع and the second second

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#### 8.3.23 Corrective Action for Stroke-Timed Valves

- 1. If a valve fails to exhibit the required change of obturator position or exceeds the limiting values of full-stroke time of paragraph 8.3.17.1, the valve shall be immediately declared inoperable.
- 2. Valves with measured stroke times that do not meet the acceptance criteria of paragraph 8.3.22, shall be immediately retested or declared inoperable. If the valve is retested and the second set of data also does not meet the acceptance criteria; the valve shall be declared inoperable. If the second set of data meets the acceptance criteria, the cause of the initial deviation shall be analyzed and documented in the record of tests.
- 3. Valves declared inoperable shall be repaired, replaced, or the data may be analyzed to determine the cause of the deviation and the valve shown to be operating acceptably.
  - Valve operability based upon analysis shall have the results recorded in the record of tests. Caution should be exercised if an evaluation is used to recommend valve operability when performance is in the alert or required action range. OPS-NGGC-1305, *Operability Determinations* should be consulted to determine if the process for a degraded or nonconforming condition should be followed.

Before returning a repaired or replaced valve to service, a test demonstrating satisfactory operation shall be performed.

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8.3.24 Seat Leakage Tests for Category A Valves

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Category A valves shall be leakage tested, except that valves which function in the course of plant operation in a manner that demonstrates functionally

- adequate seat leak tightness need not be additionally tested. In such cases,
   the valve record shall provide the basis for the conclusion that operational observations constitute satisfactory demonstration.
- 8.3.26 Containment Isolation Valves
  - 1. Containment isolation valves with a leakage rate requirement based on an Appendix J program shall be tested in accordance with TMM-005. Procedure TMM-005 meets the requirements of 10CFR50, Appendix J
  - 2. Containment isolation valves with a leakage requirement based on other functions shall be tested in accordance with paragraph 8.3.27.
- 8.3.27 Leakage Rate for other than Containment Isolation Valves
  - These valves shall be leakage tested to verify their leak-tight integrity. Valve closure before seat leakage testing shall be by using the valve operator with no additional closing force applied.
  - 1. Frequency Tests shall be conducted at least once every two years,
  - 2. Differential Test Pressure Differential pressure shall be applied in the same direction as when the valve is performing its function with the following exceptions:

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	a. Globe valves may be tested with the pressure under the seat,
jan an a	<ul> <li>Butterfly valves may be tested in either direction, provided their seat construction is designed for sealing against pressure on either side.</li> </ul>
·	<ul> <li>Double-disk gate valves may be tested by pressurizing between the seats,</li> </ul>
., a.,	d. Seat leakage tests involving pressure differential lower than function pressure differentials are permitted in those valves in which service pressure will tend to diminish the overall leakage channel opening,
a :	e. Valves that do not qualify for reduced pressure testing shall be tested at maximum function pressure.
3.	Seat Leakage Measurement – Valve Seat leakage shall be determined by one of the following methods:
21	a. Measuring leakage through a downstream telltale connection while maintaining pressure on one side of the valve, or
	b. Maintaining feed rate required to maintain test pressure in the test volume or between two seats of a gate valve, provided the total apparent leakage rate is charged to the valve or valve combination, or
	c. Determining leakage by measuring pressure decay in the test volume.
4.	Test Medium - shall be specified in the procedure.
<b>5.</b>	Analysis of Leakage Rates – Leakage rate measurements shall be compared with the permissible leakage rates specified by the Owner (usually identified in the implementing test procedure). The permissible leakage rate specified by the Owner should be based on specific design or operational criteria limits. When this criteria cannot be determined, then the permissible leak rate may be calculated as follows:
in the second	a. For water, 0.5D gal/min or 5 gal/min, whichever is less, at functional differential pressure, where D equals nominal valve size.
	b. For air, 7.5D standard ft <sup>3</sup> /day, at functional differential pressure.
<b>6.</b>	Corrective Action – Valves or valve combinations with leakage rates exceeding the values specified by the Owner in paragraph 8.3.27.5 shall be declared inoperable and either repaired or replaced. A retest demonstrating acceptable operation shall be performed following any required corrective action before the valve is returned to service.

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8.3.28	Tests for Category C Safety and Relief Valves
:	Tests for Category C Safety and Relief Valves are conducted in accordance with Appendix I of the OM Code.
	1. Pressurizer safety valves are tested in accordance with EST-027.
	2. Main Steam Safety Valves are tested in accordance with EST-028.
	3. All other safety and relief valves required to be tested pursuant to ASME OM Code requirements are tested in accordance with EST-112.
	4. Containment Spray Additive Tank Vacuum Breakers are tested in accordance with EST-068.
و مود د	5. The CCW Surge Tank Vacuum Breaker is tested in accordance with EST- 130.
	6. EST-111 'Safety, Pressure Relief & Vacuum Breaker Valve Test Selection and Verification' is utilized to periodically verify that test frequencies applicable to safety valves, relief valves and vacuum breakers conform to the frequency requirements specified in Appendix I of the OM Code.
8.3.29	
8.3.29	Exercise Tests for Category C Check Valves
8.3.30	Exercising Test Frequency
ζ', γ	Check valves shall be exercised nominally every three months except as provided in paragraphs 8.3.31 through 8.3.36.
8.3.31	Exercising Requirements
	Valves shall be exercised as follows:
	<ol> <li>During plant operation, valves shall be exercised or examined in a manner that verifies obturator travel by using the methods in paragraph 8.3.34.</li> </ol>
i e se	interval
· · · · · · · · · · · · · · · · · · ·	3. If exercising is not practicable during plant operation, it shall be performed during cold shutdowns.
	4. If exercising is not practicable during plant operation and cold shutdown, it shall be performed during refueling outages.
	5. Valves exercised at shutdowns shall be exercised during each shutdown, except as specified in "6" below. Such exercise is not required if the interval since the previous exercise is less than three months.
	6. Valve exercising shall commence within 48 hours of achieving cold shutdown and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours if all the valves required to be tested during cold shutdown will

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	be tested before plant startup. However it is not the intent to keep the plant in cold shutdown to complete cold shutdown testing.
	7. All valve testing required to be performed during refueling outages shall be completed before returning the plant to operation.
8.3.32	Exercise Tests for Manual Valves
3) - 11 	Manual valves shall be full stroke exercised at least once every two years, except where adverse conditions may require the valve to be tested more frequently to assure operational readiness. Any increased testing frequency shall be specified. The valve shall exhibit the required change of obturator position.
8.3.33	Valves in Regular Use
· · · · · · · · · · · · · · · · · · ·	Check valves that operate in the course of plant operation, at a frequency that would satisfy the exercising requirements, need not be additionally exercised. The observations otherwise required for testing are required to be made, analyzed, and recorded in the plant records at intervals not greater than three months.
8.3.34	Valve Obturator Movement
	1. The necessary valve obturator movement shall be demonstrated by performing both an open and a closed test.
s 1. S. S. S. 1. S. 1. S. 1. S.	a. Check valves that have a safety function in both the open and closed directions shall be exercised by initiating flow and observing that the obturator traveled to either the full open position, or to the position required to perform its intended function. Verification that on cessation of flow the obturator has traveled to its seat shall also be demonstrated.
	c. Check valves that have a safety function in only the closed direction shall be exercised by initiating flow and observing that the obturator has traveled to at least the partially open position, and verify that on cessation or reverse flow, the obturator has traveled to its seat.
. •	3. If the test methods described in paragraph 8.3.34.1 are impractical for certain check valves, or if sufficient flow cannot be achieved or verified, a sample disassembly examination program shall be used to verify valve obturator movement.
	a. The sample disassembly program shall group valves of similar design, application, and service condition and require a periodic

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			of one valve from each group. The details and bases ling program shall be documented.
	÷	consider val	check valves shall be technically justified and shall /e manufacturer, design, service, size, materials of and orientation
		obturator sha verifying obt	sassembly process, the full-stroke motion of the all be verified. Valves that have been disturbed prior to urator movement shall be examined to determine if a sts that could prevent full opening or reclosing of the
		examined at	valve from each group shall be disassembled and each refueling outage. All valves in each group shall bled and inspected once every eight years.
	1 (A.	e. Before return examination	to service, valves that were disassembled for or that received maintenance that could affect their shall be exercised if practicable with flow in with 8.3.31.
			valves shall also be tested for other requirements such crate testing.
	· ' •:.	disass	les of check valves that can be impacted by embly include spring loaded check valves or check with the obturator supported by the bonnet.
	8.3.35	Check Valve Condition	Aonitoring
		8.3.30 through 8.3.34, a The purpose of this prog optimize testing, examin to maintain the continue	esting or examination requirements of paragraphs Condition Monitoring program may be established. ram is both to improve valve performance and to ation, and preventative maintenance activities in order d acceptable performance of a select group of check
		1. The program may	be implemented on a valve or group of similar valves.
· · ·		conditions impose	plemented in accordance with TMM-008, subject to any d by the NRC in the Federal Register.
		a. Each valve r (bi-directiona	
		b. The maximu	m test or examination interval for a valve or group of sed on the following table. All valves in the group must

be tested or examined within the maximum interval to be

be tested or examined within the maximum m

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Group Size	Maximum Interval (years)	
<u>&gt;</u> 4	16	
3	12	
2	12	
1	10	

and a sufficient 1.1 TMM-008 meets the requirements of Appendix II of the OM Code and 3. lists the tests, examinations, frequencies, recommended post maintenance tests (following disassembly to meet the Appendix II program) and groupings that are applicable to a particular valve included in the condition monitoring program.

4. If the condition-monitoring program for a valve or group of valves is discontinued, then the requirements of paragraphs 8.3.30 through 8.3.34 must be applied.

5. Valves subject to the requirements of a condition monitoring program are identified by the reference to App. II in the Test Frequency column.

Valves in Systems Out of Service Control of the March and 8.3.36

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For valves in a system declared inoperable or not required to be operable, the exercising test schedule need not be followed. The valve shall be exercised ۰ 's and the schedule followed within three months of placing the system in an operable status. × 101.

8.3.37 Series Valve Pairs

If two check valves are in series configuration without provisions to verify 5 J 496 individual reverse flow closure, and the plant safety evaluation assumes closure of either valve (not both), the valve pair may be operationally tested closed as a unit. If the plant safety evaluation assumes that a specific valve or both valves of the pair close to perform the safety function, the required valve(s) shall be tested to demonstrate individual valve closure.

8.3.38 Corrective Action fcr. Check Valve Exercise Tests

1. If a check valve fails to exhibit the required change of obturator position, it shall be declared inoperable. A retest showing acceptable performance Mary Press shall be run following any required corrective action before the valve is returned to service.

- 2. Check valves in a sample disassembly program that are not capable of being full stroked exercised, or have failed or have unacceptable valve internals, shall have the cause of the failure analyzed and the condition corrected. Other valves in the sample group that may also be affected shall be examined or tested during the same refueling outage.
- 3. Series valves tested as a unit in accordance with paragraph 8.3.37 and fail to prevent reverse flow shall be declared inoperable, and both valves shall be either repaired or replaced.

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8.3.39	Tests for Category D Explosively Actuated Valves
	Not applicable to RNP.

- 8.3.40 Tests for Category D Rupture Disks Not applicable to RNP.
- 8.3.41 Tests for Dynamic Restraints (Snubbers)

Requirements, selection and methods for the testing of snubbers are defined in accordance with TMM-038, Inservice Examination Program and TMM-006, - Shock Suppressor (Snubber) Examination and Testing Program. , j.

- is en la secondada de Mañor de Antonio Alabo DRDS: 151 de la constante de Mañor de M RECORDS AND A LENSE M. Martin Martin Constraints and Accession (2014)
   M. Martin Martin Constraints and Accession (2014) 9.0 ·
- 9.1 Records generated as a result of this procedure (e.g., IST Evaluations) shall be reviewed, approved and forwarded to the QA Records vault for retention.
- 9.2 Pumps 143 1 1 1
  - an 19.2.1 set Pump Records and the set of the set of the set of the
    - 1.111.111 Records shall be maintained that include the following for each pump:
      - Manufacturer and manufacturer's model and serial or other identification
    - number; a state of the state of . .
      - A copy or summary of the manufacturer's acceptance test, report, if available; and
        - A copy of the pump manufacturer's operating limits.
    - 9.2.2 Inservice Test Plans

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- Record of test plans and procedures shall be maintained that include the : 1, following: A state of the state
  - Identification of pumps subject to testing; •
    - Category of each pump;
      - Hydraulic circuit to be used;
      - •
      - Location and type of measurement for the required test parameters; .
- and an each Prinkeference Values; M/Privata (BPR) and the second of the
  - Method of determining test parameter values that are not directly measured 1000 by instrumentation.
    - تاريخ والأرار الحفالي

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<sup>1</sup> Construction of the state of the sta ÷. 

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#### 9.2.3 **Record of Test**

Records of each test shall be maintained that include the following:

- Pump identification; •
- Date of test; .
- Reason for test (e.g., scheduled, post maintenance test, establishing new reference values);

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- Values of measured parameters; •
- Identification of instruments used: •
- ... Comparisons with allowable ranges and analysis of deviations;
- Requirement for corrective action; .
- Evaluation and justification for changes of reference values; and •†
- Signature of the person or persons responsible for conducting and • analyzing the test.

ATTACHMENT 10.5 provides a list of pumps within the scope of the IST Program and their associated test procedures.

9.3 Valves 1

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#### 9.3.1 Valve Records

Records shall be maintained that include the following information:

- The manufacture and manufacturers model and serial or other unique identification number;
  - A copy or summary of the manufacturers acceptance test report if. available: ς. · .
- Preservice test results;
- Limiting values of full-stroke time. ·· · ·
- 9.3.2 Inservice Test Plans and so were a 11 -
  - Record of test plans and procedures shall be maintained that include the following:
    - Identification of valves subject to testing;
    - Category of each valve; septimization of the provide provide provide the provide provi
    - Tests to be performed: .
    - Justification for deferral of stroke (exercising) testing; .
    - Details and bases of the check valve sample disassembly examination program, such as grouping characteristics, frequency and justification for not performing an exercise test to at least a partially open position after reassembly or periodic exercising;
    - Basis for testing series check valve pairs.

ATTACHMENTs 10.2, 10.3 and 10.4 provide the test deferral justifications. ATTACHMENT 10.6 provides a list of the valves in the scope of the IST Program.

#### 9.3.3 Record of Test

Records of each test shall be maintained that include the following:

- Valve identification;
- Date of test;
- Reason for test (e.g., scheduled, post maintenance test, establishing new reference values);

. .

- Values of measured parameters;
- Identification of instruments used;
- Comparison with allowable ranges and analysis of deviations;
- Requirement for corrective action;
- Signature of the person or persons responsible for conducting and analyzing the test.

#### 9.4 Records of Corrective Action

Records of corrective action shall be maintained and shall include a summary of the correction made, the subsequent inservice tests, confirmation of operational adequacy, and the signature of the individual responsible for the corrective action and the individual responsible for verification.

#### 9.5 Preconditioning (NRC, Information Notice 97-16)

NRC IN 97-16 has been evaluated for applicability and corrective measures have been taken to address preconditioning concerns involving IST activities. Preconditioning may be defined as the alteration, variation, manipulation or adjustment of the physical condition of an SSC before Technical Specification surveillance or ASME Code testing. In some cases, the safety benefit of a preconditioning activity may outweigh the benefits of testing in the as-found condition. In the event that this condition arises, the activity should be evaluated to determine whether it constitutes acceptable or unacceptable preconditioning. The overall effect of the activity and a justification documenting the continued confidence in the capability to assess the operational readiness of the component must be considered in order to determine whether the activity constitutes acceptable pre-conditioning.

NRC Inspection Manual, Part 9900 should be consulted for additional guidance to assist in determining whether a certain activity should be considered to be preconditioning. It may also be used to provide further guidance as to the acceptability or unacceptability of the preconditioning event. Unacceptable preconditioning is to be avoided. The following are examples of acceptable and unacceptable preconditioning.

المركز الكان الكوني المحافظ من محكمة من أن والمحترف المركز المحكم المحترف المركز المحترف المحترف المحترف المحت المركز المحترف المحترف المحترف المحترف المركز المركز المحترف المحترف المحترف المحترف المحترف المحترف المحترف الم المحترف المحتر Acceptable preconditioning:

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- Periodic venting of pumps, which is not routinely scheduled directly prior to testing, but may be performed occasionally prior to testing.
  - Pump venting prior to testing provided that the venting operation has proper controls with a technical evaluation to establish that the amount of gas vented would not adversely affect pump operation.
- Occasional lubrication of a valve stem prior to testing a valve, where stem lubrication is not typically performed prior to testing.
- Unavoidable movement attributable to the setup and connection of test equipment.
- Improper timing of a power operated valve where the valve must be immediately retested in order to obtain a valid stroke time measurement.

Adequate assurance must be available to support the conclusion that the valve stroke time would have been below the limiting value. The deviation shall be documented in the record of test.

Unacceptable preconditioning:

- Routine lubrication of a valve stem prior to testing the valve.
- Operation of a pump or valve shortly before a test, if such operation could be avoided through plant procedures with personnel and plant safety maintained.
  - Venting a pump immediately prior to testing without proper controls and scheduling.
  - An activity performed to ensure that the pump or valve will meet its acceptance criteria.
- An activity performed to mask the as-found condition of the pump or valve.
- ADM-NGGC-0115, *Preconditioning of Structures, Systems and Components* provides more detail on this subject.
- 9.6 Use of Non-conservative Acceptance Criteria (NRC information Notice 97-090)

Information regarding the minimum performance requirements for each pump tested to ASME Code requirements may be found in calculation RNP-M/MECH-1802. All surveillance test acceptance criteria are reviewed to ensure that minimum performance requirements are met.

Design engineering provides the minimum allowable pump performance. The minimum performance point shall include maximum instrument error (not uncertainty) associated with the flow rate instrument, pressure (differential pressure) instruments and speed instruments, if the pump is a variable speed pump. The performance shall be additionally compensated to account for the minimum allowable EDG frequency specified in the Plant TS. The resultant criteria shall be included in the appropriate pump performance tests used to confirm design basis requirements (reference OE 31798, Misunderstanding of Power Up-Rate Margin Application).

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9.7 Program Notebook

A program notebook will be developed and maintained by IST personnel consistent with the guidelines established in EGR-NGGC-0008, *Engineering Programs*.

9.8 Background Information

A background document is maintained in the IST database. This data should be used for information only. The IST database is a tool intended to assist the user in understanding the rationale for testing or excluding certain pumps or valves from the IST program. The database shall not be used to verify design or licensing basis.

#### 9.9 Inservice Testing Evaluation

The EVAL EC process described in EGR-NGGC-0028, *Engineering Evaluation* should be used to document component conditions or program positions noted during inservice testing activities, or during routine plant operations. The EVAL EC process may be used to evaluate component performance, establish new reference values, establish corresponding acceptance criteria, or document a response to an ASME OM Code related inquiry provided the solution:

- Is within Bounding Technical Requirements defined in EGR-NGGC-0028,
- Is technically acceptable with respect to existing design inputs,
- Conforms to existing design bases, committed standards, and regulations,
  - Doe not adversely affect the design function, or adversely affect the method of performing or controlling a design function.
  - Does not introduce new failure modes, and
  - Does not change the Licensing Basis

The determination of acceptance limits is based on multiplication tables provided in the ASME OM Code, unless truncated by a design document. 'The derivation of acceptance limits involves simple arithmetic and is not considered to be a calculation. These new limits shall be peer checked by the system or responsible engineer.

Component performance evaluations shall follow all requirements of the Code; however, minimum fundamental elements must be addressed when completing the evaluation.

- Is the cause of the deviation known and the impact understood?
- Are the proposed acceptance limits within design basis performance requirements? Generally, pump performance must achieve a minimum hydraulic point and power operated valves must stroke below a specified limiting value.
- For changes to pump vibration reference values, does the Vibration Engineer
- Established processes shall be used to ensure that the impacted procedure has been identified and is placed on hold, if changes to acceptance limits are required.

Caution should be exercised if an evaluation is used to recommend pump operability when performance is in the alert or required action range. OPS-NGGC-1305, *Operability Determinations* should be consulted to determine if the process for a degraded or non-conforming condition should be followed. In addition:

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- For pump performance in the alert or required action range, and continued performance at this range is supported by an analysis, a pump and system level evaluation of operational readiness must be performed by the applicable System Engineer.

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10.0	ATTACHMENTS
10.1	Systems and P&ID's
10.2	Relief Requests
10.3	Cold Shutdown Justifications
10.4	Refueling Shutdown Justifications
10.5	Pump Table
10.6	Valve Table
10.7	Excluded Valve Table
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# ATTACHMENT 10.1 Page 1 of 2 Systems and P&ID's

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System	P&ID (Sheet)
Primary Sampling System	5379-353 (1)
Component Cooling Water System	5379-376 (1)
Component Cooling Water System	5379-376 (2)
Component Cooling Water System	5379-376 (3)
Component Cooling Water System	5379-376 (4)
Chemical Volume and Control System	5379-685 (1)
Chemical Volume and Control System	5379-685 (2)
Chemical Volume and Control System	5379-685 (3)
Chemical Volume and Control System	5379-686 (1)
Liquid Waste Disposal System	5379-920 (3)
Gaseous Waste Disposal System	5379-921 (2)
Safety Injection System	5379-1082 (1)
Safety Injection System	5379-1082 (2)
Safety Injection System	5379-1082 (3)
Safety Injection System	5379-1082 (4)
Safety Injection System	5379-1082 (5)
Residual Heat Removal System	5379-1484 (1)
Reactor Coolant System	5379-1971 (1)
Reactor Coolant System	5379-1971 (2)
Main and Extraction Steam	G-190196 (1)
Feedwater, Condensate and Air Evacuation System	G-190197 (1)
Feedwater, Condensate and Air Evacuation System	G-190197 (4)
Service and Cooling Water System	G-190199 (1)
Service and Cooling Water System	G-190199 (2)
Service and Cooling Water System	G-190199 (4)
Service and Cooling Water System	G-190199 (5)
Service and Cooling Water System	G-190199 (6)
Service and Cooling Water System	G-190199 (7)
Service and Cooling Water System	G-190199 (9)
Service and Cooling Water System	G-190199 (10)

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# ATTACHMENT 10.1 Page 2 of 2 Systems and P&ID's

System Et al. 1	P&ID (Sheet)
Instrument and Station Air System	G-190200 (2)
Instrument and Station Air System	G-190200 (3)
Instrument, and Station Air System	G-190200 (5)
Instrument and Station Air System	G-190200 (7)
Instrument and Station Air System	G-190200 (9)
Primary and Makeup Water System	G-190202 (3)
Emergency Diesel Generator System	G-190204A (2)
Emergency Diesel Generator System	G-190204A (3)
Fuel Oil System	G-190204D (1)
Fuel Oil System	G-190204D (2)
Steam Generator Blowdown and Wet Lay-up System,	G-190234 (1)
Penetration Pressurization System	G-190261 (2)
Isolation Valve Seal Water System	G-190262 (1)
HVAC-Turbine, Fuel, Auxiliary and Reactor Building Systems	G-190304 (1)
Containment Vapor and Pressure Sampling System	HBR2-6490 (1)
Post Accident Containment Venting System	HBR2-6933 (1)
Fire Protection System	HBR2-8255 (2)

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#### ATTACHMENT 10.2 Page 1 of 8 **RELIEF REQUESTS** IST-RR-1

**Basis for request:** Pursuant to 10 CFR 50.55a(a)(3)(i), this alternative provides an acceptable level of quality and safety.

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## ASME Code Components Affected

Component Identification	Group	Туре
BA-XFER-PMP-A, BA-XFER-PMP-B: Boric Acid Transfer Pumps	Α	C-H
CCW-PMP-A, CCW-PMP-B, CCW-PMP-C: Component Cooling Water Pumps	Α	C-H
CHG-PMP-A, CHG-PMP-B, CHG-PMP-C: Chemical Volume Control System Charging Pumps	Α	PD-R
SWBP-A, SWBP-B: Service Water Booster Pumps	Α	C-H
SW-PMP-A, SW-PMP-B, SW-PMP-C, SW-PMP-D: Service Water Pumps	А	VLS

# Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) . Code, 2004 Edition through 2006 Addenda.

## Applicable Code Requirement

and the second second ISTB-2000, "Supplemental Definitions," defines uniform criteria for designating Group A and the second and Group B pumps.

ISTB-3000, "General Testing Requirements," and Table ISTB 3000-1, "Inservice Test Parameters," define and compare parameters (e.g., pressure flow rate, vibration) measured during Group A, Group B, and Comprehensive pump tests.

ISTB-3400 "Frequency of Inservice Tests." states that an inservice test shall be run on each pump specified in Table ISTB 3400-1. This table requires a Group A or Group B test to be performed quarterly and a Comprehensive test to be performed biennially.

Table ISTB-3510-1, "Required Instrument Accuracy," defines the required instrument accuracy for Group A. Group B and Comprehensive pump tests.

Table ISTB-5121-1, "Centrifugal Pump Test Acceptance Criteria", defines the required acceptance criteria for centrifugal pumps, when a Comprehensive test is performed in lieu of a Group A or Group B pump test.

Table ISTB-5221-1. "Vertical Line Shaft Centrifugal Pump Test Acceptance Criteria", defines the required acceptance criteria for vertical line shaft centrifugal pumps, when a Comprehensive test is performed in lieu of a Group A or Group B pump test.

Table ISTB-5321-2, "Reciprocating Positive Displacement Pump Test Acceptance Criteria", defines the required acceptance criteria for reciprocating positive displacement pumps, when a Comprehensive test is performed in lieu of a Group A or Group B pump test.

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#### ATTACHMENT 10.2 Page 2 of 8 RELIEF REQUESTS IST-RR-1

#### Specific Relief Requested

Pursuant to 10 CFR 50.55a(a)(3); relief is requested from the requirements of the ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTB, Paragraphs ISTB-5123, 5223 & 5323 "Comprehensive Test Procedure." The basis for this request is that the proposed alternative will provide an acceptable level of quality and safety. Table ISTB-3400-1, "Inservice Test Frequency," specifies that a biennial Comprehensive Pump Test (CPT) be performed on Group A and B pumps. Paragraph ISTB-5123 describes requirements necessary to properly implement a CPT for centrifugal pumps. Paragraph ISTB-5223 describes requirements necessary to properly implement a CPT for vertical line shaft centrifugal pumps and ISTB-5323 describes requirements necessary to properly implement a CPT for positive displacement pumps. Performance of the biennial CPT on the pumps identified above is unnecessary because performance of a quarterly Group A pump test at the comprehensive test flow rate is equally sufficient when assessing operational readiness. Quarterly testing at design flow rates in accordance with the Group A test requirements provides better assessment of overall pump capability when compared to an infrequent CPT supplemented with a Group A test at reduced flow rates and supports timely detection of degrading pump performance. į÷ Charles Bargers Bring States

The CPT utilizes a reduced upper hydraulic limit of 1.03 of the reference value. This value is overly conservative and does not take into account the aggregate impact of nominally expected test deviations and allowances for instrument accuracy. The end result is a potential overall reduction to safety system availability, a potential to increase unwarranted maintenance, and may create conflicts between surveillance tests when a Group A test and CPT are performed at identical conditions.

HBRSEP, Unit No. 2, proposes to conduct quarterly Group A testing at the CPT designated flow rate using pressure instrumentation that is accurate to 0.5 percent. In addition, the upper hydraulic performance limit will be reduced from 1.10 times the test parameter (flow, pressure, differential pressure) to a multiple of 1.06 times the test parameter.

#### **Basis for Requesting Relief**

The ASME OM ISTB committee has approved Code Case OMN-18, "Alternative Testing Requirements for Pumps Tested Quarterly within  $\pm$  20% of Design Flow." This code case has not yet been approved for use in RG 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," June 2003. HBRSEP, Unit No. 2, is proposing to use this alternative; however, by conservatively reducing the upper hydraulic acceptance limit from 10% above the reference value to 6% above this value.

The use of more accurate pressure instrumentation during the performance of quarterly pump tests provides more precise and consistent trending of pump performance.

Due to the more stringent requirements proposed by this alternative, there is no added value in performing the biennial comprehensive pump test.

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#### **ATTACHMENT 10.2** Page 3 of 8 **RELIEF REQUESTS** IST-RR-1

#### **Proposed Alternative**

HBRSEP, Unit No. 2, proposes that in lieu of the requirements of Table ISTB- 3400-1, Group A tests will be performed quarterly within ± 20 percent of the pump design flow rate, with instrumentation meeting the instrument accuracy requirements of Table ISTB-3510-1 for the biennial Comprehensive Test, and the Comprehensive Test will not be required. 1.3

Specifically.

- a. Pumps tested quarterly using this alternative must be tested within ± 20 percent of pump design flow rate, as is required for the biennial Comprehensive Test in ISTBan an an Albert an ann an Anna Anna An Anna Anna Anna Anna Anna Anna Anna Anna Anna An 3300(e)(1).
- b. The proposed alternative requires the accuracy of instruments used during quarterly Group A tests to meet the more accurate pressure and differential pressure requirements listed for the Comprehensive Test in Table ISTB-3510-1 (an accuracy improvement from ± 2 percent to ± 0.5 percent). Consistent use of more accurate instruments during each cuarterly test improves pump performance trending and evaluation.

Based on the testing strategy proposed, this alternative provides an acceptable level of quality and safety for monitoring the pumps and ensures they are capable of performing their safety function. stand and the second Implementation Schedule

This relief will be implemented during the HBRSEP, Unit No. 2, Fifth Ten-Year Inservice Testing Inspection for pumps required by ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTB. and the second sec

## Precedents

The NRC granted Perry Nuclear Power Plant, Unit No. 1's Relief Request PR-3 in a safety evaluation dated October 8, 2009 (TAC NO. ME0820). 91 . A

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#### ATTACHMENT 10.2 Page 4 of 8 **RELIEF REQUESTS IST-RR-2**

**Basis for request:** Pursuant to 10 CFR 50.55a(a)(3)(i), this alternative provides an acceptable level of quality and safety.

#### . <u>.</u>] - -----ASME Code Components Affected

Group	Туре
A	С-Н
В	C-H
··· A' :	VLS .

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# Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, 2004 Edition through 2006 Addenda.

# Applicable Code Requirement

Table ISTB-3510-1, "Required Instrument Accuracy", requires flow-rate instrument accuracy to be ±2%. The set of th

Pursuant to 10 CFR 50.55a(a)(3), relief is requested from the requirements of the . . . ' ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTB, Table ISTB-3510-1, relief is requested from the ±2% instrument accuracy requirement over the calibrated range for ultrasonic flow measuring equipment that is used for pump testing in the Inservice Testing (IST) Program in the unlikely event that calibrated · i . instrumentation is rendered inoperable.

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## **Basis for Requesting Relief**

Original plant design did not include flow rate measurement devices that met subsequent Code requirements. Since then, instrumentation that meets the Code requirements has been installed. However, these specific applications utilize devices. that may be difficult to replace with certified instruments within the allotted limiting condition for operation (LCO). In the unlikely event that a flow rate device failed to operate properly and calibrated instrument (normally maintained for service water) is not available, an ultrasonic flow measurement device can be installed in accordance with specific instructions to ensure proper operation and provide accurate measurement of flow rate. Proper installation and operation of these devices yield an overall accuracy equivalent to, or better than the Code required accuracy.

The NRC has previously granted relief to use ultrasonic flow instruments in the third and fourth IST program intervals. NRC Safety Evaluation, transmitted in NRC letter dated September 16, 1992, accepted the use of ultrasonic flow instruments that have an intrinsic accuracy of ±3% on a temporary basis. Final approval was dependent on the establishment of procedures and controls that ensure measurements are sufficiently repeatable to allow detection of pump degradation. Also required, was a determination of the in-situ accuracy and repeatability in each application.

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#### **ATTACHMENT 10.2** Page 5 of 8 **RELIEF REQUESTS** IST-RR-2

Subsequently CP&L transmitted, in a letter dated December 6, 1993, confirmation that ultrasonic flow instrumentation data taken during one cycle indicates the equipment has sufficient accuracy and repeatability to permit detection of hydraulic degradation, and supports the evaluation of results using Code allowable ranges. The NRC accepted this additional information in a letter dated, July 15, 1994. This relief request was resubmitted during the Fourth Interval Update and accepted by the NRC via letter dated June 27, 2002. 

Previous experience and testing verify that non-calibrated ultrasonic flow measurements are highly accurate and consistent with published vendor literature; which states that an intrinsic accuracy of 1% to 2% of actual reading can be expected. The instruments are mounted externally, which avoids problems inherently associated with internally installed measuring devices and can be installed promptly.

Calibration of these instruments; however, cannot be performed onsite. The vendor must arrange for the use of a special test facility. Experience has shown that the expected time period associated with obtaining an emergent instrument calibration is about two to six weeks and is largely dependent on events beyond the control of the site. All ultrasonic flow instruments are calibrated in accordance with Table ISTB 3510-1 and are verified and documented to be operating properly prior to the performance of the scheduled test. The Limiting Condition for Operation (LCO) would not be sufficient to facilitate diagnostics, instrument transport, repairs, calibration and re-installation and certification upon discovery that calibrated instruments are found to be deficient. Based on previous experience, unsatisfactory pump performance can be determined through the use of non-calibrated ultrasonic flow rate instruments when these instruments are 1 properly installed and verified in accordance with site specific procedures. An acceptable level of quality and safety is maintained and the use of this alternative would be prudent in the unlikely event of this emergent condition.

# Proposed Alternative in the trade at the accuracy of the second sec

Non-calibrated ultrasonic flow measuring instruments may be utilized to satisfy the requirements of the OM Code for pump flow rate determinations in the unlikely event that calibrated flow measuring instruments are not available. This relief is not intended to be used repeatedly as a testing convenience. Efforts must be made to obtain an acceptable calibrated instrument for use during the next pump test. Documentation of the measures taken must be available for an onsite NRC review.

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This relief will be implemented during the HBRSEP, Unit No. 2, Fifth Ten-Year Inservice Testing Inspection for pumps required by ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTB.

# Precedents and a state of the s

The NRC granted relief to HBRSEP, Unit No. 2 for the Third Ten Year Interval via letter dated, July 15, 1994 and the Fourth Ten Year Interval via letter dated June 27, 2002. the second many second at the part of the second state of the second state of the second state of the second st

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#### ATTACHMENT 10.2 Page 6 of 8 RELIEF REQUESTS IST-RR-3

**Basis for request:** Pursuant to 10 CFR 50.55a(a)(3)(i), this alternative provides an acceptable level of quality and safety.

## **ASME Code Components Affected**

Component Identification	Category
IVSW-71, IVSW-72, IVSW-74 thru IVSW-97, IVSW 100A, IVSW- 100B, and IVSW-100C	C .

## Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, 2004 Edition through 2006 Addenda.

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## Applicable Code Requirement

ISTC-1300, "Valve Categories" defines uniform criteria for assigning valve categories. Category C valves are defined as valves that are self actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves) for fulfillment of the required function(s).

ISTC-3510, "Exercising Test Frequency" requires Active Category A, Category B, and Category C check valves be exercised nominally every three months.

ISTC-3522(a), "Category C Check Valves" requires that Category C check valves be exercised or examined in a manner that verifies obturator travel by using methods in ISTC-5221. ISTC-3522(a) requires each check valve exercise test shall include open and closed tests.

ISTC-3530, "Valve Obturator Movement" states that the necessary valve obturator movement shall be determined by exercising the valve while observing an appropriate indicator, such as indicating lights that signal the required changes of obturator position, or by observing other evidence, such as changes in system pressure, flow rate, level or temperature, that reflects change of obturator position.

ISTC-5221(a), "Valve Obturator Movement" specifies that the required obturator movement during exercise testing be demonstrated by performing both an open and a close test.

ISTC-5221(a)(2), "Valve Obturator Movement" specifies that check valves that have a safety function in only the open direction shall be exercised by initiating flow and observing the obturator has traveled either to the open position or to the position, required to perform its intended function(s) and verify closure.

ISTC-5221(c)(2), "Valve Obturator Movement" specifies that full stroke motion of the obturator shall be verified.

**Basis for request:** Pursuant to 10 CFR 50.55a(a)(3)(i), this alternative provides an acceptable level of quality and safety.

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## ATTACHMENT 10.2 Page 7 of 8 RELIEF REQUESTS IST-RR-3

## Specific Relief Requested

Pursuant to 10 CFR 50.55a(a)(3), relief is requested from the requirements of the ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTC 3522(a), ISTC-3530, ISTC-5221(a), ISTC-5221(a)(2), and ISTC-5221(c)(2) that require Category C check valve exercise tests include both open and closed tests.

Specifically, relief is requested from the requirements of ISTC to verify closure. The check valves will be forward flow tested and closure verification will not be performed.

## **Basis for Requesting Relief**

These check valves are 3/8 inch, spring-loaded ball type check valves in the Isolation Valve Seal Water System (IVSW) system have no safety function in the closed direction and are required to open in order to provide seal water to selected containment penetrations during a Design Basis Accident (DBA). The IVSW system operates to limit the release of fission products should leakage occur; however, no credit is actually taken for its operation when calculating off site accident dose. The system has been formally accepted as a qualified seal water system pursuant to 10 CFR 50 Appendix J requirements. IVSW is maintained at a minimum pressure of 1.1 times the peak accident pressure related to the design basis loss of coolant accident. As such, the design and qualification of the system eliminates the need for these valves to close during a DBA in the unlikely event that closure is required.

Disassembly to verify obturator closure or modifications to facilitate inservice testing for closure are impractical based on the large number of valves requiring verification and the insignificance associated with their failure to close. Disassembly may also lead to maintenance-induced errors associated with re-assembly. The small size and construction of these valves prohibits the ability to perform partial disassembly / inspection in a manner representative of its inservice condition (e.g., valve removal and decontamination activities could alter disc position).

IVSW is a standby system that is operated during refueling outages to facilitate testing. Based on infrequent use, the valve obturator exhibits minimal wear. Bi-directional check valve testing was adopted to counter the effects of a faulty test strategy associated with the inability to detect a detached valve disc. Specifically, a satisfactory forward flow check valve test could be completed when the valve disc is actually detached and laying in the bottom of the valve body. Based on the design and materials of construction associated with these check valves, disc failure with subsequent migration into associated systems is not likely. The size of the disc exceeds the inner diameter of the valve outlet. The nominal diameter of the ball is 5/16 of an inch, while the outlet port diameter is approximately one half that of the ball based on valve drawings.

It is likely that failure of the valve would be detected by the forward flow test method performed at refueling conditions, or by other installed indicators. The system is equipped with pressure and water level instruments that can provide indication if a check valve were to remain open while exposed to pressures that exceed IVSW system pressure.

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#### ATTACHMENT 1C.2 Page 8 of 8 RELIEF REQUESTS IST-RR-3

The location of these valves would make testing, inspection or examination for closure inconsistent with ALARA principles.

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Based on the design and qualification of this system, compliance with the Code requirement would result in an unusual hardship without a compensating increase in the level of quality and safety. The proposed alternative provides an acceptable level of quality and safety.

#### **Proposed Alternative**

The 3/8-inch, spring-loaded ball type check valves installed in the IVSW system will be tested to the open position at refueling intervals. Closure verification will not be performed.

#### **Implementation Schedule**

This relief will be implemented during the HBRSEP, Unit No. 2, Fifth Ten-Year Inservice Testing Inspection for pumps required by ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTC. <u>Precedents</u> The NRC granted relief to HBRSEP, Unit No. 2 for the Fourth Ten Year Interval via letter dated June 27, 2002.

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#### ATTACHMENT 10.3 Page 1 of 26 COLD SHUTDOWN JUSTIFICATIONS CC-VCS-1

 Valve ID Description
 CC-716A COOLING WATER INLET VALVE 'RCP CCW SUPPLY HEADER ISOLATION VALVE
 CC-716B COOLING WATER INLET VALVE 'RCP CCW SUPPLY HEADER ISOLATION VALVE

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## Function

Component Cooling Water supply to the Reactor Coolant Pumps

#### **Deferred Testing**

Quarterly stroke time and full stroke exercise

## Cold Shutdown Test Justification

Exercising these valves during power operation would result in a temporary loss of Component Cooling Water flow to all three Reactor Coolant Pump thermal barriers and bearing coolers. This action increases the potential for RCP damage and failure of either valve in the closed position will require that the unit be shutdown and RCPs secured. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time and full stroke exercise

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#### **ATTACHMENT 10.3** Page 2 of 26 **COLD SHUTDOWN JUSTIFICATIONS** CC-VCS-2

#### Valve ID Description

#### CC-730 RCP BEARING COOLING WATER OUTLET ISOLATION

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#### Function

Allows flow through the Reactor Coolant Pump upper and lower bearing coolers

#### **Deferred Testing**

Quarterly stroke time and full stroke exercise

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#### **Cold Shutdown Test Justification**

Exercising this valve during power operation would result in a temporary loss of Component Cooling Water flow through all three Reactor Coolant Pump bearing coolers. This action increases the potential for RCP damage and valve failure in the closed position will require that the unit be shutdown and RCPs secured. The valve is not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test. C 2 .... 

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# Cold Shutdown Test

Stroke time and full stroke exercise

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#### ATTACHMENT 10.3 Page 3 of 26 COLD SHUTDOWN JUSTIFICATIONS CC-VCS-3

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#### Valve ID Description

CC-735 RCP BEARING COOLING WATER OUTLET ISOLATION 'CIV' FCV-626 RCP BEARING COOLING WATER OUTLET ISOLATION

#### Function

Allows flow through the Reactor Coolant Pump thermal barrier coolers

#### **Deferred Testing**

Quarterly stroke time and full stroke exercise

# Cold Shutdown Test Justification

Exercising these valves during power operation would result in a temporary loss of Component Cooling Water flow to all three Reactor Coolant Pump thermal barrier coolers. This action increases the potential for RCP damage and failure of either valve in the closed position will require that the unit be shutdown and RCPs secured. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

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#### **Cold Shutdown Test**

Stroke time and full stroke exercise

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#### ATTACHMENT 10.3 Page 4 of 26 COLD SHUTDOWN JUSTIFICATIONS CVC-VCS-1

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#### Valve ID Description

CVC-204A CVC LETDOWN LINE CVC-204B CVC LETDOWN LINE

#### Function

CVCS Letdown isolation valves

#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

# Cold Shutdown Test Justification

Exercising these valves during power operation would isolate CVCS letdown causing pressurizer level to increase, charging flow to decrease and interrupt letdown flow to the regenerative heat exchanger. This would result in abnormal operating conditions and may result in a plant transient or unit trip due to pressurizer level variations, letdown line restoration events and uncontrolled positive reactivity addition as a result of cold water injection. Failure of any valve in the test position would isolate letdown. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### Cold Shutdown Test

Stroke time, full stroke exercise and fail safe test

### **ATTACHMENT 10.3** Page 5 of 26 **COLD SHUTDOWN JUSTIFICATIONS** CVC-VCS-2

#### Valve ID Description

CVC-381 REACTOR COOLANT PUMP SEAL WATER RETURN ISOLATION

#### Function

Isolation valve for the cooling water return from the Reactor Coolant Pump seals

#### **Deferred Testing**

Quarterly stroke time and full stroke exercise

#### **Cold Shutdown Test Justification**

Exercising this valve during power operation would cause a loss of seal water return and probable damage to the Reactor Coolant Pump seals. This would require that the unit be shutdown and RCPs secured. Valve failure in the test position would result in a complete loss of the seal water return flow path and would result in a unit shutdown and potential RCP damage. The valve is not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test. B. D. B. Startin

**Cold Shutdown Test** Stroke time and full stroke exercise

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#### ATTACHMENT 10.3 Page 6 of 26 COLD SHUTDOWN JUSTIFICATIONS CVC-VCS-3

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#### Valve ID Description

CVC-310A CHARGING TO LOOP 'A' HOT LEG ISOLATION

#### Function

Air operated valve required to open and provide an alternate boration flow pathway to RCS loop "A" hot leg in the event that the normal boration pathway is not available

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#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

## Cold Shutdown Test Justification

Exercising this normally closed valve to the required test position will result in temporary changes in flow to the RCP seals and may induce additional thermal stresses. Due to the passive status related to this section of piping, opening CVC-310A may lead to uncontrolled reactivity additions when this volume of water is injected into the RCS. When restoring the plant to the desired configuration, CVC-310B must be reopened resulting in additional RCP seal perturbation before CVC-310A can be closed. Failure of the valve in the test position would require that the alternate pathway for boron injection remain in service and is not desired.

The valve is not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test

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### **ATTACHMENT 10.3** Page 7 of 26 **COLD SHUTDOWN JUSTIFICATIONS** CVC-VCS-4

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#### Valve ID Description

CVC-387 EXCESS LETDOWN LINE STOP

#### Function

To isolate flow through the excess letdown heat exchanger 

#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

#### **Cold Shutdown Test Justification**

Testing of this valve while in MODEs 1, 2, 3, or 4 will result in the temporary reduction to the RCS pressure barrier to systems outside of containment. Valve failure in the open position would result in a more permanent adverse condition, and is not desired. Testing in any condition other than MODE 5 or MODE 6 would create unnecessary/risks associated with testing a system that is only in service when normal letdown is not available. The valve is not designed to facilitate a part stroke exercise. Therefore, a ŝ, partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

# Cold Shutdown Test

Cold Shutdown Test Stroke time, full stroke exercise and fail safe test

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#### ATTACHMENT 10.3 Page 8 of 26 COLD SHUTDOWN JUSTIFICATIONS CVC-VCS-5

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#### Valve ID Description

CVC-200A CVC LETDOWN ORIFICE ISOLATION CVC LETDOWN ORIFICE ISOLATION CVC-200B CVC LETDOWN ORIFICE ISOLATION CVC-200C

#### Function

Close on demand to provide containment isolation for letdown line

#### Deferred Testing

Quarterly stroke time, full stroke exercise and fail safe test AN THE REPORT OF A DECEMBER OF A OF A DECEMBER OF A DECEMB

#### Cold Shutdown Test Justification

Operation of these valves during power operations will create temporary disturbances to the letdown flow control system, resulting in a potential challenge to letdown line relief valves, CVC-203A or CVC-203B, in the event of orifice isolation valve problems, switch mis-position events, or controller PCV-145 response errors. These events could lead to an inadvertent relief valve lift, and possible failure to re-close, resulting in an uncontrolled loss of primary coolant. In addition, cycling of these components could lead to temporary pressurizer level perturbations which may invalidate the transient analysis assumptions of UFSAR Chapter 15 as well as unnecessary changes to RCP seal injection flows. Although orifice isolation valve / relief valve discrepancies are not anticipated, the risk involved with exercising these valves is not warranted when performed with the sole purpose of satisfying IST requirements for normally scheduled on line surveillance activities. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test. Cold Shutdown Test

Stroke time, full stroke exercise and fail safe test

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## ATTACHMENT 10.3 Page 9 of 26 COLD SHUTDOWN JUSTIFICATIONS FW-VCS-1

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Valve ID	Description	
FCV-478	FEEDWATER REGULATING VALVE 'A'	
FCV-479	FEEDWATER REGULATING BYPASS VALVE 'A'	.1
FCV-488	FEEDWATER REGULATING VALVE 'B'	۰ ۴
FCV-489	FEEDWATER REGULATING BYPASS VALVE 'B'	
FCV-498	FEEDWATER REGULATING VALVE 'C'	
FCV-499	FEEDWATER REGULATING BYPASS VALVE 'C'	
FW-V2-6A	FEEDWATER HEADER SECTION VALVE 'A'	
FW-V2-6B	FEEDWATER HEADER SECTION VALVE 'B'	,
FW-V2-6C	FEEDWATER HEADER SECTION VALVE 'C'	

Function sector and the sector of the Steam Generators

# Deferred Testing

Quarterly stroke time, full stroke exercise and fail safe test (FCV-478 through FCV-499) Quarterly stroke time and full stroke exercise (FW-V2-6A, FW-V2-6B, FW-V2-6C)

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# Cold Shutdown Test Justification

Exercising the Feed water Regulating or Feed water Header Section valves in MODE 1 will cause a loss of feed water and subsequent steam generator level transient which may result in a unit trip. Failure of these valves in the test position will result in a plant trip. The Feed water Regulating Bypass valves are normally in the required safety position at power, except during plant start up or shut down. Operation of the Bypass valves will induce temporary changes to the feed water flow rate and increase the risk of a plant transient or unit trip. Operation of these valves to complete testing is not consistent with the bases of Technical Specifications as stated in ITS SR 3.7.3.1. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test (FCV-478 through FCV-499) Stroke time and full stroke exercise (FW-V2-6A, FW-V2-6B, FW-V2-6C)

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#### ATTACHMENT 10.3 Page 10 cf 26 COLD SHUTDOWN JUSTIFICATIONS FW-VCS-2

#### Valve ID Description

AFW-105 STEAM DRIVEN AUX FEEDWATER PUMP SUCTION VALVE FROM CONDENSATE STORAGE TANK

#### Function

Open to admit flow to the Steam Driven Auxiliary Feed water pump. Valve closure is required to maintain the vertical loop of piping water solid when pump operation is terminated.

#### **Deferred Testing**

Quarterly full stroke exercise open and closed

#### Cold Shutdown Test Justification

A full flow exercise test of this valve may result in unwarranted cyclic stresses to the Auxiliary Feed water nozzles, induce SG level transients, require a power reduction, and may lead to a plant transient or unit trip. Performance of a forward flow test at a less frequent interval (e.g., cold shutdowns or reduced power proceeding to or transiting from shutdown) will not impose similar concerns and may be performed in conjunction with the associated comprehensive pump test; which is performed bi-ennially. Reverse flow testing requires that normally locked open valve AFW-4 be unlocked and closed for the duration of this test rendering the SDAFW Pump inoperable. The closure test requires the installation of a test gage, removal of pipe plugs, installation and flush of hoses and cross connection of systems. The net effect of these actions results in unwarranted safety system unavailability for a component that is the only immediate available emergency source of auxiliary feed water to mitigate a station blackout event. Reverse flow testing of the valve when the pump is not required to be Operable at cold Shut down conditions is appropriate.

#### **Cold Shutdown Test**

Full stroke exercise open and closed

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#### ATTACHMENT 10.3 Page 11 of 26 COLD SHUTDOWN JUSTIFICATIONS FW-VCS-3

#### Valve ID Description

AFW-9A STEAM DRIVEN AUX FEEDWATER PUMP RECIRC CHECK

#### Function

Close to prevent flow from the MDAFW Pumps, the S/G Blow down / Wet Layup Pumps, and / or the condensate hot well Letdown into the discharge of the SDAFW Pump via the recirculation line, as required. Open to provide a recirculation flow path for the SDAFW pump.

#### **Deferred Testing**

Quarterly full stroke exercise open and closed

#### **Cold Shutdown Test Justification**

Due to limitations in design, quarterly reverse flow testing of this component requires the SDAFW Pump to be taken out of service, installation of test hoses, and manipulation of manual valves. Reverse flow testing cannot be performed on-line using installed plant equipment because the presence of two flow orifices reduce MDAFW pump discharge flow and pressure to values which are inadequate to properly seat the valve. NUREG-1482, Section 4.1.4 states, "...The NRC has determined that the need to install test equipment is adequate justification to defer backflow testing until a refueling outage..." Although NUREG-1482 allows deferral of the reverse flow test to a refueling outage frequency, this test may be performed at a cold shutdown frequency for the convenience of scheduling with other auxiliary feed water tests that are normally performed during cold shutdown. Note: Although forward flow testing is performed at a nominal 92 day frequency, bi-directional test requirements cannot be met until both positions have been verified within the same interval.

#### **Cold Shutdown Test**

Full stroke exercise open and closed

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### ATTACHMENT 10.3 Page 12 of 26 **COLD SHUTDOWN JUSTIFICATIONS** HVA-VCS-1

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#### Valve ID Description

V12-12 CONTAINMENT VACUUM RELIEF 

V12-13 CONTAINMENT VACUUM RELIEF

#### Function

Open to relieve vacuum inside containment.

#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

#### Cold Shutdown Test Justification

Exercising these valves during power operation would result in an unnecessary containment release since there is a positive pressure inside containment. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test. Rect and the

#### **Cold Shutdown Test**

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#### ATTACHMENT 10.3 Page 13 of 26 COLD SHUTDOWN JUSTIFICATIONS HVA-VCS-2

Valve ID	Description	\$	:	· .
V12-6	CONTAINMENT PURGE SUPPLY	14 - 12 March	· .	
V12-7	CONTAINMENT PURGE SUPPLY	: · · · · ·		, š
V12-8	CONTAINMENT PURGE EXHAUST			
V12-9	CONTAINMENT PURGE EXHAUST			
	· · · · · · · · · · · · · · · · · · ·	1. A		* i

### Function

Close to isolate the affected containment penetration.

### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

### Cold Shutdown Test Justification

These valves are normally closed to provide containment integrity. Therefore, the valves are already in the position required to mitigate the consequences of an accident. Opening of the affected component for the sole purpose of performing closure tests to satisfy quarterly testing requirements is not warranted as stated in Technical Specification Bases ITS SR 3.6.3.4. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

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### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test. ITS SR 3.6.3.4 requires these valves to be tested prior to use if not tested in the previous 92 days.

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#### ATTACHMENT 10.3 Page 14 of 26 COLD SHUTDOWN JUSTIFICATIONS MS-VCS-1

#### Valve ID Description

IA-3744	INSTRUMENT AIR TO MAIN STEAM 'A' CHECK		
IA-3743	INSTRUMENT AIR TO MAIN STEAM 'B' CHECK		N
IA-3742	INSTRUMENT AIR TO MAIN STEAM 'C' CHECK	·`,	

#### Function

Contain air pressure within the MSIV accumulators

#### **Deferred Testing**

Quarterly full stroke exercise open and closed

#### **Cold Shutdown Test Justification**

Reverse exercising of these valves would require isolating and venting the associated instrument air supply header and stroking the MSIV since pressure indication is not provided for the accumulators. The MSIVs cannot be exercised in MODE 1 since closure would induce a steam flow / feed flow transient and result in a plant trip.

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#### **Cold Shutdown Test**

Full stroke exercise open and closed

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#### ATTACHMENT 10.3 Page 15 of 26 COLD SHUTDOWN JUSTIFICATIONS MS-VCS-2

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#### Valve ID Description

MS-V1-3A	MAIN STEAM ISOLATION VALVE 'A'	
MS-V1-3B	MAIN STEAM ISOLATION VALVE 'B'	
MS-V1-3C	MAIN STEAM ISOLATION VALVE 'C'	•

#### Function

Close to limit the reactor coolant system cool down rate following a main steam line break

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#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

**Cold Shutdown Test Justification** Closing these valves in MODE 1 will induce a Steam Generator steam flow / feed flow mismatch and result in a plant trip. A partial stroke exercise test will not be performed since it may lead to the same condition encountered during the performance of a full stroke exercise test if valve failure were to occur during the performance of the part stroke exercise.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test

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#### ATTACHMENT 10.3 Page 16 of 26 **COLD SHUTDOWN JUSTIFICATIONS** PAV-VCS-1

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Valve ID Description

V12-14	CONTAINMENT HYDROGEN EXHAUST 'A'
V12-15	H₂ PURGE PCV 'A' INLET VALVE
V12-18	CONTAINMENT HYDROGEN EXHAUST 'B'
V12-19	H₂ PURGE PCV 'B' INLET VALVE

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#### Function

Close to provide containment isolation. Open to vent containment during post accident conditions

#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test an seatain Seatain an t-the seatain an seatain

### **Cold Shutdown Test Justification**

Exercising these valves during power operation would require defeating administrative controls put in place to prevent inadvertent operation of these components. The valves are normally closed to provide containment isolation for their respective penetrations. The components are re-positioned approximately 54 days following the onset of a DBA. In order to operate these valves, an administratively controlled key must be obtained in order to operate the control panel. In addition, cycling the inboard valves (V12-14, V12-18) requires that two locked closed manual valves in series must be opened which, effectively removes a separate containment penetration from service. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test

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### ATTACHMENT 10.3 Page 17 of 26 **COLD SHUTDOWN JUSTIFICATIONS RCS-VCS-1**

#### Valve ID Description

**PCV-455C** PRESSURIZER POWER OPERATED RELIEF VALVE **PCV-456** PRESSURIZER POWER OPERATED RELIEF VALVE

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#### Function

Open to provide overpressure protection when the RCS is at low temperature conditions

#### Deferred Testing

Quarterly stroke time, full stroke exercise and fail safe test

#### **Cold Shutdown Test Justification**

These valves are not needed for overpressure protection during power operation. The safety function of these valves is to protect the reactor vessel and the Reactor Coolant System from low temperature overpressure conditions. During power operations, the valves are closed to provide an RCS barrier. Operation of these valves guarterly will reduce the RCS barrier protection when opened and may lead to excessive RCS leakage if the upstream valve is mis-positioned or leaking by. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

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### **Cold Shutdown Test**

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### **ATTACHMENT 10.3** Page 18 of 26 **COLD SHUTDOWN JUSTIFICATIONS** RCS-VCS-2

Valve ID	Description	t		
RC-567	REACTOR HEAD VENT SOLENOID ISOLATION	1	· ·	
RC-568	REACTOR HEAD VENT SOLENOID ISOLATION	:		
RC-569	REACTOR HEAD VENT SOLENOID ISOLATION			
RC-570	PRESSURIZER VENT SOLENOID ISOLATION			1,
RC-571	PRESSURIZER VENT SOLENOID ISOLATION			
RC-572	CV ATMOSPHERE SOLENOID ISOLATION			

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#### Function

Opens to vent non-condensable gases from the RCS.

Deferred Testind

Quarterly stroke time, full stroke exercise and fail safe test 1. 1. pt 1. M.M.

### Cold Shutdown Test Justification

Technical Requirements Manual Specification (TRMS) 3.2 requires RC-567, RC-568, RC-569, and RC-570 be closed and power removed when above MODE 4. TRMS 3.2 requires RC-571 and RC-572 be closed unless needed to depressurize the RCS vent system in case of leakage past RC-567, RC-568, RC-569, or RC-570. During power operations, the valves are closed to provide an RCS barrier to the PRT or containment atmosphere. Opening these valves reduces RCS boundary integrity. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test

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#### ATTACHMENT 10.3 Page 19 of 26 COLD SHUTDOWN JUSTIFICATIONS SI-VCS-1

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### Valve ID Description

SI-845A SAT DISCHARGE SI-845B SAT DISCHARGE

#### Function

Open to admit sodium hydroxide injection during containment spray system actuation

### **Deferred Testing**

Quarterly stroke time and full stroke exercise

#### **Cold Shutdown Test Justification**

Exercising these valves during power operation would introduce sodium hydroxide into the safety injection system resulting in unacceptable water chemistry. The closing of other valves in the system to allow quarterly cycling of SI-845A and SI-845B would isolate all Sodium Hydroxide injection flow paths. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

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#### ATTACHMENT 10.3 Page 20 of 26 **COLD SHUTDOWN JUSTIFICATIONS** SI-VCS-2

Valve ID	Description			,		
SI-862A	RHR LOOP RWST ISC	DLATION	.5	4	L.	
SI-862B	RHR LOOP RWST ISC	DLATION	9	i.	.•	
SI-864A	RWST DISCHARGE					
SI-864B	RWST DISCHARGE	*		r		
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#### Function

Open to allow suction from the RWST to the RHR pumps. Close to provide postaccident long-term recirculation cooling capability.

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### Deferred Testing

Quarterly stroke time and full stroke exercise

#### **Cold Shutdown Test Justification**

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Exercising these valves during power operation would result in losing suction from the RWST to both trains of residual heat removal system. The failure of one valve in the 144.1 non-conservative direction would result in a total loss of system function. In addition, ITS SR 3.5.2.1 requires AC control power be removed from these valves in MODES 1, 2, and 3. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise and the second secon test. 1 4 1 . : Cold Shutdown Test in 11.51

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### ATTACHMENT 10.3 Page 21 of 26 **COLD SHUTDOWN JUSTIFICATIONS** SI-VCS-3

Valve ID	Description	
SI-863A	RHR LOOP RECIRC	
SI-863B	RHR LOOP RECIRC	
SI-865A	SI ACCUMULATOR 'A' DISCHARGE	
SI-865B	SI ACCUMULATOR 'B' DISCHARGE	•
SI-865C	SI ACCUMULATOR 'C' DISCHARGE	
SI-866A	LOOP 'C' HOT LEG INJECTION ISOLATION	
SI-866B	LOOP 'B' HOT LEG INJECTION ISOLATION	
SI-878A	SI PUMP DISCHARGE HEADER CROSS-CONNECT ISOLATION	
SI-878B	SI PUMP DISCHARGE HEADER CROSS-CONNECT ISOLATION	

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### Function

Safety Injection Isolation Valves

Deferred Testing	14 L	•
Quarterly stroke time and full stroke exercise	ء ار ۽	987 1997

Cold Shutdown Test Justification . . . . 1 . L ITS SR 3.5.1.5 for SI-865A, B, and C and ITS SR 3.5.2.1 for the remainder of applicable valves requires that AC control power be removed from these valves when in MODE 1, 2, or 3 with pressurizer pressure > 1000 psig (SI-865A, B, and C) or when in MODE 1, 2, or 3 (SI-863A and B, SI-866A and B, and SI-878A and B). The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time and full stroke exercise

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#### ATTACHMENT 10.3 Page 22 of 26 COLD SHUTDOWN JUSTIFICATIONS SI-VCS-4

#### Valve ID Description

SI-889A CV SPRAY EDUCTOR FEED CHECK SI-889B CV SPRAY EDUCTOR FEED CHECK

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#### Function

Open to admit sodium hydroxide injection during Containment Spray system actuation. Closes to prevent flow from the Containment Spray Pump minimum flow line from entering the Spray Additive Tank

#### **Deferred Testing**

Quarterly full stroke exercise open and closed

## Cold Shutdown Test Justification

Reverse flow exercising these valves during power operation would render the entire Spray Additive System inoperable. Forward flow exercising of these valves requires isolation of the Spray Additive Tank in order to perform a line flush if the desired chemistry requirements are not met, as well as imposing additional risk associated with contamination of the RWST with NaOH. The sample and flush alignment renders the Spray Additive System inoperable, and would require manual operator action involving multiple valve operations to restore this essential feature. Forward flow testing of either component renders the Spray Additive System inoperable once SI-892D (manual eductor test line isolation) is opened to facilitate the flow path necessary to open these valves. Additional test equipment set - up is required to complete the test.

#### **Cold Shutdown Test**

Full stroke exercise open and closed

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#### ATTACHMENT 10.3 Page 23 of 26 COLD SHUTDOWN JUSTIFICATIONS SI-VCS-5

#### Valve ID Description

SI-856A	SI PUMP RECIRC	1. F.		; ·	· •	e e estado
SI-856B	SI PUMP RECIRC	$(1-\lambda_{i})_{i\in \mathbb{N}}$	:	· · · ·	r .'	

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#### Function

Open to provide a mini-flow path back to RWST. Close during the transition from the injection mode of SIS operation to the recirculation mode of operation to prevent the discharge of containment sump water to the RWST and the potential release of activity through the RWST vent line when the SI Pumps are used during the recirculation mode.

#### **Deferred Testing**

Quarterly stroke time, full stroke exercise and fail safe test

#### Cold Shutdown Test Justification and the second sec

Exercising these valves during power operations with the SI Pumps racked in creates the potential for a pump start and run without a minimum flow path available. This condition increases the potential for possible pump damage and safety system unavailability. Failure in a non-conservative direction will result in total loss of system function. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test

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### ATTACHMENT 10.3 Page 24 of 26 COLD SHUTDOWN JUSTIFICATIONS SI-VCS-6

Valve ID	Description
SI-851A	SI ACCUMULATOR 'A' MAKE-UP VALVE ACCUMULATOR LIQUID FILL LINE ISOLATION
SI-851B	SI ACCUMULATOR 'B' MAKE-UP VALVE ACCUMULATOR LIQUID FILL
SI-851C	SI ACCUMULATOR 'C' MAKE-UP VALVE ACCUMULATOR LIQUID FILL
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#### Function

Closed to prevent the diversion of Safety Injection flow during hot leg injection

#### Deferred Testing

Quarterly stroke time, full stroke exercise and fail safe test

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**Cold Shutdown Test Justification** Exercising these valves while at power creates the potential for valve failure in the nonconservative direction, which would cause a loss of system function during a large break loss of cociant accident as a result of the diversion of flow from the core to the affected Safety Injection accumulator. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Cold Shutdown Test**

Stroke time, full stroke exercise and fail safe test

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#### ATTACHMENT 10.3 Page 25 of 26 **COLD SHUTDOWN JUSTIFICATIONS** SI-VCS-7

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#### Description Valve ID

SI-861A	CV SUMP RECIRC SUCTION
SI-861B	CV SUMP RECIRC SUCTION

#### Function

Open to provide flow path for recirculation phase of RHR. SI-861A closes to provide containment isolation capability for containment penetration P-46 and SI-861B closes to provide containment isolation capability for containment penetration P-47

#### and the second Deferred Testing

Quarterly stroke time and full stroke exercise

#### Cold Shutdown Test Justification

Routine cycling of these valves results in fluid being directed to the ECCS sump. When the sump level is above the watertight construction joints, water may flow into the construction joints through cracks or possibly degraded areas that have lost seal integrity. The borated water then flows along the joint at the bottom of the crane wall until other possibly degraded areas of the joint are encountered. At these locations, the borated water flows out onto the floor in the annulus area and follows the path of least resistance to the lowest point of gravity. The typical flow path from the joint at the bottom of the crane wall is along floor construction joints, which originate at the bottom of the crane wall and terminate at the outer CV wall.  $\{ (s_i) \}$ 1. 1. A.

#### **Cold Shutdown Test**

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#### **ATTACHMENT 10.3** Page 26 of 26 **COLD SHUTDOWN JUSTIFICATIONS** SW-VCS-1

#### Valve ID Description

V6-16C SERVICE WATER ISOLATION TO TURBINE BUILDING

#### Function

Close to isolate service water header from turbine building

**Deferred Testing** Quarterly stroke time and full stroke exercise Quarterly stroke time and full stroke exercise

#### Cold Shutdown Test Justification

Exercising this valve during power operation would temporarily isolate service water to all components in the turbine building and may result in damage to major plant equipment and a plant trip. Valve failure in the test position would require a plant shutdown or trip and may result in damage to plant equipment. The valve is not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test. (2019) 2000 (2019) (2019) (2019)

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### ATTACHMENT 10.4 Page 1 of 10 REFUELING SHUTDOWN JUSTIFICATIONS CC-VRS-1

#### Valve ID Description

CC-731 REACTOR COOLANT PUMP BEARING COOLING WATER OUTLET CHECK

#### Function

Close to prevent emptying the cooling water surge tank upon accident, coincident with failure of upstream containment isolation valve CC-730 to close automatically on phase 'B' containment isolation signal

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#### **Deferred Testing**

Quarterly and cold shutdown full stroke exercise open and closed

### Refueling Shutdown Test Justification

Reverse flow testing of this value is impractical at power or during cold shutdown. The value is located in the return flow path from the reactor coolant pumps motor bearing coolers. The inspection cannot be performed unless this section of piping is depressurized and drained. CCW is not isolated to the RCPs unless maintenance is required and is normally conducted during refueling outages. The disassembly of this value is performed in conjunction with Appendix J local leak rate testing in order to provide a required vent path for testing. The coordination of these two activities minimizes radiation dose and maximizes equipment availability and personnel efficiency. The disassembly of this check value at a refueling interval is consistent with the requirements of ISTC 4.5.4(c)(3).

#### **Refueling Shutdown Test**

Disassembly and examination to verify valve obturator movement to the open and closed positions (full stroke exercise).

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#### ATTACHMENT 10.4 Page 2 of 10 **REFUELING SHUTDOWN JUSTIFICATIONS** CVC-VRS-1

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#### Valve ID Description

CVC-266	VCT TO CHRG PMPS SUCT HDR CHK VLV
LCV-115C	VOLUME CONTROL TANK OUTLET

#### Function

LCV-115C is a normally open MOV which directs flow from the volume control tank (VCT) to the CVCS charging pump suction and automatically isclates the VCT on a low level signal. CVC-266 is a check valve that is normally open to provide a flow path from the VCT to the charging pumps suction. This component is required to close in the event that it becomes necessary to establish an alternate source from the refueling water storage tank (RWST) or boric acid transfer pumps to the charging pumps suction. Closure of this component prevents backflow into the VCT to ensure that the flow of boric acid is properly directed to the charging pumps Deferred Testing and a second standard and a second standard sta 

CVC-266 - Quarterly and cold shutdown full stroke exercise open and closed a stroke with a stroke exercise open and closed a stroke with a stroke exercise open and closed a stroke with a stroke exercise open and closed a stroke exercise open a str LCV-115C - Quarterly and cold shutdown stroke time and full stroke exercise and and and

# Refueling Shutdown Test Justification. If the second state of the

Exercising LCV-115C and reverse flow testing of CVC-266 would interrupt the normal flow path from the VCT to the suction of the charging pumps. A suction supply to the charging pumps is required to maintain an adequate pressurizer level and the required RCP seal injection flow. In order to perform this test, the charging pump suction would be redirected to the refueling water storage tank (RWST). The high boron concentration in the RWST would require a reduction in power to maintain core parameters within a second programmed bands and would deplete the available RWST inventory required for accident mitigation. Failure of either valve in the test position would result in a complete loss of the normal flow path and would result in a unit shutdown. LCV-115C is not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test. The conduct of either test at cold shutdown intervals may challenge the proper seating and operation of the Reactor Coolant Pump (RCP) seals and should be performed in a refueling outage when a second similar challenge to the RCP seals can be avoided.

#### **Refueling Shutdown Test**

CVC-266 - Full stroke exercise open and closed LCV-115C - Stroke time and full stroke exercise

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#### ATTACHMENT 10.4 Page 3 of 10 **REFUELING SHUTDOWN JUSTIFICATIONS** CVC-VRS-2

#### Valve ID Description

CVC-351	BORIC ACID TO CHARGING PUMP SUCTION ISOLATION CHECK	
CVC-357	RWST TO CHARGING PUMPS SUCTION CHECK	

#### Function

The function of CVC-351 is to open and allow flow from the Boric Acid Pumps for emergency boration. CVC-357 opens to allow flow from the RWST for emergency boration. A . . . ... Deferred Testing · · · · · ·

Quarterly and cold shutdown full stroke exercise open and closed ε. <u>ι</u> . . .

#### and the second Refueling Shutdown Test Justification

Exercising these valves during power operation will cause undesirable RCS temperature and/or boron concentration changes which may result in an uncontrolled ( reactivity excursion, plant transient or trip. Operating a charging pump at full flow during cold shutdown with the reactor vessel head in place could result in a low temperature over pressurization of the RCS. For CVC-351, a flow rate of 60 gpm would be required to satisfy the full stroke open position verification. For CVC-357, a flow rate of 138 gpm would be required to satisfy the full stroke open position verification. The valves are not credited for closure to mitigate a design basis accident; however, are tested for this attribute to satisfy check valve bi-directional testing requirements. The reverse flow test of CVC-351 requires that all charging pumps, boric acid pumps and primary water pumps to be secured and all suction paths on the suction side of the charging pumps to be isolated. This results in a loss of seal injection to the RCPs and a loss of make-up capability that would be necessary to maintain an adequate level in the pressurizer. The reverse flow test of CVC-357 requires that LCV-115B, EMERGENCY MAKEUP TO CHARGING PUMP SUCTION CONTROL valve be opened a sufficient period of time to facilitate a proper assessment of closure. This action would result in excessive boration of the RCS of the RCS with the second structure of the and the second second

Refueling Shutdown Test and the content of the state of t Full stroke exercise open and closed All and the second second second second second

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#### ATTACHMENT 10.4 Page 4 of 10 REFUELING SHUTDOWN JUSTIFICATIONS FW-VRS-1

#### Valve ID Description

FW-8A : , .	STEAM GENERATOR 'A' INLET STOP CHECK
FW-8B	STEAM GENERATOR 'B' INLET STOP CHECK
FW-8C	STEAM GENERATOR 'C' INLET STOP CHECK

#### Function

Close to isolate the main feedwater system, as required.

### Deferred Testing

Quarterly and cold shutdown full stroke exercise open and closed

and the second second

#### **Refueling Shutdown Test Justification**

These valves are normally open at power. The check valves cannot be exercised closed during power operation without isolating the main feedwater flow to the Steam Generators, which would result in a plant trip. Reverse flow testing during cold shutdown is impractical. In order to perform the test, the steam generators must be filled, main feedwater system must be re-aligned and portions of the system opened and depressurized. Arranging for special processes would be impractical during cold shutdowns based on the complexity of the test and large size of the valves. Although these valves are open as demonstrated by routine power operations, bi-directional testing of check valves cannot be considered complete until both safety positions have been verified. Both tests must be performed within the same interval.

<b>Refueling Sl</b>		states	en e	$d_1$	. DX ',		•
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$e_{j}^{(1)} = \phi_{j}^{(2)} + $		the set if the	a sur singe			· · · ·	1
			of the last of the start of	1	•	Maria Maria	

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### **ATTACHMENT 10.4** Page 5 of 10 **REFUELING SHUTDOWN JUSTIFICATIONS** IA-VRS-1

#### Valve ID Description

IA-525 AIR DRYER TO INSTRUMENT AIR LOOP CHECK VALVE ISOLATION PCV-1716 INSTRUMENT AIR ISOLATION TO CV A 14 10 

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#### Function

Close to provide containment isolation per 10CFR50, Appendix J.

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#### **Deferred Testing**

IA-525 - Quarterly and cold shutdown full stroke exercise open and closed PCV-1716 - Quarterly and cold shutdown stroke time, full stroke exercise and fail safe test and the state of the second state of the state

#### Refueling Shutdown Test Justification

These valves are normally open to provide instrument air to components located in containment. Exercising these valves during power operation or cold shutdown would isolate instrument air from components inside containment which could result in a plant trip or reduce the level of safety in order to maintain stable plant operation. The valves are tested closed via seat leakage measurement to meet the requirements of 10 CFR 50, Appendix J. Additionally, IA-525 must be proven to close and open in order to fulfill the bi-directional test requirements of the Code. These tests must be performed within the same interval. The leak rate test for this valve is performed at a refueling interval; therefore, the bi-directional test requirement of the Code for testing within the same interval is more appropriate at a refueling interval. Additional tests to verify closure for IA-525 guarterly or at cold shutdown intervals would involve tests that are considered to be impractical since it would involve complex test lineups or non intrusive measures. PCV-1716 is not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same condition that would be encountered during the performance of a full stroke exercise test.

#### **Refueling Shutdown Test**

IA-525 - Full stroke exercise open and closed PCV-1716 - Stroke time, full stroke exercise and fail safe test

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#### **ATTACHMENT 10.4** Page 6 of 10 **REFUELING SHUTDOWN JUSTIFICATIONS RHR-VRS-1**

Valve ID	Description	· ' ·	
RHR-750	LOOP 'B' HOT LEG TO RHR SYSTEM	 	
RHR-751	LOOP 'B' HOT LEG TO RHR SYSTEM		
RHR shutdo	own cooling suction line from RCS loop "B" ho reactor coolant pressure boundary isolation.	ot leg to the RHR pum	nps 🔅
Deferred Te	esting where a case where the		. • .

#### **Deferred Testing**

Quarterly and cold shutdown full stroke exercise and stroke time

#### **Refueling Shutdown Test Justification**

These valves cannot be stroked quarterly because they are interlocked to prevent operation when Reactor Coolant System pressure is greater than 474 psig. RCS pressure during plant operation is approximately 2235 psig; therefore, these valves cannot be exercised unless interlocks are defeated. Control power is removed from RHR-751 prior to entering MODE 3 to provide increased assurance related to RCS barrier integrity. Operation of either valve with fuel in the vessel will remove the entire RHR system from service when the system is required for operation and failure of either one of these valve to re-open would cause a loss of shutdown cooling and is not desired. The valves are not designed to facilitate a part stroke exercise. Therefore, a partial stroke exercise test will not be performed since it may result in the same. condition that would be encountered during the performance of a full stroke exercise test. The valves will be tested in refueling conditions when RHR cooling is not required. But is fully the set of the set 19 - 21 Jun - 1 15.00

# Refueling Shutdown Test in the state of care of the second

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### ATTACHMENT 10.4 Page 7 of 10 REFUELING SHUTDOWN JUSTIFICATIONS SI-VRS-1

#### Valve ID Description

SI-909 SI ACCUMULATORS N<sub>2</sub> SUPPLY CHECK

#### Function

Closes to prevent a backflow of Nitrogen from the SI Accumulators and provides isolation of the associated containment penetration per 10CFR50, Appendix J.

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#### **Deferred Testing**

Quarterly and cold shutdown full stroke exercise open and closed

#### **Refueling Shutdown Test Justification**

Testing of this valve would require the isolation of the nitrogen supply to the Safety. Injection Accumulators. This would represent a challenge to safety equipment to · · · perform its intended function. Although this valve is an active component, it is normally closed and opened only when it is necessary to re-pressurize the SI accumulators. The valve is tested closed via seat leakage measurement to meet the requirements of 10 CFR 50, Appendix J. Additionally, the valve must be proven to close and open in order to fulfill the bi-directional test requirements of the Code. These tests must be performed within the same interval. The use of radiography to verify closure requires the use of • • outside services in order to complete the task. Due to the expense and limitations ۰. associated with performance of this examination, it is not warranted at a quarterly interval. In addition, system realignment to perform inservice testing or radiography is not warranted at a cold shutdown interval when a more definitive test can be performed at a refueling interval. Forward flow testing of the valve is normally completed in refueling outages when preparing to restore the SI accumulators to standby service. The leak rate test for this value is performed at a refueling interval; therefore, the bidirectional test requirement of the Code for testing within the same interval is more ·. • appropriate at a refueling interval

#### **Refueling Shutdown Test**

Full stroke exercise open and closed

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#### ATTACHMENT 10:4 Page 8 of 10 **REFUELING SHUTDOWN JUSTIFICATIONS** SI-VRS-2

Valve ID	Description	1	
SI-879A	SI PUMP 'A' DISCHARGE	CHECK . ;	
SI-879B	SI PUMP 'B' DISCHARGE	CHECK	
SI-879C	SI PUMP 'C' DISCHARGE	CHECK	the state of the s

#### **Function**

Open to permit full flow from the respective Safety Injection pump to the cold leg or hot leg injection pathways. Close to prevent the diversion of flow through an idle pump.

#### **Deferred Testing**

Quarterly and cold shutdown full stroke exercise open and closed

#### **Refueling Shutdown Test Justification**

Quarterly testing (forward flow) is not practical since the RCS pressure exceeds the discharge pressure of the Safety Injection pumps. Full flow testing at cold shutdown conditions is not practical due to the increased probability of a low temperature over pressurization event: therefore, testing at a refueling interval with the reactor vessel head removed is appropriate. Although reverse flow testing is performed at a quarterly test interval, check valve bi-directional test requirements cannot be considered 11.11 completed until both positions have been verified within the same interval. . . . . . . .

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#### **Refueling Shutdown Test**

Full stroke exercise open and closed Sec. 30 and the second particle of the second sec and the second of the program is a second 1.12 and the second 11 and the second second second and the second ۰, and the second 1. "这些你们的建立了你的人,你们都能能是这个人的,我们的人理我们的你的,你们还要做了<sup>这</sup>个人 and a second (a) the the second process of the second se second s second s second s second se "我们还不是你了,你是你是你的,你是你的你,我们们们你是<mark>我们</mark>你的,你还不能了。""你是你不是你的,你能是你 · 我们们的人,你们就是你要问题,我们们的人,你们就是你的人,我就是你们是你们的,我们就能能不能。" 人口 たけ アル・ビーボス ほどうたいの シンテムれい いちい a strange and a strange The second s

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#### ATTACHMENT 10.4 Page 9 of 10 REFUELING SHUTDOWN JUSTIFICATIONS SI-VRS-3

#### Valve ID Description

SI-873A	BORON INJECTION TO RCS CHECK			,
SI-873D	BORON INJECTION TO RCS CHECK		· · · · ·	
SI-873E	BORON INJECTION TO RCS CHECK	•	: . ;	
SI-873F	BORON INJECTION TO RCS CHECK	<b>1</b> • • •	. , ,	

#### Function

Close to provide isolation of high pressure RCS from a lower pressure rated safety injection system.

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#### **Deferred Testing**

Quarterly and cold shutdown full stroke exercise open and closed

#### **Refueling Shutdown Test Justification**

Forward flow testing of these valves can only be performed by injecting water into the RCS utilizing the RWST as the supply source. The SI pumps discharge pressure cannot overcome normal RCS system pressure; therefore, the forward flow testing cannot be performed unless the reactor coolant system is depressurized and vented. Injecting with the RCS depressurized and not vented may result in a low temperature over 'pressurization of the RCS' due to the small expansion volume. For this reason, the full flow test is conducted when filling or draining the refueling canal in conjunction with refueling outages.

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Reverse flow testing of these valves requires the cold leg injection flow paths to be isolated one at a time. In addition to reducing safety system availability, the closure test requires that manual valves inside the Class 1 and 2 pressure boundaries be opened in order to provide a flow path for any seat leakage. This is an undesirable practice since the RCS pressure boundary is normally maintained by closed valves or valves capable of automatic closure. This evolution requires entry into containment and into Locked High Radiation Areas, increasing personnel exposure and the potential for personnel contamination. The activity is scheduled during critical plant evolutions based on the conditions necessary to facilitate testing. Portable testing equipment (pumps, hoses, fittings, containers, etc.) is required. Staging and installation of portable test equipment (hoses, fittings, gages, containers, etc.) inside containment to perform this test increases the probability for incidents to occur due to activities performed on hot, pressurized systems.

Check valve tests must be performed by verifying the open and closed positions. The tests are to be performed at an interval when it is practicable to perform both tests. These components are required to be leak rate tested IAW ITS SR 3.4.14.1at cold shutdowns of greater than 48 hours in duration, provided the test has not been completed in the previous 9 months (276 days). The leak test satisfies the requirement for closure verification. The forward flow test is performed at a refueling interval. The combination of these two activities satisfies the OM Code requirement for bi-directional testing and the interval extension to refueling is warranted.

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#### ATTACHMENT 10.4 Page 10 of 10 REFUELING SHUTDOWN JUSTIFICATIONS

### **Refueling Shutdown Test**

**RNP2** Fifth IST Plan

Full flow exercise at refueling intervals and reverse flow verification via seat leakage testing at cold shutdown intervals - greater than 48 hours in duration and prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months and within 24 hours following valve actuation due to automatic or manual action or flow through the valve.

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### ATTACHMENT 10.5 Page 1 of 2 PUMP TABLE

P&ID (SHT) Coord Group Type Speed	Test Type Tes Free	1 1	Notes
G-190197 (4) C-3 B C-H Fixed Co	omp. – Q, dP, V Bi	207 -	- 
G	iroup B – Q, Dp Q	201-1	.:
G-190197 (4) A-3 B C-H Fixed Co	omp. – Q, dP, V Bi	207	
G	iroup B – Q, Dp Q	201-2	
G-190197 (4) D-2 B C-H Variable Cor	mp. – N, Q, dP, V Bi	206	
Gro	oup B – N, Q, Dp Q	202	
5379-685 (3) B-6 A C-H Fixed Co	omp. – Q, dP, V Bi	108-3	
Gra	oup A – Q, Dp, V Q	108-1	IST-RR-1
5379-685 (3) B-5 A C-H Fixed Co	omp. – Q, dP, V Bi	108-4	
Gro	oup A – Q, Dp, V Q	108-2	IST-RR-1
5379-376 (1) D-7 A C-H Fixed Co	omp. – Q, dP, V Bi	908-1	IST-RR-1
Gro	oup A – Q, Dp, V Q	908	IST-RR-2
5379-376 (1) C-7 A C-H Fixed Co	omp. – Q, dP, V Bi	908-1	IST-RR-1
Gro	oup A – Q, Dp, V Q	- 908	IST-RR-2
5379-376 (1) A-7 A C-H Fixed Co	omp. – Q, dP, V Bi	908-1	IST-RR-1
Gro	pup A – Q, Dp, V Q	908	IST-RR-2
5379-1082 (3) C-3 B C-H Fixed Co	omp. – Q, dP, V Bi	352-3	
G	roup B – Q, Dp Q	352-1	
5379-1082 (3) E-3 B C-H Fixed Co	omp. – Q, dP, V Bi	352-4	
G	roup B – Q, Dp Q	352-2	•
5379-685 (2) B-7 A PD-R Variable Co	mp. – N, Q, P, V Bi	101-6	
Gro	up A – N, Q, P, V Q	- 101-1	IST-RR-1
5379-685 (2) C-7 A PD-R Variable Co	mp. – N, Q, P, V Bi	101-7	
Gro	up A – N, Q, P, V Q	101-2	IST-RR-1
5379-685 (2) C-7 A PD-R Variable Co	mp. – N, Q, P, V Bi	101-8	
Gro	up A – N, Q, P, V Q	101-3	IST-RR-1

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### ATTACHMENT 10.5 Page 2 of 2 PUMP TABLE

Pump	P&ID (SHT)	Coord	Group	Туре	Speed	Test Type	Test Freq	OST	Notes
FO-XFER-PMP-A	G-190204D (2)	D-7	A	PD	Fixed	Aug. – Q, P, V	Q	402-1	Augmented
FO-XFER-PMP-B	G-190204D (2)	D-8	A	PD	Fixed	Aug. – Q, P, V	Q	402-2	Augmented
RHR-PMP-A	5379-1484 (1)	D-4	A	C-V	* Fixed	Comp. – Q, dP, V	Bi	253	
					[	Group A – Q, Dp, V	Q	251-1	
RHR-PMP-B	5379-1484 (1)	F-4	A	C-V	Fixed	Comp. – Q, dP, V	Bi	253	
					[	Group A – Q, Dp, V	Q	251-2	
SI-PMP-A	5379-1082 (2)	C-6	В	C-H	Fixed	Comp. – Q, dP, V	Bi	151-4	
					[	Group B – Q, Dp	Q	151-1	IST-RR-2
SI-PMP-B	5379-1082 (2)	E-6	В	C-H	Fixed	Comp. – Q, dP, V	Bi	151-5	Normally OOS
						Group B – Q, Dp	Q	151-2	IST-RR-2
SI-PMP-C	5379-1082 (2)	F-6	В	С-Н	Fixed	Comp. – Q, dP, V	Bi	151-6	
				an air		Group B – Q, Dp	Q	151-3	IST-RR-2
SW-PMP-A	G-190199 (2)	B-7	A	VLS	Fixed	Comp. – Q, dP, V	Bi	302-3	IST-RR-1
					[	Group A – Q, Dp, V	Q	302-1	IST-RR-2
SW-PMP-B	G-190199 (2)	B-7	- A	VLS -	Fixed	Comp. – Q, dP, V-	Bi	302-3	IST-RR-1
					[ [	Group A – Q, Dp, V	Q	302-1	IST-RR-2
SW-PMP-C	G-190199 (2)	B-6	A	VLS	Fixed	Comp. – Q, dP, V	Bi	302-4	
						Group A – Q, Dp, V	Q	302-2	IST-RR-1
SW-PMP-D	G-190199 (2)	B-6	A	VLS	Fixed	Comp. – Q, dP, V	Bi	302-4	
		ļ	1		1	Group A – Q, Dp, V	Q	302-2	IST-RR-1
SWBP-A	G-190199 (7)	E-6	A	С-Н	Fixed	Comp. – Q, dP, V	Bi	303-3	
						Group A – Q, Dp, V	Q	303-1	- IST-RR-1
SWBP-B	G-190199 (7)	F-6	.A	С-Н	· Fixed	Comp. – Q, dP, V	Bi	303-4	
·	· · · · · · ·				· · ·	Group A – Q, Dp, V	Q	303-2	- IST-RR-1

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Valve Number	P&ID (SHT) Remarks	Coord Cat	Act Pass Siz	Valve <sup>e</sup> Type	Act Ra Type Ac	ıp Norm ct Pos.		ail App J os Type C			Test Freq	Test Deferral	Surveillance Test
A TURBO CHARGER INLET	G-190204A (1)	C-6 C	Act 20	СК	SA N	, с	0/C N	A ^ N	N	FF	Q	~	OST-401-1 OST-409-1 OST-410
	AUG Skid mounted	• • • •			Ξ.					RF	Q		OST-401-1 OST-409-1 OST-410
. · ·		х х ці	• .	ν.			. • •					2	and the
AFW-1	G-190197 (1)	B-7 B	Act 6	GA	M N	LO LO	0/C N	A N	. N	FS	Bi	· · · · · · · · · · · · · · · · · · ·	OST-702-3
	· · · · ·	• * .						• •					• • .
FW-104	`G-190197 (1)	B-7 B	Act 6	GA	M N	LO	0/CN	/A N	. N	FS	Bi		OST-702-3
•	· · · · · · · · · · · · · · · · · · ·	••	· · · ·			- ~	·				<i>i</i> n 71	* *	•
FW-105	G-190197 (4)	C-3C	Act 6	СК	SA N	C	O/C N	A N	. N	FF	CS .	FW-VCS-2	CM-134 OST-206 PM-302
	· · · · · · · · · · · · · · · · · · ·			-	na			· • •	. ~	RF	CS	FW-VCS-2	CM-134 OST-702-3 PM-302
¢.,							<i>.</i>						
	G-190197 (4)	D-2 C	Act 1	RV	SA N	, C	O N	A N	N	RL	App. 1	<u> </u>	EST-112
н. <sup>1</sup> т. т		• • •		* <b>e</b>	· ·			- -  		-		• •	
FW-24	G-190197 (4)	B-2 B	Act 6	GA	M N		0 N	A N	N	FS	Bì	• 	OST-701-6
		· • • • • •	· · · ·			-		· • • •				÷ .	
FW-24A	G-190197 (4)	B-2 B	Act. 1	GL	M N	0	C N	A N	N	FS AUG	Bi		OST-701-6

Attachment 10.6
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Valve Table

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							valve	apr	e								
Valve Number	P&ID (SHT) Remarks	Coord -	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos		Арр Ј Туре С				Test Deferral	Surveillance Test
FW-32	G-190197 (4)	C-3	с	Act	1	RV	SA	N	с	0	N/A	N	N	RL	App. 1	<u> </u>	EST-112
							_						ъŝ				* <b>u</b>
FW-33	G-190197 (4)	B-3	С	Act	1	RV	SA	N	С	0	N/A	N	N	RL	App. I		EST-112
	·	". , <b>.</b>		,													
FW-40	G-190197 (4)	C-4	С	Act	4	СК	SA	N	С	O/C	N/A	N	N	RF	App. II		CM-140 OST-202 OST-207 PM-307
			<b>.</b> .			· 1	•••		. 1	<u>.</u>				FF	App. II		CM-140 OST-207 PM-307
FW-41	G-190197 (4)	B-4	С	Act	4	СК	SA	N	С	O/C	N/A	N	Ν	RF	App. II		CM-140 OST-202 OST-207 PM-307
				<u>.</u> .						4) #		-		FF	App. II		CM-140 OST-207 PM-307
FW-68	G-190197 (4)	B-6	С	Act	4	СК	SA	N	c	O/C	N/A	N	N	FF	App. II		CM-140 OST-207 PM-307
											, ·			RF	App. II		CM-140 OST-201-1 OST-207 PM-307
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						Ρ	tachn age 3 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
AFW-69	G-190197 (4)	C-6	С	Act	4	СК	SA	N	С	O/C	N/A	N	N	FF	App. II		CM-140 OST-207 PM-307
	;													RF	App. II		CM-140 OST-201-1 OST-207 PM-307
AFW-70	G-190197 (4)	B-6	c	Act	4	ск	SA	N	С	O/C	N/A	N	N	FF	App. II		CM-140 OST-207 PM-307
		<b>.</b>	• • =		•									RF	App. II		CM-140 OST-201-1 OST-207 PM-307
AFW-79	G-190197 (4)	D-2	С	Act	1	RV	SA	N	с	0	N/A	N	N	RL	Арр. 1	· · · · · · · · · · · · · · · · · · ·	EST-112
. ~		•		·••				· ·				-				. <b>.</b>	•
AFW-8	G-190197 (4)	D-2	С	Act	1	RV	SA	Ν	c	0	N/A	N	N	RL	App. I		EST-112
AFW-84	G-190197 (4)	D-4	с	Act	6	СК	SÁ	N	с	O/C	N/A	N	N	FF	App. II	<u> </u>	OST-206 PM-307
														RF	App. II		OST-202 OST-206 PM-307
, <b>4</b>	n an		-							** ·	-					-	
AFW-9	G-190197 (4)	C-2	С	Act	2	СК	SĄ	N	C	С	N/A	N	N	ov	App. II		CM-139 PM-304
	· · ·	••				· ·	•••		-		-			RF	App. If		CM-139 OST-202 OST-206 PM-304

#### Attachment 10.6 Page 4 of 97 Valve Table

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·····							Valve								·····		
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
AFW-9A	G-190197 (4)	D-4	c	Act	2	СК	SA	N	с	O/C	N/A	N	N	RF	CS	FW-VCS-3	CM-149 OST-201-1 OST-702-3 PM-320
	• * • • •		·											. FF	CS	FW-VCS-3	CM-149 OST-202 OST-206 PM-320
	در و ویکند از <sup>ایر</sup> یکی در		*														
FW-V2-14A .	G-190197 (4)	G-4	В	Act	4	GA	мо	N	с	O/C	AI	N	Y	FS	Q		OST-202 OST-206
	GL 89-10, GL 96-05													TM (O)	Q		OST-202 OST-206
														TM (C)	Q		OST-202 OST-206
			* <u>-</u>	- 4 							-			PI	Bi		OST-206
FW-V2-14B	G-190197 (4)	F-4	В	Act	4	GA	MO	N	С	O/C	Al	N	Y	FS	Q	<u></u>	OST-202 OST-206
	GL 89-10, GL 96-05													TM (O)	Q		OST-202 OST-206
	,													TM (C)	Q		OST-202 OST-206
				.71			*	• '				··· ·	·	ΡI	Bi		OST-206
FW-V2-14C	G-190197 (4)	E-4	В	Act	4	GA	MO	N	С	O/C	AI	N	Y	FS	Q		OST-202 OST-206
	GL 89-10, GL 96-05													TM (O)	Q		OST-202 OST-206
	· .													TM (C)	Q		OST-202 OST-206
x • • • •	1 m 							·					• •	Pl	Bi		OST-206_
		••• · · ·		st.						41 F	<u>.</u> .	24					
And the second se									5 . A						· ·		

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								Table									
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
FW-V2-16A	G-190197 (4)	B-5	В	Act	4	GA	MO	N	С	0/C	AI	N	Y	FS	Q		OST-201-1 OST-207
	GL 89-10, GL 96-05													TM (O)	٩		OST-201-1 OST-207
														TM (C)	Q		OST-201-1 OST-207
-	a a 200 <sup>a a</sup>		<i>2.</i> .	·• ·			•					•••	÷	Pl	Ві		OST-207
FW-V2-16B	G-190197 (4)	C-5		Act	4	GA	мо	N	с	0/C	AI	N	Y	FS	ā	·	OST-201-1
	GL 89-10, GL 96-05													TM (O)	Q		OST-207 OST-201-1
														TM (C)	Q		OST-207 OST-201-1
														PI	Bi		OST-207 OST-207
FW-V2-16C	G-190197 (4)	B-5	В	Act	4	GA	MO	N	c	O/C	Ai	N	Y	FS	Q		OST-201-1 OST-207
	GL 89-10, GL 96-05													TM (O)	Q		OST-201-1 OST-207
														TM (C)	Q		OST-201-1 OST-207
· .			•••				:		۰. ۱	······				Pl	Bi		OST-207
FW-V2-20A	G-190197 (4)	C-5	в	Act	4	GA	MO	N	0	C	Ā	N	Ŷ	FS	Q		OST-201-1
	Full stroke exercise and stroke	lime measurement a	re augme	nted tests										TM (C)	Q		OST-207 OST-201-1
			Ū														OST-207
														PI	Bi		OST-207
		· · · ·							-	_· -		-			•••		•
FW-V2-20B	G-190197 (4)	B-5	B	Act	4	GA	мо	N,	0	с	Al	Ň	Y	FS	Q		OST-201-1 OST-207
	Full stroke exercise and stroke t	time measurement a	re augme	nted tests					t				Ċ.	TM (C)	۵		OST-201-1 OST-207
÷	. 7			-			•	-,	<i></i>				-	PI	Bi	-	OST-207
														-	-		

Attachment 10.6

RNP2 Fifth IST Plan

	· · · ·					P	age 6 Valve	of 9	7									
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveilla Test	
B TURBO CHARGER INLET	G-190204A (1)	F-6	С	Act	20	СК	SA	N	С	O/C	N/A	N	N	FF	Q	. <u></u>	OST-40 OST-40 OST-41	1-2 9-2 11
	AUG Skid mounted													RF	Q		OST-40 OST-40 OST-41	9-2
	. · . ·	i yan isadi wa sa sa					*	~ -			<sup>of</sup>			15			۰ ۵ ۰	ter
2411	G-190197 (1) AUG	B-7	В	Act	6	GA	М	N	0	С	N/A	N	N	FS AUG	Bi		OST-70	
CC-702A	5379-376 (1)	D-6	<u> </u>	Act	16	ск	SA	N	O/C	0/C	N/A	N	N	FF	Q		OST-90 OST-90	08
														RF	Q		OST-90 OST-90	
C-702B	5379-376 (1)	C-6	С	Act	16	СК	SA	N	O/C	O/C	N/A	N	N	FF	Q		OST-90	08
."				·•_	- · -				÷.					RF	Q		OST-90 OST-90 OST-90	08
	ž) -	an an the	· .	۶.													•	
C-702C	5379-376 (1)	B-6	C	Act	16	СК	SA	N	O/C	O/C	N/A	. N	N	FF	Q		OST-90 OST-90	
														RF	Q		OST-90 OST-90	
0.707			<u> </u>			<u>.</u>		· .		<u>.</u>					Ann 1			10
C-707	5379-376 (1)	G-7	C -	Act	.3	RV.	SA	N <u>_</u>	. •	- 0 	, C	N .,	N	RL	App. I	v		
			<i></i>				· ·		۵۰. ۲	** ! •	ير. مدينة						•	
						<del>،</del>	·* · · · · ·	•: ::::,	4 * *									

# Attachment 10.6

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Attachment 10.6 Page 7 of  97 Valve Table																	
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
CC-715	5379-376 (3)	B-2	С	Act	3	RV	SA	N	C	O/C	N/A	N	N	RL	App. I		EST-112
CC-716A	5379-376 (3)		в	Act	6	GA	MO	N	0,	c	ĄI	N	Y	FS	CS	 CC-VCS-1	OST-703-4
	Full stroke exercise and stroke time	measurement	are augme	nted tests	·		• .			·	. '	-	`	TM (C) Pl	CS Bi	CC-VCS-1	OST-703-4 OST-703-4
CC-716B	5379-376 (3) GL 89-10, GL 96-05	D-8	<b>A</b> . 	Act	6	GA	MO	N	0	<b>C</b>	AI	<b>Y</b>	Y	FS TM (C) PI LJ	CS CS Bi App. J	cc-vcs-1 cc-vcs-1	OST-703-4 OST-703-4 OST-703-4 OST-933-26
C-721A	5379-376 (3)	C-6	<u> </u>	Act	1.5	ск	SA	N	0	с	N/A	N	N	ov	App. If		CM-143 EST-152 PM-312
														RF	App. II		CM-143 PM-312
· · · ·							•							A 11			
CC-721B	5379-376 (3)	F-6	С	Act	1.5	СК	SA	N	0	с	N/A	N	N	ov	App. II		CM-143 EST-152 PM-312
	an taon an taon Taon an taon an t													RF	App. II		CM-143 PM-312
	· · · ·					•											
CC-721C	5379-376 (3)	D-6	C	Act	1:5 ·	СК .	SA	N ·	· 0 ·	C	· N/A	Ň	" N	ov	App. II		CM-143 EST-152 PM-312
<sup></sup>	· · · · · · · · · · · · · · · · · · ·			2 m		1 A 1.7 -	• •			,	-	* مين ي	,* <del>-</del> 	RF	App. II		CM-143 PM-312

# Attachment 10.6

#### Attachment 10.6 Page 8 of 97 Valve Table

Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type		Test Deferral	Surveillance Test
CC-722A	5379-376 (3)	B-5 .	C	Act	0.75	RV	SA	N	С	0/C	N/A	N.	N	RL	App. I		EST-112
		. ,															
CC-722B	5379-376 (3)	E-5	с	Act	0.75	RV	SA	N	C	O/C	N/A	N	N -	RL	App. I		EST-112
CC-722C	5379-376 (3)	D-5	c	Act	0.75	RV	SA	N	C	0/C	N/A	N	N	RL	App. I		EST-112
	· · · · · · · · · · · · · · · · · · ·				. <b>.</b>	a.											· · ·
CC-729	5379-376 (3)	F-2	с	Act	3	RV	SA	N	с	O/C	N/A	N	N	RL	App. I		EST-112
														-			
CC-730	5379-376 (3)	F-1	A	Act	· 6 ·	GL <sup></sup>	мо	N	<i></i> 0	c ·	AI	Y ···	- Y	FS	CS	CC-VCS-2	OST-703-4
	GL 89-10, GL 96-05													TM (C)	CS	CC-VCS-2	OST-703-4
														PI	Bi		OST-703-4
														LJ	App. J		OST-933-27
	in the same		•.		• ••	>			· •	•					· •	· .	
CC-731	5379-376 (2)	C-6	с	Act	6	СК	SA	N	0	с	N/A	N	N	DA	R	CC-VRS-1	EST-132
			. ,									· ·					
CC-735	5379-376 (2)	C-5	A	Act	3	ĢA	MO	N	0	С	Al	Y	Y	FS	CS	CC-VCS-3	OST-703-4
	GL 89-10, GL 96-05	·	•	-				<b>.</b>	۰ :	р b	. ·			TM (C)	CS	CC-VCS-3	OST-703-4
	, was an inter .								*			-		Pl	Bi		OST-703-4
							-							LJ	App. J		OST-933-9
						,	· ·										

• •						P	tachn age 9 /aive	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
CC-736	5379-376 (2) AUG	C-5	В	Pass	3	GA	м	N	0	0	N/A	N	N	FS AUG	Bi		OST-933-9
~	• / _ ~	÷ .			· .								·			·· ·· ··	· · · · · ·
CC-737A	5379-376 (3)	B-8	В	Act	3	GA	м	N	0	С	N/A	N	N	FS	Bi		OST-701-6
CC-738	5379-376 (3)	B-7	C	- Act	.3	СК	SA	N	- 0	- C	N/A -	N	N	•••• <b>ov</b>	App. 11		CM-131 EST-132 EST-152 PM-308
· · · · ·	. <sup></sup>	<b>.</b> .				11. W				•		<b>.</b> .	•	RF	App. 11		CM-131 EST-132 PM-308
C-739	5379-376 (3)	B-1	В	Act	3	GA	AO	N	0	с	С	N	Ŷ	FS	Q		OST-701-3
	·			-						•	<u>,</u> ,			FC TM (C) PI	Q Q Bi		OST-701-3 OST-701-3 OST-707-3
C-747A	5379-376 (2) Thermal Relief Valve - Code Case	F-6 DMN-2	с 	Act	1	RV	SA	N	Ç	<b>N/A</b>	N/A	N		RL	App, I		î
CC-747B	5379-376 (2)	F-5	с	Act	1	RV	SA	N	с	N/A	N/A	Ņ	N	RL	App. I		
··· ·· ·· ·	Thermal Relief Valve - Code Case	OMN-2	·	-		-								• •			•
		н <sup>с</sup> . Ч.				•	•		-				•	·	<b>x</b> . <sup>191</sup>		. •
		,		•				•									

GL 89-10, GL CC-749B 5379-376 (2) GL 89-10, GL CC-774 5379-376 (4) Thermal Relief CC-791B 5379-376 (2) Thermal Relief Operation. OP CC-791C 5379-376 (2)	96-05	E-5	B	Act Pass Act Act	Size 16 16		Act Type MO MO	Act N N	Pos c	0	Fail Pos Al	App J Type C N		Test Type FS TM (O) PI FS TM (O) PI		Test Deferra	 Surveillance Test OST-252-1 OST-252-1 OST-258-1 OST-252-2 OST-252-2 OST-258-2
GL 89-10, GL CC-749B \$379-376 (2) GL 89-10, GL CC-774 \$379-376 (4) Thermal Relief CC-791B \$379-376 (2) Thermal Relief Operation. OP CC-791C \$379-376 (2) Thermal Relief	96-05 Valve - Code Case C	E-5	В	Act	16	GA , , RV	MO	- N N	c	0	AI	N	Y	TM (O) PI FS TM (O) PI	Q Bi Q Q		OST-252-1 OST-258-1 OST-252-2 OST-252-2
CC-749B         \$379-376 (2)           GL 89-10, GL           CC-774         \$379-376 (4)           Thermal Relief           CC-791B         \$379-376 (2)           Thermal Relief           Operation. OP           CC-791C         \$379-376 (2)           Thermal Relief	96-05 Valve - Code Case C	E-5	- 	··- <u>-</u>	-	,	SA	N	-	0	AI		Y	PI FS TM (O) PI	Bi		 OST-258-1 OST-252-2 OST-252-2
CC-749B \$379-376 (2) GL 89-10, GL CC-774 \$379-376 (4) Thermal Relia CC-791B \$379-376 (2) Thermal Relia operation. OP CC-791C \$379-376 (2) Thermal Relia	96-05 Valve - Code Case C	E-5	- 	··- <u>-</u>	-		SA	N	-	0	AI		Y	FS TM (O) PI	Q		 OST-252-2 OST-252-2
GL 89-10, GL CC-774 5379-376 (4) Thermal Relia CC-791B 5379-376 (2) Thermal Relia operation. OP CC-791C \$379-376 (2) Thermal Relia	Valve - Code Case C	C-1	- 	··- <u>-</u>	-		SA	N	-				Y	TM (O) Pl	Q		 OST-252-2
CC-774 5379-376 (4) Thermal Relief CC-791B 5379-376 (2) Thermal Relief operation. OP CC-791C 5379-376 (2) Thermal Relief	Valve - Code Case C	C-1		Act	.75	RV	SA			·,	• • •			PI			
CC-774 \$379-376 (4) Thermal Relief CC-791B \$379-376 (2) Thermal Relief Operation. OP CC-791C \$379-376 (2) Thermal Relief CC-791C \$379-376 (2) Thermal Relief	Valve - Code Case C	C-1		Act	.75					-					· Bi		OST-258-2
CC-791B \$379-376 (2) Thermal Relief operation. OP CC-791C \$379-376 (2) Thermal Relief		1. v	B	Act	.75												
CC-791B \$379-376 (2) Thermal Relief operation. OP CC-791C \$379-376 (2) Thermal Relie				• •					с	N/A	N/A	N	N	RL	App. I	<u> </u>	 
CC-791B \$379-376 (2) Thermal Relief operation. OP CC-791C \$379-376 (2) Thermal Relie												n.'					
Thermal Relie operation. OP CC-791C \$379-376 (2) Thermal Relie						· · .							,				 <b>.</b>
operation. OP CC-791C \$379-376 (2) Thermal Relie		B-3	С	Act	0.75	RV	SA	N	С	0	N/A	N	N	RL	App. I		EST-112
CC-791C 5379-376 (2) Thermal Relie	Valve - Code Case C -305-2 and OP-306, a	OMN-2. This v attachment 10.	valve is list .2 require	ted as part that Code r	of a syster required te	m that is re Isting be de	moved from termined p	n service prior to pl	and will r acing the	not be used system into	to suppor service.	rt plant					
Thermal Relie						. 1			ar <b>a</b> r -		-			•			
		F-2	с	Act	.75	RV	SA	N	С	N/A	N/A	N	N	RL	App. I		 _
	f Valve - Code Case C	DMN-2															
		- 1998 y				-				• •	194						
CC-791D 5379-376 (4)		B-4	С	Act	0.75	RV	SA	N	с	0	N/A	N	N	RL	App. 1		 EST-112
Thermal Relie	f Valve - Code Case C	DMN-2															
· · · · · · · · · · · · · · · · · · ·							~ . <i>.</i>		 	- 	•						
CC-791E 5379-376 (2)		C-3	С	·Act	0.75	- RV	SA	N	C	O	'N/A	N	N	RL	App. I		 EST-112
Thermal Relie		OMN-2. This v	valve is lis ).2 require	ted as part that Code i	of a syster required te	m that is re esting be de	moved fro	n service prior to pl	and will r acing the	not be ûsed system into	to suppor service.	rt plant		.*			

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## Attachment 10.6 Page 11 of 97 Valve Table

Valve Number	P&ID (SHT) Remarks	c	oord	Cat	Act Pass	Size	Valve Type	Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type	Test Freq	Test Deferral	Surveillance Test
CC-791F	5379-376 (2)	C	3	с	Act	.75	RV	SA	N	с	N/A	N/A	N	N	RL	App. I		EST-112
	Thermal Relief Valve - Co operation. OP-305-2 and	ode Case OMN- d OP-306, attach	2. This valv ment 10.2 r	e is liste equire th	d as part of at Code re	f a system quired tes	that is ren ting be def	noved fror termined p	n service	and will n cing the s	ot be used system into	l to suppo o service.	rt plant					
	£ .																	• •
C-791G	5379-376 (1)	E-	1	с	Act	.75	RV	SA	N	с	N/A	N/A	N	N	RL	App. I		
	Thermal Relief Valve - C	ode Case OMN-	2															
	<u>.</u>			-	۰.				•		··· . '		•					
C-791H	5379-376 (2)	E-	2	с	Act	.75	RV	SA	N	с	N/A	N/A	N	N	RL	App. I		••
	Thermal Relief Valve - C	ode Case OMN-	2	• •	• • •				•									
						. • .				:	•							
<b>、</b>	tan tan																	
	5379-376 (4)	G		с	Act	0.75	RV	SA	N	с	0	N/A	N	N	RL	App. I	<u></u>	EST-112
	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and	G.	6 2. This valv	C re is lister	d as part of	f a system	that is rer	noved fror	n service .	and will n	ot be used	to suppo	rt plant	N	RL	App. I		EST-112
C-791J	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and	G ode Case OMN- d OP-306, attach	6 2. This valv ment 10.2 r	C re is lister	d as part of	f a system	that is rer	noved fror	n service rior to pla	and will n	ot be used	to suppo	rt plant	N	-			
	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and	G ode Case OMN- d OP-306, attach  F- ode Case OMN-	6 2. This valv ment 10.2 r 6 2. This val	C re is lister equire th C Ve is liste	d as part of at Code re Act ad as part o	f a system quired tes 0.75 of a system	that is rer ting be def RV n that is re	noved fror termined p SA moved fro	n service rior to pla N N	and will n cing the s C and will r	ot be used system into O not be use	d to suppo o service. N/A d to suppo	rt plant N		RL RL	App. I App. I		
C-791J	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and	G ode Case OMN- d OP-306, attach  F- ode Case OMN-	6 2. This valv ment 10.2 r 6 6 2. This val ment 10.2 r	C re is lister equire th C Ve is liste	d as part of at Code re Act ad as part o	f a system quired tes 0.75 of a system	that is rer ting be def RV n that is re	noved fror termined p SA moved fro	n service rior to pla N N	and will n cing the s C and will r	ot be used system into O not be use	d to suppo o service. N/A d to suppo	rt plant N		RL			
C-791J C-791K	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and	G ode Case OMN- d OP-306, attach F- ode Case OMN- d OP-306, attach	6 2. This valv ment 10.2 r 6 2. This val ment 10.2 r	C re is lister equire th C Ve is liste	d as part of at Code re Act ad as part o	f a system quired tes 0.75 of a system	that is rer ting be def RV n that is rea ting be def	noved fror termined p SA moved fro	n service rior to pla N N	and will n cing the s C and will r	ot be used system into O not be use	h to suppo o service. N/A d to suppo o service.	rt plant N	N	RL			EST-112
C-791J	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and	G ode Case OMN- d OP-306, attact F- ode Case OMN- d OP-306, attact	6 2. This valv ment 10.2 r 6 2. This val ment 10.2 r	C re is lister equire th C ve is lister equire th	d as part of at Code re Act ed as part o at Code re	f a system quired tes 0.75 of a system quired tes	that is rer ting be def RV n that is re ting be def 	noved fror termined p SA moved fro termined p	n service rior to pla	and will n cing the s C and will r cing the s	ot be used system into O not be use system into	d to suppo o service. N/A d to suppo o service.	nt plant N Int plant	N	RL	App. I		EST-112
C-791J C-791K	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4)	G ode Case OMN- d OP-306, attach F- ode Case OMN- d OP-306, attach C- ode Case OMN-	6 2. This valv ment 10.2 r 6 2. This val ment 10.2 r 4	C re is lister equire th C ve is lister equire th	d as part of at Code re Act d as part o at Code re Act	f a system quired tes 0.75 of a system quired tes 0.75	RV RV	Noved fror Lermined p SA moved fro Lermined p SA	n service rior to pla	and will n cing the s C and will r cing the s	ot be used system into O not be use system into	N/A N/A N/A N/A	nt plant N Int plant	N	RL	App. 1 App. 1		EST-112 EST-112
С-791J С-791К	5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4) Thermal Relief Valve - C operation. OP-305-2 and 5379-376 (4)	G ode Case OMN- d OP-306, attach F- ode Case OMN- d OP-306, attach C- ode Case OMN- C-	6 2. This valv ment 10.2 r 6 2. This val ment 10.2 r 4	C re is lister equire th C ve is lister equire th	d as part of at Code re Act d as part o at Code re Act	f a system quired tes 0.75 of a system quired tes	RV RV n that is ret ting be def  RV	Noved fron Lermined p SA moved fro Lermined p	n service rior to pla N m service rior to pla	C and will n cing the s and will r cing the s	ot be used system into O not be use system into	N/A N/A N/A N/A	nt plant N Int plant	N	RL	App. I		EST-112

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	_						Pa	tachn ge 12 Valve	of 9	7									
Valve Number	ବି&ID (SHT) Remarks		Coord	Cat	Act Pass	Size	. Valve Type	Act Type	-		Safe Pos		App J Type C			Test Freq	Test Deferr		Surveillance Test
CC-926	5379-376 (4)		F-4	c	Act	0.75	ск	SA	N	0	O/C	N/A	N	N	FF	App. II			CM-149 EST-152 PM-320
	-			·	· · •										RF	App. II			CM-149 PM-320
C-927	5379-376 (4)		C-2	В	Act	1	GL	М	N	0	Ō/C	N/A	N	Ň	FS	Bi			OST-701-6A
·	- 					<b>.</b> .		-											н •
C-928	5379-376 (4)		C-2	8	Act	1	GL	м	N	0	O/C	N/A	N	N	FS	Bi			OST-701-6B
					-		. <i>'</i>					۰.							• <u> </u>
C-931	5379-376 (4)		E-4	с	Act	0.75	СК	SA	N	0	O/C	N/A	N	N	FF	App. II			CM-149 EST-152 PM-320
			, .	n .	·				•				-		RF	App. II			CM-149 PM-320
C-932	537 <del>9</del> -376 (2)		B-6	 A	Pass	3	GA	M	N	LC	LC	N/A	N	N	LJ	App. J		. <u>.</u>	OST-933-9
		. <del></del> .	, <b>*.</b> ,	·				.*		-									
C-948	5379-376 (1)		G-8	c	Act	1	VB	SA	N	С	0	N/A	N	N	RL	App. I			EST-130
		 	··· · · ·					· · · - · · ·	· · · ·	, <u>, , , , , , , , , , , , , , , , , , </u>		• ••	-		· -			***	
DR-78	HBR2-09005 SHO		D-7		Act	4	BF	M	N	0	с. С.	N/A	N	N	FS AUG	Bi		<i></i>	OST-701-6
								-	· :										

						Pa	tachn ge 13 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type		Test Deferral	Surveillance Test
CDR-86	G-190197 SH00001	C-8	В	Act	2	GA	м	N	с	0	N/A	N	N	FS AUG	Bi		OST-701-6
	AUG	. Lut			٩.				•	• * *		-			<b>*</b> * *n		
CVC-1118A	5379-686 (1)	G-6	с	Act	2	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
<b>-</b>	AUG	·· ·	a						· .							. · ·	
CVC-1118B	5379-686 (1)	E-6	c	Act	2	RV	SA	N	С	0	N/A	N	N	RL	App. 1		EST-112
	AUG																
n - C				2 may 1 m		<del>.</del>	- `.				<u>.</u>						
CVC-1118C	5379-686 (1)	C-6	С	Act	2	RV	SA	N	с	0	N/A	N	N	RL.	App. I		EST-112
	AUG																
CVC-200A	5379-685 (1)	F-6	В	Act	2	GL	AO	N	O/C	c	С	N	Y	FS	CS	CVC-VCS-5	OST-703-5
														FC	CS	CVC-VCS-5	OST-703-5
	· · ·	:												TM (C)	CS	CVC-VCS-5	OST-703-5
		•	·											PI	Bi		OST-703-5
VC-200B	5379-685 (1)	G-6	В	Act	2	GL	AO	N	O/C	<u>с</u>	с	N	Y	FS	CS	CVC-VCS-5	OST-703-5
														FC	CS	CVC-VCS-5	OST-703-5
														TM (C)	CS	CVC-VCS-5	OST-703-5
	· · · · · ·									-	•			PI	. Bi		OST-703-5
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VC-200C	5379-685 (1)	G-6	В	Act	2	GL ··	AO	'N	O/C	·C	c	N	Y	FS	CS	CVC-VCS-5	OST-703-5
· · · ·					•	·· · ·	•	· •••				•• ·	· ··	FC	CS-	CVC-VCS-5	OST-703-5
														TM (C)	cs	CVC-VCS-5	OST-703-5
							·	. `						PI	Bi		OST-703-5

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Attachment 10.6
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Valve Table

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	•	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
CVC-202A	5379-685 (1)	F-4	A	Act	3	GA	м	N	0	С	N/A	Y	N	FS	Bi		OST-933-2
														LJ	App. J		OST-933-2
		·		ter.													
VC-203A	5379-685 (1)	G-5	с	Act	1	RV	SA	N	С	0	N/A	N	N	RL	App. I		EST-112
					-								• • •				
CVC-203B	5379-685 (1)	G-5	с	Act	2	RV	SA	N	с	0	N/A	N	Ν	RL	App. I		EST-112
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VC-204A	5379-685 (1)	G-4	Α	Act	2	GL	AO	N	0	с	С	Y	Y	FS	CS	CVC-VCS-1	OST-703-5
														FC	CS	CVC-VCS-1	OST-703-5
														TM (C)	cs	CVC-VCS-1	OST-703-5
														PI	Ві		OST-703-5
	i ni ni n		-											LJ	App. J		OST-933-20
CVC-204B	5379-685 (1)	G-4	A	Act	2	GL	AO	N	0	c	с	Ŷ	Y	FŚ	CS	CVC-VCS-1	OST-703-5
														FC	CS	CVC-VCS-1	OST-703-5
	-				-			-	<b></b> .	. •				TM (C)	CS	CVC-VCS-1	OST-703-5
														Ы	Bi		OST-703-5
														LJ	App. J		OST-933-20
CVC-2080	5379-685 (2)	B-5	c	Act	0.75	RV	SA	N	c	0	N/A	N	Ň	RL	App. I	· · ·	EST-112
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				., * •			S. 199			1.1							
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CVC-2081	5379-685 (2)	C-5	С	Act	0.75	RV	SA	-N	С	0 ·	N/A -	N	N	RL	App. I	· · ·	EST-112
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Revision: 1

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						Pa	tachn ge 15 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos		App J Type C		Test Type		Test Deferral	Surveillance Test
CVC-2082	5379-685 (2)	D-6	C	Act	0.75	RV	SA	N	C	. <sup>0</sup>	N/A	N	N	RL :	App. I		EST-112
																	•••
CVC-209	5379-685 (2)	G-4	c	Act	2	RV	SA	N	с	0	N/A	N	N	RL	Арр. І	······	EST-112
in the second	<b>.</b>			· · · •													
CVC-239A	5379-685 (2)	F-4	с	Act	2	СК	SA	N	0	С	N/A	N .	N	ov	App. II		CM-143 EST-152 PM-312
														RF	App. II		CM-143 EST-153 PM-312
		, 	2.					*			•					<b></b> .	*
CVC-257	5379-685 (2)	F-5	c	Act	2	RV	SA	N	с	0	N/A	N	Ň	RL	App. 1		EST-112
		· · · · · · · · · · · · · · · · · · ·	. <i>.</i>									•					
CVC-258	5379-685 (2)	F-7	В	Pass	0.375	GL	SO	N	с	с	С	N	Y	PI	Bi		OP-918
			,	. '		•											
CVC-263	5379-685 (2)	E-5	с	Act	1	СК	SA	N	O/C	с	N/A	N	N	ov	App. II		CM-143 EST-152 PM-312
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						Pa	tachm ge 16 /alve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type			Safe Pos	Fail Pos	App J Type C				Test Deferral	Surveillance Test
CVC-266	5379-685 (2)	D-5	· c	Act	4	CK	SA	N	···· 0	с	N/A	N	N	ov	R	CVC-VRS-1	OST-101-1 OST-101-6
														RF	R	CVC-VRS-1	OST-109
CVC-282	5379-685 (1)		A	Act	3	GL	м	N	0	C	N/A	Ŷ	N	FS LJ	Bi App. J	<u>.</u>	OST-933-2 OST-933-2
:VC-283A	5379-685 (2)	D-7	C	Act	0.75	RV	SA	N	C	0	 N/A	Ň	N	RL	App. I	· · ·	EST-112
VC-283B	5379-685 (2)	C-7	C	Act	0.75	RV	SA	N	C	0	N/A	N	N	RL	App. I	<b></b>	EST-112
CVC-283C	5379-685 (2)	B-7	C	Act	0.75	RV	SA	N	<u>с</u>	0	N/A	N	N	RL	App. 1		EST-112
VC-292A	5379-685 (1)	A-2	B	Act	0.75	GL	M	N	0		N/A		: N	FS	Bi		OST-933-3
	- "								. V.,								· .
	5379-685 (1)	C-3	- <b>A</b>	Act ···	2	GL	M -	N-	O/C	O/C	N/A	· Y	N	FS LJ	Bi App. J		OST-933-3 OST-933-3

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
CVC-293C	5379-685 (1)	B-3	A	Act	2	GL	M	N	O/C	. O/C	N/A	Y	N	FS LJ	Bi App. J		OST-933-3 OST-933-3
CVC-295	5379-685 (1)	A-2	A	Pass	3	GA	<u>_</u>	N		c	N/A	Y	N	LJ	Арр. Ј		OST-933-3
CVC-295A	5379-685 (1)	A-3	A	Pass	0.75	GL	M	N	LC	с	N/A	Ŷ	Ň	IJ	Арр. Ј		OST-933-3
CVC-297A	5379-685 (1)	B-8	A	Act	1	ND	<u>.</u>		0	O/C	N/A	Ŷ	N	FS LJ	Bi App. J		OST-933-3 OST-933-3
CVC-297B	5379-685 (1)	B-6	A	Act	1	ND	M	N	0	O/C		Ŷ	N	FS LJ	Ві Арр. J	<u> </u>	OST-933-3 OST-933-3
CVC-297C	5379-685 (1)	B-5	A	Act	1	ND	M	N	0	O/C	N/A	Ŷ	 N	FS LJ	Bi App. J	<u></u>	OST-933-3 OST-933-3
VC-298A	5379-685 (1)	C-8 · · ·	С	Act	2	СК	-SA	N	0	O/C	N/A	N	N		App. II		CM-143 OST-101-1 OST-101-6
ent Latin The second second		• a* • • •	_	2 N			· · · ·	¢.,	•• •	2 2				RF	App. II	•	CM-143 OST-112-1 PM-312

D (SHT) harks 	C-6 C-5	Cat c	Act Pass Act	<b>Size</b> 2	Valve	SA	Rap Act	Norm Pos O	Safe Pos O/C	Fail Pos N/A	App J Type C	Pos Ind N	Test Type FF RF		Test Deferral	Surveillance Test CM-143 OST-101-1 OST-101-6 PM-312 CM-143 OST-112-2 PM-312
····· · · · · · · · · · · · · · · · ·	· · ·	- <i>.</i> .		, no		۰.	-					-	RF	 Арр. II		OST-101-1 OST-101-6 PM-312 CM-143 OST-112-2 PM-312
	• ·· •		Act	2	СК			0	0/0		Ν	N				OST-112-2 PM-312
: : 685 (1)	• ·· •		Act	2	СК			0	0/0		N	N				CM-143
-685 (1)	C-5	С	Act	2	СК	SA	N	0	0/0		N	N	FF	App. II		CM-143
									0,0	N/A	N	N				OST-101-1 OST-101-6 PM-312
													RF	App. II		CM-143 OST-112-3 PM-312
· . • • •						1		~								
-685 (1)	B-8	С	Act	2	СК	SA	N	0	Ö/C	N/A	N	N	FF	App. II		CM-143 OST-101-1 OST-101-6 PM-312
····· <u>·</u> ···	· .		· Line	- ma 1 -	. •			· · ···		-			RF	App. II		CM-143 OST-112-1 PM-312
-685 (1)	B-6	С	Act	2	СК	SA	N	0			N	N				CM-143 OST-101-1 OST-101-6 PM-312
													RF	App. II		CM-143 OST-112-2 PM-312
					2	 -	<b></b>	• •	14. 	·			s		-	
-685 (1)	B-5	Ċ	Act	2	СК	SA ,	Ņ	0	0/C	N/A	, N	N	FF.	App. II		CM-143 OST-101-1 OST-101-6 PM-312
	·· · · · ·				•	-				-			RF	App. II		CM-143 OST-112-3 PM-312
	385 (1)	585 (1) B-6	585 (1) B-6 C 585 (1) B-5 C	585 (1) B-6 C Act 585 (1) B-5 C Act	585 (1) B-6 C Act 2 585 (1) B-5 C Act 2	385 (1)       B-6       C       Act       2       CK         585 (1)       B-5       C       Act       2       CK	585 (1) B-6 C Act 2 CK SA 585 (1) B-5 C Act 2 CK SA	585 (1) B-6 C Act 2 CK SA N 585 (1) B-5 C Act 2 CK SA N	585 (1) B-6 C Act 2 CK SA N O	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A       N         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A       N       N         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF         385 (1)       B-5       C       Act       2       CK	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II <t< td=""><td>385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N</td></t<>	385 (1)       B-8       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-6       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N       FF       App. II         385 (1)       B-5       C       Act       2       CK       SA       N       O       O/C       N/A       N       N

RNP2 Fifth IST Plan

#### . . . . . . . . Attachment 10.6 Page 19 of 97 Valve Table Valve Act Valve Act Rap Norm Safe Fail App J Pos Test Test Test Surveillance P&ID (SHT) Coord Cat Size Pass Number Type Type Act Pos Pos Pos Type C Ind Type Freq Deferral Test Remarks CVC-307 5379-685 (1) E-3 в Pass .75 GL AO Ν С N/A с Ν Ν FS AUG R OST-933-10 AUG R FC AUG OST-933-10 CVC-309A 5379-685 (1) F-3 Pass GL OST-933-2 A 2 М Ν С С N/A Y N LJ App. J . . . . <u>.</u> · . . . . 2 - FS AUG . Bi ... OST-933-2 5379-685 (1) F-7 CVC-310A В Act 3 GL AO С 0 0 N Y FS CS CVC-VCS-3 OST-703-5 Ν FO cs CVC-VCS-3 OST-703-5 cs OST-703-5 TM (O) CVC-VCS-3 Ы Bi OST-703-5 . . *...* . . CVC-310B 5379-685 (1) F-7 в Pass 3 GL AO 0 0 0 N ΡI Bi OST-703-5 N v FO AUG Bi OST-703-5 Bi TM (C) AUG OST-703-5 Bi OST-703-5 FS AUG - ----. . . . . .. ... ••• - - -- --..... CVC-311 5379-685 (1) E-7 в Pass GL AO С N/A С N FS AUG R OST-933-2 2 N N AUG FC AUG R OST-933-2 .

VC-312A	5379-685 (1)	F-8	С	Act	3	СК	SA	N	С	O/C	<b>N/A</b>	N	N	FF	App. II		CM-135 OST-101-5 PM-310
	· ~·			1 1			6. 917. G	ан. Ча	, at 1	- 	2 Ch			RF	App. II	-	CM-135 OST-167-3 PM-310
	2.87 - ¥								. •	e e							• • •
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- · ·		-	-			Pa	tachṁ ge 20 Valve	of 9	7					,			
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type		Test Deferral	Surveillance Test
CVC-312B	5379-685 (1)	F-8	С	Act	3	СК	SA	N	O/C	O/C	N/A	N	N	FF	App. II		CM-135 OST-101-5 PM-310
·								·						RF	App. 11		CM-135 OST-167-4 PM-310
CVC-312C	5379-685 (1)	F-6	с	Act	3	СК	SA	N	0	O/C	N/A	N	N	FF	App. II		CM-131 OST-101-5
											**			RF	App. II	. <u>-</u> "	CM-143 OST-112-4 PM-312
CVC-313	5379-685 (1)	F-8	c	Pass		CK .	SA	Ň	С	Ċ	N/A	N	N	OV	App. II		CM-143 GP-007 PM-312
	1° 1													RF	App. II		CM-143 OST-167-5 PM-312
· · · · · · · · · · · · · · · · · · ·	· · · ·		.** **			đ i				·							
CVC-341	5379-685 (3)	C-5	В	Act	2	DA	М	N	O/C	O/C	N/A	N	N	FS	Bi		OST-108-4
						e.		,	<u>-</u> `.							, -	•
CVC-342	5379-685 (3)	B-6	В	Act	2	DA	М	N	O/C	O/C	N/A	N	N	FS	Bi		OST-108-3
		······································			•		,		••••	<i>p</i>							•••
CVC-351	5379-685 (2)	B-2	. C	Act	2	СК	SA	Ň	.C	0	N/A	Ň	N	FF CV	R R	CVC-VRS-2 CVC-VRS-2	GP-007 OST-109
	• • • • • • • • •	• • • • • • •		,	•			2 2 2 2		• • • •						-*	· · · ·

	·					Pa	tachn ge 21 Valve	of 9	7								-
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type			Norm Pos	Safe Pos	Fail Pos	App J _Type C	Pos Ind		Test Freq	Test Deferral	Surveillance Test
CVC-357	5379-685 (2)	C-4	с	Act	4	СК	SA	N	с	0	N/A	N	N	FF	R	CVC-VRS-2	GP-009
														CV	R	CVC-VRS-2	OST-109
											t 	<b>n</b> •••					
CVC-358	5379-685 (2)	C-5	В	Act	4	BF	м	N	С	0	N/A	N	N	FS	Bi		OST-701-6
·				-		•	., •1	<sup>1</sup>		1							2 .
CVC-365A	5379-685 (2) AUG	D-3	В	Pass	2	DA	M	N	с	с	N/A	N	N	FS	Bi		OST-703-5
CVC-365B	5379-685 (2) AUG	D-2	"В	Pass	2	DA	<u>.</u> М <sub></sub>	Ň.	<u> </u>	С	N/A	. N	, N	FS	Bi		OST-703-5
CVC-381	5379-685 (1)	E-2	A	Act	3	GA	мо	N	0	с	AI	Y	Y	FS	CS	CVC-VCS-2	OST-703-5
	GL 89-10, GL 96-05													TM (C)	CS	CVC-VCS-2	OST-703-5
· · · · ·	· · ·		·				-			• .				PI	Bi		OST-703-5
														LJ	App. J		OST-933-10
CVC-382	5379-685 (1)	E-3	с	Act	2	RV	SA	N	с	0	N/A	N	N	RL	App. 1		EST-112
 										• • • •		· · ·					· · · · · · · · · · · · · · · · · · ·
CVC-387	5379-685 (1)	F 7	В	Ąct	0.75	GL	AQ	Ņ	O/Ç	<u>_</u> C ۰	c	N	Ŷ	FS	CS	CVC-VCS-4	OST-703-5
	•	E-7		•		:					••		<u>,</u> `~	FC.	CS	CVC-VCS-4	OST-703-5
	, , , 													PI	Bi		OST-703-5
						3** 		· · ·	1.					TM (C)	CS	CVC-VCS-4	OST-703-5

	···	- · · ·		na <i>r</i>			ge 22 Valve										
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C		Туре	Test Freq	Test Deferral	Surveillance Test
CVC-397A	5379-685 (3)	B-5	С	Act	2	СК	SA	N	с	0	N/A	Ν	N	FF	Q		OST-108-1 OST-108-3
														cv	Q		OST-108-2 OST-108-4
•	· · · · · · · · · · ·	_ ·	•	•	segme.						• · ·						•
VC-397B	5379-685 (3)	B-5	C	Act	2	СК	SA	N	C	0	N/A	N	N	FF	Q		OST-108-2 OST-108-4
	· .													cv	Q		OST-108-1 OST-108-3
																	. ·
/C-454	5379-685 (1) AUG	B-7		Act	.75	СК	SA	N	0	N/A	N/A	N	N	<u>ov</u>	R		OST-167-6
A-11A	G-190204A (1) AUG	B-4	c	Act	0.5	RV	SA	N	С	0	N/A	N	N	 RL	App. I	10, FELSE	EST-112
····				-													
A-11B	G-190204A (1) AUG	E-4	С	Act	0.5	RV	SA	N	C	0	N/A	N	N	RL	App. 1		EST-112
A-19A	G-190204A (1)	B-6	В	Act	1.5	TW	SO	N	С	0	0	N	N	FS	Q		OP-604 OST-401-1 OST-409-1 OST-410
	AUG Skid mounted			, 								 		, FO	Q		OP-604 .: OST-401-1 OST-409-1
		<ul> <li>A set</li> </ul>		, ·		-		, ·		,					· ·		OST-410 -
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Attachment 10.6

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							ge 23 Valve								-		
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	•	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
DA-19B	G-190204A (1)	E-6	В	Act	1.5	TW	SO	N	с	0	0	N	N	FS	Q		OP-604 OST-401-2 OST-409-2 OST-411
	AUG			- i	i.	·• ·				·		·		FO	Q		OP-604 OST-401-2 OST-409-2 OST-411
	-	1															
DA-23A	G-190204A (1)	B-6	В	Act	1.5	TW	SO	N	С	0	0	N	N	FS	Q		OP-604 OST-401-1 OST-409-1 OST-410
·	AUG Skid mounted	÷.			,			1.			-			FO	Q		OP-604 OST-401-1 OST-409-1 OST-410
DA-23B	G-190204A (1)	E-6	В	Act	1.5	TW	so	N	с	0	0	N	N	FS	Q		OP-604 OST-401-2 OST-409-2 OST-411
	AUG Skid mounted													FO	Q		OP-604 OST-401-2 OST-409-2 OST-411
	: 11 	· · ·													····		·· * ·
DA-33A	G-190204A (1) AUG DA-9A and DA-33A are tested as a u	C-4	С	Act	0.75	СК	SA	N	O/C	с	N/A	N	Ň	RF	Q		OST-701-4
																	. •
DA-33B	G-190204A (1) AUG DA-9B and DA-33B are tested as a u	E-4	с	Act	0.75	СК	SA	Ň	O/C	с с	N/A	Ņ	N	RF	Q :		OST-701-4
: ::	· · · · · · · · · · · · · · · · · · ·				· · ·	· · ·		•••••••	· - ·			•			: 	· · ·	
									- -								

## Attachment 10.6

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### Attachment 10.6 Page 24 of 97 Valve Table

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							valve										· · · · · · · · · · · · · · · · · · ·
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos		App J Type C		Test Type	Test Freq	Test Deferral	Surveillance Test
DA-9A	G-190204A (1)	B-4	с	Act	0.75	ск	SA	N	O/C	С	. N/A	N	N	RF	Q		OST-701-4
·	AUG DA-9A and DA-33A are tested as a	a unit				· .						, ,					
DA-9B	G-190204A (1)	E-4	с	Act	0.75	СК	SA	N	O/C	С	N/A	N	N	RF	Q		OST-701-4
	AUG DA-9B and DA-33B are tested as a	a unit															
	· · ·· · · ·					,					•••			8,01-			
DG-20A	G-190204A (2)	E-5	С	Act	1.5	СК	SA	N	с	С	N/A	N	N	RF	Q		OST-401-1 OST-409-1 OST-410
	AUG ··· Skid mounted																
	•••• <u>•</u> ••																, , <b></b>
DG-20B	G-190204A (3)	E-5	С	Act	1.5	СК	SA	N	С	С	N/A	N	N	RF	Q		OST-401-2 OST-409-2 OST-411
	AUG Skid mounted																
		···· ··														- <i></i>	••• •
DG-24A	G-190204A (2)	B-5	С	Act	4	СК	SA	N	С	O/C	N/A	N	N	FF	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted																
. <u>.</u> .	، محمد من الأمر الا	2 *															
DG-24B	G-190204A (3)	B-5	С	Act	4	СК	SA	N	C	O/C	N/A	N	N	FF	Q	· · · ·	OST-401-2 OST-409-2 OST-411
	AUG Skid mounted :						· · · · · · · · · · · · · · · · · · ·										<i>.</i>
						• · ·											

### Attachment 10.6 Page 25 of 97 Valve Table

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Valve	P&ID (SHT)	Casad	0-1	Act	<b>C</b> !	Valve	Act	Rap	Norm	Safe		App J				Test	Surveillance
lumber	Remarks	Coord	Cat	Pass	Size	Туре	Туре	Act	Pos	Pos	Pos	Type C	Ind	Туре	Freq	Deferral	Test
G-32A	G-190204A (2)	E-4	с	Act	1	RV	SA	N	c	N/A	N/A	N	N	FV	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted																
							۰,		••••	20	•						
3-32B	G-190204A (3)	E-4	C	Act	1	RV	SA	N	С	N/A	N/A	N	N	FV	Q		OST-401-2 OST-409-2 OST-411
	AUG Skid mounted																
	. ÷.	- 174		• •	:		·										·
G-45A	G-190204A (2)	D-6	C	Act	0.75	СК	SA	N	С	O/C	N/A	N	N	FF	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted													RF	Q		OST-401-1 OST-409-1 OST-410
		ur 4			-							ŕ					
G-45B	G-190204A (3)	D-6	С	Act	0.75	СК	SA	N	с	O/C	N/A	N	N	FF	Q	<u></u>	OST-401-2 OST-409-2 OST-411
	AUG Skid mounted					. · ···	,			•		-		RF	Q		OST-401-2 OST-409-2 OST-411
G-46A	G-190204A (2)	E-4	c	Act	0.5	RV	SA	N	c	N/A	N/A	N	<u>N</u>	FV	<u> </u>		OST-401-1
						л											OST-409-1 OST-410
·····	AUG Skid mounted		·		•	•.	····		معار	-4,							-
	· · · · ·		•	•		<del>.</del>		5 - 5 - 5	*,*1. * *				-11				
<u> </u>	······································	<u> </u>	<u> </u>			<u> </u>	• •							<u></u>			
									1								

<u> </u>		<b>.</b> .			s	Pa	tachn ge 26 Valve	of 9	7	1.00	<u> </u>				<b>.</b>		· · · · · · · · · · · · · · · · · · ·
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C			Test Freq	Test Deferral	Surveillance Test
DG-46B	G-190204A (3)	D-6	· C -	Act	0.5	RV	· · SA	N	• <b>C</b> •	· N/A	N/A	N	N	FV ·	Q	<u></u> .	OST-401-2 OST-409-2 OST-411
	AUG Skid mounted																
				• r 	• •	•• ·			š.,			- ·					
DG-4A	G-190204A (2)	F-2	С	Act	5	СК	SA	N	С	0/C	N/A	N .	N	FF	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted				66	. مو	-,		-					RF	Q		OST-401-1 OST-409-1 OST-410
DG-4B	G-190204A (3)	F-2	с 	Act	5	СК	SA -	N	c	O/C	N/A	N 	N	FF	Q		OST-401-2 OST-409-2 OST-411
	AUG Skid mounted													RF	Q		OST-401-2 OST-409-2 OST-411
, 						·							,		i.,		 
DG-5A	G-190204A (2)	F-2	С	Act	5	ск	SA	N	С	0	N/A	N	N	77	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted	L 100	-	·			-										
DG-5B	G-190204A (3)	F-2	с	Act	5	СК	SA	N	с	0	N/A	N	N	FF	Q		OST-401-2 OST-409-2 OST-411
• • •	AUG Skid mounted								• 	· · · · ·	-		-				
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			. ر		749		: •		· * .	:	•					
DW-19	G-190202 (3)	H-3	- В	Act	6	GA	M	N ,	LC		N/A	N	N	FS	Bi		OST-701-6

#### RNP2 Fifth IST Plan

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			-			Pa	tachn ge 27 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
DW-20	G-190202 SH00003	Н-3	В	Act	0.5	GL	м	N	0	С	N/A	N	N	FS AUG	Bi		OST-701-6
	AUG				4					<del>.</del> .				-			
	G-190202 (3)	H-3	В	Act	6	GA	м	N	LC	0	N/A	N	N	FS	Bi		OST-701-6
			<b>-</b> •'			•	. z <sup>7</sup>		-			-					
W-22	G-190202 SH00003	G-4	В	Act	6	GA	М	N	0	с	N/A	N	N	FS AUG	Bi		OST-701-6
W-27	G-190202 SH00003 AUG	H-4	<b>B</b> 	Act	2	GL î	M 	N .	С	0	N/A	N	N	FS AUG	Bi		OST-701-6
V-1963A-1	G-190204D (2)	C-5	В	Act	1	GL	SO	Y	с	0	c	N	N	FS	Q		OST-402-1
	AUG													FC	Q		OST-402-1
		• • •• •		•								• •				N 7	
V-1963A-2	G-190204D (2)	C-5	В	Act	1	GL	so	Y	С	0	c	N	N	FS	Q		OST-402-1
	AUG													FC	Q		OST-402-1
V-1963B-1	G-190204D (2)	B-5	. В	Act	_ 1	GL	SO	Y	с	0	C	N	N	FS	Q		OST-402-2
	AUG	•					2.4		يان المير ا			- •	÷ .	FC	Q ,	· •	OST-402-2
	•																

RNP2 Fifth IST Plan

	· ·		-	• • •		Pa	ge 28 Jalve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		 Test Deferral	Surveillance Test
EV-1963B-2	G-190204D (2)	. В-5	Β.	. Act	1	GL	<u>.</u> ŞO	Y	С	0,	C .	N	N	FS FC	Q	 	OST-402-2 OST-402-2
	5379-685 (2)	D-4	В	Act	2	DA	AO	N	O/C	с	с	N	Y	FS	Q	 	OST-102
	· · · · · · · · · · · · · · ·													FC TM (C)			OST-102 OST-102
														PI	Bi		OST-111
CV-1424	G-190197 (4)	C-4	В	Act	4	GL	HYD	N	с	0	С	N	Y	FS	Q		OST-201-1 OST-207
														FC	Q		OST-201-1 OST-207
	,				<u>.</u>									TM (O)	Q		OST-201-1 OST-207
														PI	Bi		OST-207
CV-1425	G-190197 (4)	B-4	B	Act	4	GL	HYD	N	С	0	С	N	Y	FS	Q		OST-201-2 OST-207
		<u>.</u>											,	FC	Q		OST-201-2 OST-207
														TM (O)	Q		OST-201-2 OST-207
														PI	Bi		O\$T-207
CV-1608A	G-190199 (2)	E-7	В	Act	3	BL	AO	N	O/C	с	С	N	N	FS	Q	 	OST-302-1 OST-302-3
	AUG	· · · · · · · ·						•	<b>.</b> .				-	FC	Q		OST-302-1 OST-302-3
		3	•.		•		•		. "	1. 				тм (С)	à		OST-302-1 OST-302-3
	······································		• •	: 	· ·			• • •									

Attachment 10.6

							ge 29 Valve										
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	•	Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type	Test Freq	Test Deferral	Surveillance Test
	G-190199 (2)	E-6	В	Act	3	BL	AO	N	O/C	с	с	N	N	FS	Q	······	OST-302-2 OST-302-4
	AUG .		·											FC	Q		OST-302-2 OST-302-4
														ТМ (С)	Q		OST-302-2 OST-302-4
																	<i>'</i> .
CV-1625A	G-190199 (1)	B-2	B	Act	3	GA	so	Ň	0/C	С	c	N	N	FS	Q		OST-302-1 OST-302-3
	AUG													FC	Q		OST-302-1 OST-302-3
، سرختین ب	·····	<u></u> ;	•••			•••					·			TM (C)	Q	-	OST-302-1 OST-302-3
CV-1625B	G-190199 (1)	D-2	в	Act	3	GA	so	N	0/C	<u> </u>	c	N	N	FS	Q		OST-302-1 OST-302-3
	AUG													FC	Q		OST-302-1 OST-302-3
	· .						·					-		TM (C)	Q		OST-302-1 OST-302-3
CV-1625C	G-190199 (1)	F-2	в	Act	3	GA	SO	N	O/C	С	С	N	N	FS	Q		OST-302-1 OST-302-3
	AUG													FC	Q		OST-302-1 OST-302-3
	· · · ·													TM (C)	Q		OST-302-3 OST-302-1 OST-302-3
														-			
CV-1930A	G-190234 (1)	F-7	A	Act	3.	GĄ	AO	N	0	C	C	Y	Ŷ	FS	Q		OST-701-9
		· •							•					FC	Q		OST-701-9
		· · · ·				-	÷ •		•.				•	TM (C)	Q		OST-701-9
·				• * `		·.*					, ,		-	PI	Bi		OST-707-9
	·· · · · · · · · · · · · · · · · · · ·	·• · · ·	-		• ···	-								LJ	App. J		OST-933-19
									-								

# Attachment 10.6

FCV-1931A G-190234 (1) FCV-1931B G-190234 (1) FCV-1932A G-190234 (1)			-		Pag	ge 30 /alve		7								
FCV-1931A G-190234 (1) FCV-1931B G-190234 (1)	Coor	d Cat	Act Pass	Size	Valve Type		•		Safe Pos	Fail Pos	App J Type C			Test Freq	Test Deferral	Surveillance Test
FCV-1931A G-190234 (1)	F-7	Α	Act	3	GA	AO	N	0	с	с	Y	Y	FS	Q		OST-701-9
=CV-1931B G-190234 (1)	. <u></u>			۰.									FC	Q		ÖST-701-9
=CV-1931B G-190234 (1)													TM (C)	Q		OST-701-9
FCV-1931B G-190234 (1)													PI	Bi		OST-707-9
=CV-1931B G-190234 (1)													IJ	App. J		OST-933-19
CV-1931B G-190234 (1)	D-7	A	Act	3	GA	AO	N	0	c	c	Y	Y	FS	Q		OST-701-9
=CV-1932A G-190234 (1)		مد م در								• *			FC	Q		OST-701-9
=CV-1932A G-190234 (1)													TM (C)	Q		OST-701-9
=CV-1932A G-190234 (1)													PI	Bi		OST-707-9
=CV-1932A G-190234 (1)													LJ . N	App. J		OST-933-17
=CV-1932A G-190234 (1)	D-7	A	Act	3	GA	AO	N	0	с	С	Y	Y	FS	Q		OST-701-9
	·· · ·		· · -		•••	· · ·			-				FC <sup>-</sup>	Q		OST-701-9
													TM (C)	Q		OST-701-9
													PI	Bi		OST-707-9
													LJ	App. J		OST-933-17
	C-7	A	Act	3	GA	AO	N	0	ć	С	Y	Ŷ	FS	Q		OST-701-9
FCV-1932B G-190234 (1)			i									'	FC	Q		OST-701-9
=CV-1932B G-190234 (1)													TM (C)	Q		OST-701-9
FCV-1932B G-190234 (1)													Pl	Bi		OST-707-9
FCV-1932B G-190234 (1)													LJ .	App. J		OST-933-18
· · ·	C-7	A	Act	3	GA	AO	N	0	С	С	Y	Y	FS	Q		OST-701-9
	<del></del>	· · · · ·	- '-			ъ. Т							FC	Q		OST-701-9
											.1		TM (C)	Q		OST-701-9
		•,	•			ا جامع							Pl	Bi		OST-707-9
						•			-2535-3 -		ی کار میدود مد		ĽJ	App. J	2 <sup>14</sup>	OST-933-18

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			-			Pa	tachm ge 31 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C				Test Deferral	Surveillance Test
FCV-1933A	G-190234 (1)	F-7	Α	Act	0.75	GL	AO	N	0	с	с	Y	Y	FS	Q		OST-701-9
·· .	4 13 maa - 1						·			·	·· •• ·			FC	Q	- ·	ÖST-701-9
														TM (C)	Q		OST-701-9
														Pl	Bi		OST-707-9
														LJ	App. J		OST-933-21
CV-1933B	G-190234 (1)	F-7	A	Act	0.75	GL	AO	N	0	с	С	Y	Ŷ	FS	Q		OST-701-9
		. <u>.</u>	- `	: .				·				····		FC	Q		OST-701-9
														TM (C)	Q		OST-701-9
														PI	Bi		OST-707-9
														LJ	App. J		OST-933-21
	G-190234 (1)	D-7	A	Act	0.75	GL	AO	N	0	C	С	Y		FS			OST-701-9
		•					<u> </u>		• •	,				FC	Q		OST-701-9
														TM (C)	Q		OST-701-9
														PI	Bi		OST-707-9
														, IJ	App. J		OST-933-23
CV-1934B	G-190234 (1)	D-7	A	Act	0.75	GL	AO	N	0	С	С	Ý	Ŷ	FS	Q		OST-701-9
• • • •									•					FC	Q <sup>~</sup>		OST-701-9
														TM (C)	Q		OST-701-9
														PI	Bi		OST-707-9
														LJ	App. J		OST-933-23
														·			· .
CV-1935A	G-190234 (1)	B-7	A	Act	0.75	GL	AO	N	0	С	C	Y	Y	FS	Q		OST-701-9
•	e sur en				·	• • • ••		-		• • - •				FC	- Q		OST-701-9
	· · ·							-		· .				TM (C)	Q		OST-701-9
	. ·	·. ·				,			··	•••				PI	Bi		OST-707-9
						i	-	2.4.6	· ·				• •	LJ.	App. J		OST-933-22

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						Pa	tachn ge 32 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Caț	Act Pass	Size	Valve Type	Act Type		Norm Pos	Safe Pos	Fail Pos	••			Test Freq	Test Deferral	Surveillance Test
FCV-1935B	G-190234 (1)	B-7	Α	Act	0.75	GL	AO	N	0	с	С	Y	Y	FS	Q		OST-701-9
	a :											•		FC	Q		OST-701-9
														TM (C)	Q		OST-701-9
														PI	Bi		OST-707-9
•	· · ·	· · · · ·	·					· ·.					-	_ LJ _	App. J		OST-933-22
CV-478	G-190197 (4)	G-3	в	Act	12	GL	AO	N	0	С	С	N	Y	FS	CS	FW-VCS-1	OST-702-2
														FC	CS	FW-VCS-1	OST-702-2
														TM (C)	CS	FW-VCS-1	OST-702-2
														PI	Bi		OST-702-2
		· · · · · · · ·			••						•		•		-		
CV-479	G-190197 (4)	G-3	В	Act	4	GL	AO	N	O/C	С	с	N	Y	FS	CS	FW-VCS-1	OST-702-2
														FC	cs	FW-VCS-1	OST-702-2
														TM (C)	CS	FW-VCS-1	OST-702-2
														PI	Bi		OST-702-2
			:	. *			•					an a l'Èn				£.,	····
	G-190197 (4)	F-3	В	Act	12	GL	AO	N	0	С	С	N	Y	FS	CS	FW-VCS-1	OST-702-2
														FC	CS	FW-VCS-1	OST-702-2
		,												TM (C)	CS	FW-VCS-1	OST-702-2
	•••••••	·			-		1.2							PI	Bi		OST-702-2
CV-489	G-190197 (4)	F-3	В	Act	4	GL	AO	N	O/C	c	с	N	Y	FS	CS	FW-VCS-1	OST-702-2
														FC	cs	FW-VCS-1	OST-702-2
														TM (C)	cs	FW-VCS-1	OST-702-2
	··· - ·· · · · · · · · · · · · · · · ·	•	···· -				• • •			•• •••	-			PI	Bi		OST-702-2
		· .							<sup>1</sup>								
FCV-498	G-190197 (4)	E-3	в	Act	12	GL	AO	∽ N	0	c	C	N	Y	FS	cs	FW-VCS-1	OST-702-2
						•					·			FC	cs	FW-VCS-1	OST-702-2
							• 1							TM (C)	cs	FW-VCS-1	OST-702-2
						2	•	•	<u>.</u>					PI	Bi		OST-702-2
									<i>i</i> .								

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						Pa	tachm ge 33 Valve	of 9'	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type			Safe Pos		App J Type C		Test Type		Test Deferral	Surveillance Test
FCV-499	G-190197 (4)	E-3	в	Act	4	GL	AO	N	O/C	с	С	N	Y	FS	CS	FW-VCS-1	OST-702-2
														FÇ	cs	FW-VCS-1	OST-702-2
														TM (C)	cs	FW-VCS-1	OST-702-2
· <u>.</u> . · ·					•	.*		 	-					PI	Bi		OST-702-2
	5379-1484 (1)	D-7	в	Pass	12	BF	AO	N	с	c	с	N	Ŷ	PI	Bi		GP-007
																÷	
·	a tatu a	-	••				-						<u>``</u>			·	· · ·
	5379-376 (3)	D-1	A	Act	3	GA	мо	N	0	Ē	AI	Y	Ŷ	FS	CS	CC-VCS-3	OST-703-4
	GL 89-10, GL 96-05													TM (C)	CS	CC-VCS-3	OST-703-4
														PI	Bi	, ÷	OST-703-4
														LĴ	App. J		OST-933-9
	· · · · · · · · · · · · · · · · · · ·							• •									
FCV-6416	G-190197 (4)	D-4	В	Pass	6	GA	HYD	N	0	0	0	N	Y	FS AUG	Q		OST-202 OST-206
	Control Valve													FO	Q		OST-202 OST-206
														PI AUG	Bi		OST-206
							: <b>.</b>	-		-	~.			•••			
-O-182A	G-190204D (2)	E-6	с	Act	0.625	СК	SA	N	с	O/C	N/A	N	N	FF	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted													RF	Q		OST-401-1 OST-409-1 OST-410
- · · · · · · · ·		j 		-	· .			-		· -							
-O-182B	G-190204D (2)	E-4*	ċ	Act	0.625	СК	SA	N	<u>с</u> -	O/C	N/A	N	N 2	FF	Q	· · · · · · · · · · · · · · · · · · ·	OST-401-2 OST-409-2 OST-411
	AUG Skid mounted	•••		-	<b>.</b>			 	<b>.</b>	••••••				RF	Q		OST-401-2 OST-409-2 OST-411

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							Pa	tachn ge 34 Valve	of 9	7								:
Valve Number	P&ID (SHT) Remarks		Coord	Cat	Act Pass	Size		Act Type			Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
FO-183A	G-190204D (2)		D-5	С	Act	1	СК	SA	N	с	0	N/A	N	N	FF	Q	- 1	OST-401-1 OST-409-1 OST-410
<u>.</u>	AUG Skid mounted		n .		-													ъ. т.
-O-183B	G-190204D (2)		D-3	С	Act	1	СК	SA	N	с	0	N/A	N	N	FF	Q		OST-401-2 OST-409-2 OST-411
	AUG Skid mounted																-	
=0-22A	G-190204D (2) AUG	<u> </u>	C-7	В	Act	2	GL	М	N	0	O/C	N/A	N	N	FS	Bi		OST-402-1
· <u> </u>	en la la companya da la companya da La companya da la comp		nt Tanàna a															. ′
-0-228	G-190204D (2) AUG		C-8	В	Act	2	GL	М	N	0	O/C	N/A	N	N	FS	Bi		OST-402-2
FO-32A	G-190204D (2)	,	E-5	· C	Act	- 0.5	RV	SA	N	C'	0/C	N/A	Ň	N	FV	Q	<u> </u>	OST-401-1 OST-409-1 OST-410
	AUG Skid mounted								×									
FO-32B	G-190204D (2)		E-3	C.	Act	. 0.5	RV	. SA	Ň		. O/C	N/A	- N	N	· FV	Q ·		OST-401-2 OST-409-2 OST-411
	AUG Skid mounted		24 - 24 		·. * ·	34 <sup>-</sup>				,	- 							051-411
			• • • مص	•••••••		 	-	- · . · ·			-							

	· ·					Pa	ge 35	nent of 9 Tabl	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type			Norm Pos	Safe Pos	Fail Pos	App J Type C			Test Freq	Test Deferral	Surveillance Test
FO-33A .	G-190204D (2)	E-5	· C	Act	0.625	СК	SA	° ∙ <sup>−</sup> N	c ··		N/A	N	N	ŘF	Q		OST-401-1 OST-409-1 OST-410
	AUG Skid mounted																
FO-33B	G-190204D (2)	E-4~-	C ·	Act	0.625	СК	SA	N	C	° C	N/A	N	N	RF	Q		OST-401-2 OST-409-2 OST-411
	AUG Skid mounted																
FP-248	HBR2-8255 (2)	E-7	A	Act	4	GA	мо	N	0	С	AI	Y	Y	FS	Q		OST-701-10
	GL 89-10, GL 96-05													TM (C)	Q		OST-701-10
														PI	Bi		OST-707-10
-		··· .				Þ					-			LJ	App. J		EST-063
FP-249	HBR2-8255 (2)	E-7	A	Act	4	GA	МО	N	0	<u> </u>	ÂI	Y	Y	FS	Q		OST-701-10
	GL 89-10, GL 96-05													TM (C)	Q		OST-701-10
														PI	Ві		OST-707-10
								1						ĹJ	App. J		EST-063
FP-256	HBR2-8255 (2)	F-7	A	Act	4	GA	мо	N	0	С	AI	Y .	Y	FS	Q		OST-701-10
	GL 89-10, GL 96-05													TM (C)	Q		OST-701-10
														Pl	Bi		OST-707-10
··· ·· · · · · · · · · · · · · · · · ·								•• •• •	:						App. J		EST-063
FP-258	HBR2-8255 (2)	F-7	A	Act	4	GA	MO .			C ·	Al		Y	FS	Q		OST-701-10
FL-730	GL 89-10, GL 96-05	1 - 1 ' ,	,		-	GR .					AI	•	•••••	гэ <sup>.</sup> ТМ (С)	Q .		OST-701-10
н м <sup>.</sup>	GE 00-10, GE, 50-00		,						-					PI	Bi		OST-707-10
								•••••						PI LJ	App. J		EST-063
							199	·` *	**								

# Attachment 10.6

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			- nga - 14				ge 36										
	·····						Valve	Table	e								
Valve Number	P&ID (SHT) Remarks	Coord	Ċat	Act Pass	Size		Act Type	Rap Act		Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
	G-190197 (4)	G-6	c	Act	16	SCK	SA	N	0	С	N/A	N	N	RF	R	FW-VRS-1	OST-928
														ov	R	FW-VRS-1	EST-152
																	1.1 <sup>4</sup>
				·													
W-8B	G-190197 (4)	E-6	С	Act	16	SCK	SA	N	0	с	N/A	N	N	RF	R	FW-VRS-1	OST-928
														ov	R	FW-VRS-1	EST-152
	and a second sec									-						1 - N	
-W-8C	G-190197 (4)	D-6	С	Act	16	SCK	SA	N	0	С	N/A	N	N	RF	R	FW-VRS-1	OST-928
														ov	R	FW-VRS-1	EST-152
•		···· ··· ·									•					- 1	· · · · · · · · · · · · · · · · · · ·
FW-V2-6A	G-190197 (4)	G-2	В	Act	16	GA	мо	N	0	С	Al	N	Y	FS	CS	FW-VCS-1	OST-702-2
	GL 89-10, GL 96-05													TM (C)	CS	FW-VCS-1	OST-702-2
														Pł	Bi		OST-702-2
					<b>m</b>		· · · ·							:			···
	G-190197 (4)	F-2	в	Act	16	GA	мо	N	0	C	Al	N	Y	FS	cs	FW-VCS-1	OST-702-2
	GL 89-10, GL 96-05													TM (C)	cs	FW-VCS-1	OST-702-2
														PI	Bi		OST-702-2
· · · · · ·							-		•-								·
W-V2-6C	G-190197 (4)	E-2	В	Act	16	GA	мо	N	0	с	AI	N	Y	FS	CS	FW-VCS-1	OST-702-2
	GL 89-10, GL 96-05	. –	-											TM (C)	cs	FW-VCS-1	OST-702-2
														PI	Bi		OST-702-2
		• •	· · ·						_`								-
	·· · ·			-						 				* Uni			~
ICV-105	5379-685 (3)	C-5	B	Act	2	GL	AO	N	0/C	C	с	N	N	FC	Q		OST-108-2 OST-108-4
	Control Valve				• • •									FS	Q		OST-108-2
							., î	• •									OST-108-4
						·_	•	1									
								· ·									

						Pa	tachn ge 37 Valve	of 9	7							·	
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	_ ·	Fail Pos			Test Type		Test Deferral	Surveillance Test
HCV-110	5379-685 (3)	C-6	В	Act	2	GL	AO	N	0/C	c	с	N	N	FC	Q		OST-108-1 OST-108-3
	Control Valve													FS	Q		OST-108-1 OST-108-3
•••••••••••••••••••••••••••••••••••••••				• •		. `.		· · ·			•			-	1		031-100-5
HCV-758	5379-1484 (1)	E-8	В	Pass	12	BF	AO	N	с	c	С	N	Ŷ	PI	Bi		GP-007
	· .																
 		- ··· ·	· · ·	- •				•									•
(A-297	G-190200 (5)	C-5	В	Act	2	GL	м	N	0	С	N/A	N	N	FS AUG	Bi		OST-906
	AUG																
	,																
··	· · · · · · · · · · · · · · · · · · ·	·	•	<u> </u>			•	<b>~</b>			<u>.</u>			-	-		•
IA-3742	G-190200 (5)	C-4	с	Act	0.25	СК	SA	N	0	С	N/A	N	N	RF	CS	MS-VCS-1	EST-134
														ov	CS	MS-VCS-1	ËST-134
	· · · · · · ·			•										·			
IA-3743	G-190200 (5)	C-4	С	Act	0.25	СК	SA	N	0	с	N/A	N	N	RF	CS	MS-VCS-1	EST-134
														ov	CS	MS-VCS-1	EST-134
	- · · · · · · ·					÷.,					,			Ŧ			
A-3744	G-190200 (5)	C-4	С	Act	0.25	СК	SA	N	0	С	N/A	N	N	RF	CS	MS-VCS-1	EST-134
														ov	CS	MS-VCS-1	EST-134
	et i provincio de la composición de la composicinde la composición de la composición de la composición						·	ć									
IA-423	HBR2-8606 (2)	F-4	В	Act	.75	GL	M	N	LC	<b>0</b> . c'	N/A	N	N	FS AUG	Bi	,	OST-906
	AUG		.'		•.						94 1		_			· .	
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Attac	:hm	nen	t 10.6	
Page	38	of	97	

Valve	_			Act		Valve	Act	Ran	Norm	Safe	Fail	App J	Pos	Test	Test	Test	Surveillance
Number	P&ID (SHT) Remarks	Coord	Cat		Size		Туре			Pos		Туре С				Deferral	Test
A-525	G-190200 (2)	G-7	A/C	Act	- 2	СК	SA	Ň	0	с	N/A	Y	N	RF	R	IA-VRS-1	EST-062
														ov	R	IA-VRS-1	OST-703-7
	•													LJ	App. J		EST-062
	-												· · ·				
/SW-100A	G-190262 (1)	D-7	с	Act	0.375	СK	SA	N	С	0	N/A	N	N	FF	R	IST-RR-3	OST-933-19
	<i></i>																
		`~~ .	-												•		
/SW-100B	G-190262 (1)	D-6	С	Act	0.375	СК	SA	N	С	0	N/A	N	N	FF	R	IST-RR-3	OST-933-17
	ه. مربع الم		*						·								
/SW-100C	G-190262 (1)	D-7	c	Act	0.375	СК	SA	N	С	0	N/A	N	N	FF	R	IST-RR-3	OST-933-18
. <i>.</i>	<u>.</u>	_• · .			<u>.</u>												
/SW-11	G-190262 (1)	F-4	c	Act	0.75	RV	SA	N	С	0	N/A	N	Ν	RL	App. 1		EST-112
	AUG																
/SW-14	G-190262 (1)	 B-1	c	Act	0.375	 RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
	AUG	-	Ţ						-	_							
/SW-16	G-190262 (1)	C-2	В	Act	0.5	GL	<sup>~</sup> M	N N	С	0	N/A	N	N	FS	Bi		OST-933-2
	AUG	· ·	`		$D_{X_{k}} \rightarrow$	• '	• :				۹,						
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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type			Safe Pos		App J Type C		Test Type		Test Deferral	Surveillance Test
VSW-16A	G-190262 (1) AUG	C-2	В	Act	0.5	GL	M	N	с	0	N/A	N	N	FS	Ві		OST-933-3
· · · · · · · · · · · · · · · · · · ·	· · · · · ·		*		`		:			.`-		•					
VSW-16E	G-190262 (1) AUG	B-2	В	Act	0.5	GL	Μ	N	с	0	N/A	N	N	FS	Bi		OST-933-5
			· •	· • • • •				·									-
VSW-16F	G-190262 (1) AUG	B-2	В	Act	0.5	GL	М	N	С	0	N/A	N	N	FS	Bi		OST-933-6
· -					-												.12
/SW-23	G-190262 (1) AUG	B-4	С	Act	0.375	RV	SA	N	с	0	N/A	N	N	RL	Арр. I		EST-112
											·.	·					
/SW-27	G-190262 (1) AUG	8-7	с	Act	0.375	RV	SA	N	с	0	N/A	N	N	RL	Арр. I		EST-112
	·					-*											
VSW-31	G-190262 (1) AUG	E-7	с	Act	0.375	RV	SA	N	с	0	N/A	N	N	RL	Арр. І		EST-112
VSW-66A	G-190262 (1)	- F-2 ·	C	Act	0.375	ĆK	SA	N	0.	с	N/A	N	N	DA	R		OST-933-1
	AUG	-	,				<u>_</u>			· Sec		ı					
, ,	t in the sum			Ŀ			-		·		- 144						
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Attachment 10.6

### RNP2 Fifth IST Plan

Attachment 10.6
Page 40 of 97
Valva Tabla

· · · · · · · · · · · · · · · · · · ·					•••		alve	Table	)								•
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos		Арр Ј Туре С				Test Deferral	Surveillance Test
vSw-66B	G-190262 (1) AUG	F-2	с	Act	0.375	СК	SA	N	0	С	N/A	Ν	N	RF	R		OST-933-1
VSW-68A	G-190262 (1) AUG	- <b>F-2</b> -	C.	Act	0.375	СК	SA	N	с	0	N/A	N	N	FF	R	<u> </u>	OST-933-1
VSW-68B	G-190262 (1)	F-2	C	Act	0.375	- СК	SA	Ň	<u></u>	0	N/A	N	N	FF	R		OST-933-1
VSW-68C	G-190262 (1) AUG	F-3	C ~	Act	0.375	ск	SA	N	C	0	N/A	N N	N	FF	R		OST-933-1
VSW-68D · · · ·	G-190262 (1)	F-3	·· c	~Act	0:375	СК	SA	N	с -	. 0 .	N/A	N	N	FF	R		OST-933-1
VSW-71	G-190262 (1)	C-2	- C.	Act	0.375	СК	SA	N	C	0	N/A	``N	N	FF	R	IST-RR-3	OST-933-2
IVSW-72	G-190262 (1)	C-2	C	Act	0.375	СК	SA	N	C	0	N/A	N	N	FF	R	IST-RR-3	OST-933-3
	the second second			<i>,</i> •		۰.			, 44								•

		<u>.                                    </u>				Ра	tachn ge 41 Valve	of 9	7			-					
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos		App J Type C				Test Deferral	Surveillance Test
VSW-74 .	G-190262 (1) · · · · · · · · · · · · · · · · · · ·	8-2	c -	Áct · ·	- 0.375	СК	ŚA	Ň	c	0	N/A	Ň	N	FF	R	IST-RR-3	OST-933-5
vSw-75	G-190262 (1)	- B-2 ···	C	Act	0.375	ск	SA	N	c	0	N/A	N	N	F	R	IST-RR-3	OST-933-6
							<u> </u>										
VSW-76		- C-4	· -C · -	Act	0.375	CK	SA	N N	С	. 0	` N/A <sup>^</sup>	N .	N	FF	R	IST-RR-3	OST-933-8
	1 a.																
VSW-77	G-190262 (1)	·C-4	- C	Act	0.375	СК	SA	Ň	C	0	N/A	N	N	FF	R	IST-RR-3	OST-933-9
VSW-78	G-190262 (1)	C-4	··· C	-Act	0.375	СК	SA	<u> </u>	C	0	N/A	N	N	FF	R	IST-RR-3	OST-933-10
VSW-79	G-190262 (1)	C-4	c	Act	0.375	СК	SA	N	C	0	N/A	N	N	FF	R	IST-RR-3	OST-933-11
	<b>~</b> .																
VSW-80	G-190262 (1)		C	Act	0.375	CK -	SA	~ N ····	· C	0	N/A	Ň	N	FF	R	IST-RR-3	OST-933-12
	:		•	Ŧ	ترجير		÷ ;	, <i>``</i>		·.·			•				8. ur
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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type			Safe Pos		App J Type C		Test Type		Test Deferral	Surveillance Test
/SW-81	G-190262 (1)	B-4	· C	Act	<sup>.</sup> 0.375	СК	ŚA	N	Ċ	. 0	N/A	N	N	FF	R	IST-RR-3	OST-933-13
/SW-82	G-190262 (1)	E-7 · · ·	· · · C	Act	0.375	СК	SA	N	~ C	· 0	N/A	~ N	• <u>N</u>	FF	<sup></sup> R	iST-RR-3	OST-933-14
/SW-83	G-190262 (1)	E-7	c	Act	0.375	ск	SA	N	с	0	N/A	N	N	ÊF	R	IST-RR-3	OST-933-15
/SW-84	G-190262 (1)	D-7 <sup></sup>	°.C	Act	0.375	ск	SA	N	C	0	N/A	N	Ň	 FF	· R	IST-RR-3	OST-933-16
/SW-85	G-190262 (1)	D-7	· C ·	- Act	0:375	ск	SA	N	·c	0	-~N/A	N	Ň	FF	R	IST-RR-3	OST-933-19
/SW-86	G-190262 (1)	D-7	C C	Act	0.375	ск	SA-	N	C	0	~~ N/A	N	N	FF	R	IST-RR-3	OST-933-17
/SW-87	G-190262 (1)	. D-7	C .	Act	0.375	ск			C	0	N/A	N	N	FF	R	IST-RR-3	OST-933-18
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Attachment 10.6 Page 43 of 97 Valve Table																		
Valve Number	P&ID (SHT) Remarks		Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos		App J Type C				Test Deferral	Surveillance Test
/SW-88 -	G-190262 (1)	-	C-7	- · Ċ	- Act	0.75 -	СК	SA	Ń	C	0	N/A	N	N	FF	R	IST-RR-3	OST-933-20
/SW-89	G-190262 (1)		C-7	c	Act	0.375	СК	SA	N	<b>C</b>	- 0	~~N/A	N	N	FF	R	IST-RR-3	OST-933-24
SW-90	G-190262 (1)		· C-7	- C	Act	0.375	СК	SA	N	c	0	N/A	N <sup>-</sup>	N	FF	<sup>•</sup> R	IST-RR-3	OST-933-21
SW-91	G-190262 (1)		C-7	- C	Act	0.375	СК	SA	N	С	0	N/A	N · · ·	N	FF	R	IST-RR-3	OST-933-23
SW-92	G-190262 (1)		· B-7	C	Act	0.375	СК	SA	N	c	0	N/A <sup>-</sup>	N	Ň	FF "	R	IST-RR-3	OST-933-22
SW-93	G-190262 (1)	<u> </u>	F-7 -	C -	Act	0.375	CK-	······SA	N	c	0	N/A	- N ~	<u></u> N	FF.	R	iST-RR-3	OST-933-25
/SW-94	G-190262 (1)		F-7	- C	Act	0.375	• •••	SA	N	- C	.0.	N/A	N	<u>N</u>	FF _	R	IST-RR-3	OST-933-26
; 	19 Ès.		· · ·	, 	· · ·	· ·				· .						··		

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			÷		-	Pa	tachm ge 44 /alve	of 9	7			~ "'					
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C			Test Freq	Test Deferral	Surveillance Test
IVSW-95 · · ·	G-190262 (1)	F-7	С	Act	0.375	CK ·	··SA ·	Ň	C	0	N/A	N	Ň	FF	R	IST-RR-3	OST-933-27
IVSW-96	G-190262 (1)	G-7 · · ·	C ·	Act -	0.375	СК	SA	Ň	C	0	N/A	N	N	·FF	· R	IST-RR-3	OST-933-28
IVSW-97 ~	G-190262 (1)	G-7	с	Act	0.375	СК	SA	N	с	·O ·	N/A	N	N.	FF		IST-RR-3	OST-933-29
IVSW-99	G-190262 (1)	G-2	c	Act	.25	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
·	AUG	•	-			<b></b> '	• •							•	÷.		
LCV-115B	5379-685 (2)	C-5	В	Act	4	BF	AO	N	с	0	С	N	Y	FS FC TM (O)	Q Q Q		OST-102 OST-102 OST-102
*•• • • • • • •		· · · · · ·												PI	Bi		OST-111
LCV-115C	5379-685 (2) Full stroke exercise and stroke ti	D-5 ne measurement a	A are augme	Act ented tests	4	GA	MO	N	0	С	AI	N	Y	FS TM (C) PI	R R Bi	CVC-VRS-1 CVC-VRS-1	OST-703-5 OST-703-5 OST-703-5
	· · · · ·	یند. است است ا ش		~ · . ··	·		. IL			-				LK	Bi	~	OST-109
MOV-350	5379-685 (2) Full stroke exercise and stroke th	B-2 ne measurement a	B are augmo	Act ented tests	2	GA	MO	N-	• C	. 0	AI	N 	Y	FS TM (O) Pl	Q Q Bi		OST-102 OST-102 OST-111

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Attachment 10.6 Page 45 of 97 Valve Table														·					
Valve Number		P&ID (SHT) Remarks	-	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	Ap <u>p</u> J Type C		Test Type		Test Deferral	Surveillance Test
MS-261A		G-190196 (1)	,	C-4	С	Act	26	ск	SA	N	0	с	N/A	N	N	ov	App. II		DELETED EST-152 PM-314
			· .	ι · · ·			1			4.						RF	App. II	·	DELETED PM-314
MS-261B		G-190196 (1)		E-4	с	Act	26	СК	SA	Ň	0	с	N/A	N	N	ov	App. II		DELETED EST-152 PM-314
	<b>_</b> .	• .		• ••	•	-										RF	App. 11		DELETED PM-314
MS-261C		G-190196 (1)		G-4	с	Act	26	СК	SA -,	N	0	с	N/A	N	N	ov	App. II		DELETED EST-152 PM-314
	<u> </u>											24				RF	App. II		DELETED PM-314
MS-262A	<u></u>	G-190196 (1)		C-5	8	Act	2	GA	M	N	LO	O/C	N/A	N	N	FS	BI	<del>.</del>	
		0.400400.(4)		E-5					<u>.</u>										007 704 0
4S-262B		G-190196 (1)		E-0	Β.	Act	2	GA	M	N	-LO	``O/C	N/A	- N	N ·	FS	Bi		OST-701-6
AS-262C	· · · · · ·	G-190196 (1)		.G-5	в	Act	2	GA	M	N	LO	· O/C	N/A	N	N	FS	Bi	····	OST-701-6
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RNP2 Fifth IST Plan

						Pa	tachm ge 46 Valve	of 9	7								
Valve	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos				Test Type		Test Deferral	Surveillance Test
MS-263A	G-190196 (1)	C-5	С	Act	2	СК	SA	N	с	O/C	N/A	N	N	FF	App. II		CM-142 OST-202 OST-206 PM-311
·	. <b></b>													RF	App. II		CM-142 PM-311
MS-263B	G-190196 (1)	D-5	с	Act	2	СК	SA	N	с	O/C	N/A	N	Ň	FF	App. If		CM-142 OST-202 OST-206 PM-311
	<b></b>	, .* 			-									RF	App. II		CM-142 PM-311
MS-263C	G-190196 (1)	F-5	с	Act	2	СК	SA	N	С	O/C	N/A	N	N	FF	Арр. II		CM-142 OST-202 OST-206 PM-311
·	· · · · · · · · · · · · · · · · · · ·	·												RF	App. II		CM-142 PM-311
MS-353A	G-190196 (1)	C-4	в	Pass	2	GA	мо	N	С	с	AI	N	Y	PI	Bi		GP-002
	•		······			-				<b>.</b>	,a						
MS-353B	G-190196 (1)	E-4	В	Pass	2	GA	мо	N	с	с	AI	N	Y	PI	Bi		GP-002
	, <b>.</b>	5- 							<b>.</b> .								
MS-353C	G-190196 (1)	F-4	B	Pass	2	GA	мо	N	C	:C	Al	N	Y	. Pl	Bi		GP-002
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### Attachment 10.6 Page 47 of 97 Valve Table

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	Rap Act		Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
MS-V1-3A	G-190196 (1)	C-4	в	Act	26	SCK	AO	N	0	с	с	N	Y	FS	CS	MS-VCS-2	OST-702-1
														FC	CS	MS-VCS-2	OST-702-1
· · · · · ·														TM (C)	CS	MS-VCS-2	OST-702-1
					-									Pl	Bi		OST-702-1
S-V1-3B	G-190196 (1)	E-4	В	Act	26	SCK	AO	N	0	с	с	N	Y	FS	CS	MS-VCS-2	OST-702-1
	-			;		-								FC	cs	MS-VCS-2	OST-702-1
														TM (C)	CS	MS-VCS-2	OST-702-1
														PI	Bi		OST-702-1
S-V1-3C	G-190196 (1)	G-4	В	Act	26	SCK	AO	N	0	с	c	N	Y	FS	cs	MS-VCS-2	OST-702-1
														FC	cs	MS-VCS-2	OST-702-1
									-	•				TM (C)	CS	MS-VCS-2	OST-702-1
														PI	Bi		OST-702-1
NS-V1-8A	G-190196 (1)	B-4	В	Act	2	GA	MO	N	с	0	AI	N	Y	FS	Q		OST-202 OST-206
	GL 89-10, GL 96-05													TM (O)	Q		OST-202 OST-206
	·	а <u>.</u> , ,						÷.	-	• •		·		PI	Bi		OST-206
S-V1-8B	G-190196 (1)	D-4	в	Act	2	GA	мо	N	с	0	AI	N	Y	FS	Q		OST-202 OST-206
	GL 89-10, GL 96-05													TM (O)	Q		OST-202 OST-206
														PI	0		OST-206 .
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	·					· -	•	• ~					PI	Bi		051-206

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		n an		<u>.</u>		Pag	tachn ge 48 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С				Test Deferral	Surveillance Test
MS-V1-8C	G-190196 (1)	- · F-4 -	B ~ ,	Act	2 ·	GA	~MO	N	- c	<sup>-</sup> 0	AI	Ň	Y	F\$	Q	<u> </u>	OST-202 OST-206
	GL 89-10, GL 96-05													TM (O)	Q		OST-202 OST-206
														PI	Bi		OST-206
	······································														•		· · ·
OPP-10	G-190200 (9)	C-5	с	Act	0.5	СК	SA	N	O/C	c	N/A	N	N	RF	R		O\$T-930
	AUG													FF	R		OST-930
				·- · · ·				•									
OPP-12	G-190200 (9)	C-6	С	Act	0.75	RV	SA	N	с	0	N/A	N	N	RL.	App. I		EST-112
	AUG																
n an		. n	_` ·				· -		-								
OPP-13	G-190200 (9)	D-6	С	Act	0.75	RV	SA	N	С	0	N/A	N	N	RL	App. I		EST-112
	AUG																
. :	× . 	· · · ·	• • •				đ										
OPP-14	G-190200 (9)	C-4	с	Act	0.5	СК	SA	N	С	0	N/A	N	N	FF	R		OST-930
	AUG																
·			. 7		~		.``			÷.	÷		•				
OPP-15	G-190200 (9)	D-4	С	Act	0.5	СК	SA	N	С	0	N/A	N	N	FF	R	··· · · · · · · · · · · · · · · · · ·	OST-930
	AUG																
· · · ·	· · · · · · · · · · · · · · · · · · ·			• •	·				•								
OPP-16	G-190200 (9)	C-4	C	Act	0.5	RV	SA	N	C	·Ο.	N/A	N	N	RL	App. I	· •	EST-112
	AUG	, <b>.</b>		•.					يەت ي م	- '							• • •
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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C				Test Deferral	Surveillance Test
OPP-17	G-190200 (9) AUG	D-4	с	Act	0.5	RV	SA	N	c	0	N/A	N	N	RL	App. I		EST-112
 			· · · · ····	·	·					<b>.</b>							ъ
OPP-32	G-190200 (9) AUG	D-4	с	Act	0.25	RV	SA	N	С	0	N/A	N	N	FV	R		OP-006
		 				,". ~	• •	:	· • •								N 1997 - 199
OPP-33	G-190200 (9) AUG	D-5	с	Act	0.25	RV	SA	N	C	0	N/A	N	N	FV	R		OP-006
		· • ··			۰.	•					-						
OPP-7	G-190200 (9) AUG	D-4	С	Act	0.75	СК	SA	N	0	С	N/A	N	N	RF	R		OST-930
					-												
OPP-8	G-190200 (9) AUG	C-4	c	Act	0.75	СК	SA	N	0	С	N/A	N	N	RF	R		OST-930
	· · · · · · · · · · · ·	, we as no .			•						•						
OPP-9	G-190200 (9) AUG	D-5	С	Act	0.5	СК	SA	N	O/C	С	N/A	N	N	RF FF	R		OST-930 OST-930
PAS-1	.HBR2-6490 (1)		A	Pass	0.375	GL	M	N	LC	C	N/A	Y-	N		App. J		EST-046
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# Attachment 10.6 Page 50 of 97 Valve Table

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Valve	P&ID (SHT)	_ ·	_	Act		Valve	Act	Rap	Norm	Safe	Fail	App J	Pos	Test	Test	Test	Surveillanc
Number	Remarks	Coord	Cat	Pass	Size	Туре	Туре	Act	Pos	Pos	Pos	Туре С	Ind	Туре	Freq	Deferral	Test
PAS-2	HBR2-6490 (1)	B-6	A ·	Pass	0.375	GL	M	N	LC	с	N/A	Y	~~ N ·	Ü	App. J		EST-046
														FS AUG	Bi		EST-046
																,	
PAS-3	HBR2-6490 (1)	D-6	-·A ·	· Pass	0.375 -	GL	м	N	LC	С	~N/A	Y	N <sup></sup>	LJ	App. J		EST-046
														FS AUG	Bi		EST-046
PAS-4	HBR2-6490 (1)		A	··· Pass	0.375	GL	- ~ M	N ·	LC.	C .	N/A	Y	N	LJ	App. J		EST-046
			~	1 400	0.070					Ĵ.				FS AUG			EST-046
PAS-5	···· HBR2-6490 (1)	E-6	A	Pass	0.375	 GL	M	N ·	LC	·C	N/A	Y	·N -	LJ	App. J		EST-046
														FS AUG	Bi		EST-046
																·	
PAS-6	- HBR2-6490 (1)	··· D-6	· A	~ Pass	0.375	GL	м	· N ·	LC	С	N/A	Υ.	N	LJ FS AUG	App. J Bi		EST-046 EST-046
														13,400	Ы		201-040
PAV-31	HBR2-6933 (1)	D-7	- B	Act	- 0.375	GL	M	N	ĿC	0	N/A	N	N	FS	Bi		OST-703-7
PAV-32		. D-6	В.	Act	0.375	GL	Μ	N	LC	, O	. N/A	N	Ň	FS	Bi		· OST-703-7
	AUG	v					2	ŝ									
			·			•			1			-				• •	
							<u>.</u>		- 'e	• •						••	

						Pa	tachn ge 51 Valve	of 9	7							· ·	
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos		App J Type C				Test Deferral	Surveillance Test
PAV-33	HBR2-6933 (1)	· · <b>B-</b> 7 ·	B	Act	0.375	GL	М	N	LC	· · 0	∵Ñ/A	N	N	FS	Bi		OST-703-7
PAV-34	HBR2-6933 (1) AUG	· 8-6	· B ·	· Act	0.375	GL	M	N	LC	0	N/A	N	N	FS	Bi		OST-703-7
PAV-35	HBR2-6933 (1)	D-7 · · · · ·	B	Act ·	0.375	GL	M	N	ŁC	0	N/A	N	N	FS	Bi		OST-703-7
PAV-36 · · · · · ·	HBR2-6933 (1)	D-6	 - В	Act -	0.375	GL	M	N	LC	0	N/A	N	N	FS	Bi	<u>.</u>	OST-703-7
	HBR2-6933 (1)	B-7 -	8	- Act	0.375 -	- GL ·	M <sup></sup>	·· N	LC	0	· N/A	N	Ń	FS	Bi		OST-703-7
PAV-38-	11BR2-6933 (1)	B-6	- <u>8</u>	··Act	0.375	GL	M -	N	LC	0 ·	N/A	N.	N	FS	Bi	<u>.</u>	OST-703-7
PCV-1716	. G-190200 (2)		A	Act	2	GL .	AO	N	0	c	<b>C</b> .	Y	· Y	FS FC	R	IA-VRS-1 IA-VRS-1	OST-703-8 OST-703-8
· ·	·	, ; 	• •					 	et. T	•	-			TM (C) Pl LJ	R Bi App. J	IA-VRS-1	OST-703-8 OST-703-8 EST-062

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С				Test Deferral	Surveillance Test
CV-1922A	G-190262 (1)	E-5	В	Act	0.375	GA	AŎ	Y	·· C ·	0	0	N	۰Y	FS	CS		OST-703-6
	AUG													FO	CS		OST-703-6
														TM (O)	CS		OST-703-6
														PI	Bi		OST-703-6
· · · ·			. <u>.</u> .	:								· ·					
CV-1922B	G-190262 (1)	D-5	В	Act	0.375	GA	AO	Y	С	0	0	N	Y	FS	CS		OST-703-6
	AUG													FO	CS		OST-703-6
	.* . N													TM (O)	CS		OST-703-6
	· · · · ·	÷			• ~	•						wit-		PI	Bi		OST-703-6
CV-455C	5379-1971 (2)	F-2	В	Act	3	GL	AO	N	с	0/0	с	N	Y	FS	CS	RCS-VCS-1	OP-006 OST-930
e *	GL-90-06		Hav is			.÷.,		• 1°	ĩ					FC	cs	RCS-VCS-1	OP-006 OST-930
														TM (O)	cs	RCS-VCS-1	OP-006 OST-930
								,						TM (C)	CS	RCS-VCS-1	OP-006 OST-930
	- A	•.•			.11 <sup>°</sup> 111	-								PI	Bi		OST-930
PCV-456	5379-1971 (2)	F-2	B	Act	3	GL	AO	N	С	O/C	С	N	Y	FS	cs	RCS-VCS-1	OP-006 OST-930
· · · · ·	GL-90-06								Ξ.			<i></i>		FC	cs	RCS-VCS-1	OP-006 OST-930
														TM (O)	CS	RCS-VCS-1	OP-006 OST-930
														TM (C)	CS	RCS-VCS-1	OP-006 OST-930
	· · · · · ·					•					-			Pl	Bi		OST-930
PP-274D	G-190261 (2)	C-4	A	Pass	0.375	GL	M	N	С	~ `C`	N/A	Ý	N	ĽJ	App. J		EST-138
 	· · ·	, . 		· · ·		- '	••••			• • •				• • •	· · ·		. <b>.</b>
		<u>-</u>						4									
						÷			- ·								

T) Con C-4 G-6 G-6		Cat A A	Act Pass Pass	0.375	Valve Type GL		Act N	Norm Pos	Safe - Pos	Fail Poš N/A	App J Type C		Test Type		Test Deferral	Surveillance Test EST-138
G-6			Pass					с	с	N/A	Y	N	LJ	Арр. Ј		EST-138
<sup>.</sup> :		<b>A</b>		0.375	GL	AO										
			· · · ·				Y	С	с	с	Y	Y	PI LJ	Bi App. J		OST-707-1 OST-933-11
G-6					•						• •				· .	·· · · ·
		A	Pass	0.375	GL	AO	N	с	с	с	Y	Y	PI LJ	Bi App. J		OST-707-1 OST-933-11
F-6		A	Pass	0.375	GL	AO	N	с	с	с	Ŷ	Y	PI	Bi		OST-707-1
			· .	<b></b> .					1 n				IJ	App. J	<b>1</b> 11	OST-933-12
F-6		A	Pass	0.375	GL	AO	Y	С	c	С	Ŷ	Y	PI LJ	Bi App. J		OST-707-1 OST-933-12
· • •			• · • ·	<b>-</b> .										· •		
E-6		A	Pass	0.375	GL	AO	Y	С	С	c	Y	Ŷ	PI LJ	Bi App. J		OST-707-1 OST-933-13
																· .
E-6		A	Pass	0.375	GL 	<b>AO</b>	<b>N</b>	с 	C	C -	Y	• ¥	PI LJ	Bi App. J		OST-707-1 OST-933-13
	F.6	- E-6	Es a	E-6 A Pass	E-6 A Pass 0.375	E-6 A Pass 0.375 GL	E-6 A Pass 0.375 GL AO	E-6 A Pass 0.375 GL AO N	E-6 A Pass 0.375 GL AO N C	E-6 A Pass 0.375 GL AO N C C	E-6 A Pass 0.375 GL AO N C C C	E-6 A Pass 0.375 GL AO N C C C Y	E-6 A Pass 0.375 GL AO N C C C Y Y	E-6 A Pass 0.375 GL AO Y C C C Y Y PI LJ	E-6 A Pass 0.375 GL AO Y C C C Y Y PI Bi LJ App. J E-6 A Pass 0.375 GL AO N C C C Y Y PI Bi LJ App. J	E-6 A Pass 0.375 GL AO Y C C C Y Y PI BI LJ App. J E-6 A Pass 0.375 GL AO N C C C Y Y PI Bi LJ App. J

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C			Test Freq	Test Deferral	Surveillance Test
PS-956G	5379-353 (1)	E-6	A	Pass	0.375	GL	AO	Y	С	C	С	Y	Y	PI LJ	Bi App. J		OST-707-1 OST-933-29
PS-956H	5379-353 (1)	E-6	A	Pass	0.375	GL	AO	N	c	c	C	Ŷ	Y	PI LJ .	Bi App. J		OST-707-1 OST-933-29
<b>2</b> 8-959	5379-353 (1)	D-7	B	Pass	0.375	GL	<b>AO</b>	N 	С	С	с	N	Y	PI	Bi		OST-707-1
RC-516	5379-1971 (2)	G-8	A	Act	0.375	GL	A0	N	0/C	С	c	Y	Y	FS FC TM (C) Pt LJ	Q Q Q Bi App. J		OST-701-5 OST-701-5 OST-701-5 OST-707-5 OST-933-14
RC-518	5379-1971 (2)	F-7	A/C	Act	0.75	CK	SA	N	C	¢	N/A	Y	<u>N</u>	OV LJ RF	App. II App. J App. II		CM-143 PM-312 EST-060 EST-060
RC-519A	5379-1971 (2)	F-8	A	Act	3	DA	AO	N	O/C	с	<b>C</b>	Y ~	Y .	FS FC TM (C) PI LJ	Q Q Bi Ápp. J		OST-701-5 OST-701-5 OST-701-5 OST-707-5 OST-933-15

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						Pa	ge 55 Valve	of 9	7						u		
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C				Test Deferral	Surveillance Test
RC-519B	5379-1971 (2)	F-8	A	Act	3	DA	AO	N	O/C	с	С	Y	Y	FS	Q		OST-701-5
		•											·	FC	Q	-	OST-701-5
														TM (C)	Q		OST-701-5
														PI	Bi		OST-707-5
														LJ	App. J		OST-933-15
C-535	5379-1971 (2)	F-2	в	Act	~3	GA	MO	N	0	с	AI	N	Ŷ	FS	Q		OST-701-5
	GL 89-10, GL 96-05								, ,					TM (C)	Q		OST-701-5
														PI	Bi		OST-707-5
RC-536	5379-1971 (2)	F-2	В	Act	3	GA	мо	N	0	c	AI	N	Ŷ	FS	Q		OST-701-5
	GL 89-10, GL 96-05	۰.												TM (C)	Q		OST-701-5
• • • •	, <u>, , , .</u> .	•••		• •										PI	Bi		OST-707-5
RC-550	5379-1971 (2)	F-7	Α	Act	0.75	DA	AO	N	O/C	c	С	Y	Y	FS	Q		OST-701-5
	- · · · · · · · · · · ·	· ··· ·	· · ·			-		•			•			⊶ FC·	Q		OST-701-5
														TM (C)	Q		OST-701-5
														PI	Bi		OST-707-5
														LJ	App. J		EST-060
	and the second		· -	. •												•	· ·
IC-551A	5379-1971 (2)	G-2	c	Act	4	RV	SA	N	С	O/C	N/A	N	N	RL	Арр, І		EST-027
,				••	.2	•											
RC-551B	5379-1971 (2)	G-3	С	Act	4	RV	SA	N	С	O/C	N/A	N	N	RL	App. I	······	EST-027

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RC-551B	5379-1971 (2)	G-3	C	Act	4	RV	SA	N	С	0/C	N/A	N	N	RL	App. I		EST-027
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# Attachment 10.6 Page 56 of 97 Valve Table

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Vaive Number	P&ID (SHT)	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
	Remarks					.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
C-551C	5379-1971 (2)	G-4	с	Act	4	RV	SA	N	С	O/C	N/A	N	N	RL	App. I		EST-027
· · · · ·	·									-							· · · <sup>/</sup>
C-553	5379-1971 (2)	G-8	A	Act	0.375	GL	AO	N	O/C	с	с	Ŷ	Y	FS	Q		OST-701-5
														FC	Q		OST-701-5
		- ·				. 1								TM (C)	Q	بيني .	OST-701-5
														PI	Bi		OST-707-5
														IJ	App. J		OST-933-14
C-567	5379-1971 (1)	D-3	B	Act	1	GL	SO	Y	С	0	с	N	Y	FS	CS	RCS-VCS-2	OST-703-3
														PI	Bi		GP-001
														TM (O)	cs	RCS-VCS-2	OST-703-3
														FC	CS	RCS-VCS-2	OST-703-3
	•			<b>.</b>	<b>.</b> .									-			
C-568	5379-1971 (1)	C-3	В	Act	1	GL	so	Y	с	0	с	N	Y	FS	ĊS	RCS-VCS-2	OST-703-3
														PI	Bi		GP-001
														TM (O)	cs	RCS-VCS-2	O\$T-703-3
														FC	cs	RCS-VCS-2	OST-703-3
· • • • • •	····			· · · ·				~	• •••								
C-569	5379-1971 (1)	C-3	в	Act	1	GL	so	Y	с	0	С	N	Y	FS	cs	RCS-VCS-2	OST-703-3
														PI	Bi		GP-001
														тм (О)	cs	RCS-VCS-2	OST-703-3
														FC	CS	RCS-VCS-2	OST-703-3
	· · · · · ·									· · ·						•	
RC-570	5379-1971 (1)	C-3	В	Act	1	GL	SO	Y	С	<u>;</u> 0	С	N	Y	- FS	CS	RCS-VCS-2	OST-703-3
	· · · · · · · ·									ς.				PI	Bi		GP-001
			• •	• ••			~ ~ · · ·			·· ··	. •	-		TM (O)	CS	RCS-VCS-2	OST-703-3
							н Л.							FC	CS	RCS-VCS-2	OST-703-3
						•	· · · · · · · · ·										

# Attachment 10.6 Page 57 of 97 Valve Table

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos		Fail Pos	Арр Ј Туре С		Test Type	_	Test Deferral	Surveillanc Test
RC-571	5379-1971 (1)	D-2	в	Act	1	GL	so	Y	с	0	С	N	Y	FS	CS	RCS-VCS-2	OST-703-3
														Pi	Bi		GP-001
														TM (O)	CS	RCS-VCS-2	OST-703-3
														FC	cs	RCS-VCS-2	OST-703-3
		· -		·· -·													· · ·
RC-572	5379-1971 (1)	D-1	В	Act	1	GL	so	Y	с	0	с	N	Y	FS	CS	RCS-VCS-2	OST-703-3
														PI	Bi		GP-001
														TM (O)	cs	RCS-VCS-2	OST-703-3
														FC	cs	RCS-VCS-2	OST-703-3
· ·	<u>.</u>						•										
RHR-706	5379-1484 (1)	B-8	с	Act	2	RV	SA	N	с	O/C	N/A	N	N	RL	App. I		EST-112
HR-743	5379-1484 (1)	C-7	в	Act	2	GL	M	N	LC	С	N/A	N	N	FS	Bi	<u></u>	OST-253
																	-
RHR-744A	5379-1484 (1)	B-8	в	Act	10	GA	мо	N	С	0	AI	N	Y	FS	Q		OST-252-1
·• ·	GL 89-10, GL 96-05						-							TM (O)	Q		OST-252-1
														PI	Bi		OST-258-1
RHR-744B	5379-1484 (1)	B-8	В	Act	10	GA	MO	N	С	0	AI	N -	Y	FS	Q		OST-252-2
· · · · · ·	GL 89-10, GL 96-05	·				10 	+		·					TM (O)	Q		OST-252-2
					-	-		· · · ·						PI	Bi		OST-258-2
	and the second	· .	••			, <b>3</b>	-				•	•					
<u> </u>	· · ·		· ·	<u> </u>	•		•		2.5		. *			-			
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# Attachment 10.6 Page 58 of 97 Valve Table

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type		Test Deferral	Surveillance Test
	5379-1484 (1)	B-2	В	Act	14	GA	мо	N	с	0/C	AI	N	Y	FS	R	RHR-VRS-1	OST-257
	.GL 89-10, GL 96-05													TM (O)	R	RHR-VRS-1	OST-257
									-					TM (C)	R	RHR-VRS-1	OST-257
														PI	Bi		OST-257
:HR-751	5379-1484 (1)	B-2	В	Act	14	GA	MO	N	C	0/C	AI	N	Y	FS	R	RHR-VRS-1	OST-257
	GL 89-10, GL 96-05													TM (O)	R	RHR-VRS-1	OST-257
														TM (C)	R	RHR-VRS-1	OST-257
														PI	Bi		OST-257
HR-752A	5379-1484 (1)	D-3	В	Act	14	GA	мо	N	0	0/C	AI	N	Y	FS	Q		OST-252-1
	GL 89-10, GL 96-05													TM (C)	Q		OST-252-1
														PI	Bi		OST-258-1
HR-752B	5379-1484 (1)	F-3	В	Act	14	GA	мо	N	0	O/C	AI	N		FS	Q		OST-252-2
	GL 89-10, GL 96-05					04			÷					тм (С) -			OST-252-2
	GE 85-10, GE 30-03	•												PI	Bi		OST-252-2
															2,		
RHR-753A	5379-1484 (1)	D-5	C	Act	10	ск	SA	. N	C	O/C	N/A	N	N _	FF	App. <u>I</u> I		CM-130 OST-253 PM-300
														RF	App. II		CM-130 OST-253 PM-300
	5.0 		· ·			· ·				-							
RHR-753B	5379-1484 (1)	F-5	, c	Act	10	СК	SA	_ N	· C	O/C	N/A	N	N	FF •	App. II		CM-130 OST-253 PM-300
		· · · · ·				•						900 V		RF	App. II	·• -	CM-130 OST-253 PM-300

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							ge 59										
							Valve										
Valve				Act		Valve			Norm	Safa	Fail	App J	Bos	Tost	Test	Test	Surveillance
Number	P&ID (SHT) Remarks	Coord	Cat	Pass	Size			-	Pos			Арр 5 Туре С			Freq	Deferral	Test
	5379-1484 (1)	E-5	В	Act	10	GA	м	N	LC	С	 N/A	N	N	FS	Bi		OST-253
RHR-757D	5379-1484 (1)	F <sub>2</sub> 5	B	Act	10	GA	M	N	LC	C	N/A	N	N	FS	Bi		OST-253
RHR-759A	5379-1484 (1)	D-7	в	Act	10	GA	мо	N	0	O/C	AI	N	Y	FS	Q		OST-252-1
1. <b>*</b> 1	GL 89-10, GL 96-05						a 1460 - C							TM (O)	Q		OST-252-1
														TM (C)	Q		OST-252-1
														PI	Bi		OST-258-1
HR-759B	5379-1484 (1)	F-7	B	Act	10	GA	MO	N	<u> </u>	O/C	ĄĮ	N	<u> </u>	FS	Q		CST-252-2
	GL 89-10, GL 96-05													TM (O)	Q		OST-252-2
														TM (C)	Q		OST-252-2
														Pl	Bi		OST-258-2
HR-760	5379-1484 (1)	E-7	B	Act	2	GL	M	N	LC	с	N/A	N	<u>N</u> .	FS	Bi		OST-253
HR-782	5379-1484 (1)	D-7	С	Act	10	СК	SA	N	С	O/C	N/A	N	N	FF	App. II		OST-253 PM-129
- , ,		• • •							_ ·		•. • •	-		RF .	App. II	:	OST-251-2 OST-253 PM-129
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RNP2 Fifth IST Plan

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Valve Number ···	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		Rap Act		Safe Pos	Fail Pos	Арр Ј Туре С	Pos Ind	Test Type		Test Deferral	Surveillance Test
RHR-783	5379-1484 (1)	F-7	с	Act	10	ск	SA	N	с	O/C	N/A	N	N	FF	App. II		OST-253 PM-129
·		,									••			RF	App. II		OST-251-1 OST-253 PM-129
RMS-1	0.400004.(4)							Ň				Y		FS	Q		OST-701-11
	G-190304 (1)	C-2	A .	Act	1	GL	AO	N .	.0	С ,		Ŷ	Y	FC	Q		OST-701-11
														гс тм (С)	Q		OST-701-11
														PI	Bi		OST-707-11
														LJ	App. J		EST-137-3
	.4	,								<i></i> .				20	ripp: 0		201110110
RMS-2	G-190304 (1)	C-2	A	Act	1	GL	AO	N	0		C	Y		FS	Q		OST-701-11
		02		7.01	•	01			•	•	-		•	FC	Q		OST-701-11
														TM (C)	Q		OST-701-11
														PI	Bi		OST-707-11
		(		-			- `.	<u> </u>						LJ.	App. J		EST-137-3
RMS-3	G-190304 (1)	C-2	A	Act	1	GL	AO	N	0	С	С	Y	Y	FS	<u>q</u>		OST-701-11
														FC	Q		OST-701-11
														TM (C)	Q		OST-701-11
					•									PI	Bi		OST-707-11
														LJ	App. J		EST-137-2
																	· .
	G-190304 (1)	C-2	A	Act	1	GL	AO	N	0	С	С	Y	Y	FS	Q		OST-701-11
					2	?					$\phi$			FC	Q		OST-701-11
	· · · · · · · · ·	س و بر بر د د معام مرود در د								• • • • • • •				TM (C)	Q		OST-701-11
4				••				31						PI	Bi	-	OST-707-11
						. •	· ·		.*	-				LJ	App. J		EST-137-2
	مین در در مانی در در		ю и	*					· - ·								

		<b></b> .		· ·		Pa	tachn ge 61 Valve	of 9	7		····						
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
RV1-1	G-190196 (1)	C-6	В	Pass	8	GL	AO	N	с	с	с	N	Y	FS AUG	CS		OST-702-5
	· · · · ·	· _ · · ·												FC AUG	CS		OST-702-5
														PI	Bi		OST-702-5
RV1-2	G-190196 (1)	E-6	В	Pass	8	GL	AO	N	С	С	с	N	Y	FS AUG	CS		OST-702-5
														FC AUG	CS		OST-702-5
								,		-				PI	Bi		OST-702-5
<b></b>	· · <sup>*</sup> · <sup>*</sup> · · · · · · · · · · · · · · · · · · ·							·	4	-	•		-				
	G-190196 (1)	G-6	в	Pass	8	GL	AO	N	с	с	c	N	Ŷ	FS AUG	cs		OST-702-5
														FC AUG	cs		OST-702-5
														PI	Ві		OST-702-5
	·	· · ·			a								••				• ·
SA-42	G-190200 (3)	D-5	В	Act	2	DA	М	N	LĊ	0	N/A	N	N	FS	Bi		OST-703-7
	AUG																
 SA-43	G-190200 (3)	D-5	A	Act	2	DA	м	N	LC	O/C	N/A	Y	N	FS	Bi		OST-703-7
	· · · · ·		-										• •	IJ	App. J	· ••	EST-137-4
SA-44	G-190200 (3)	D-5	Α	Act	2	DA	м	N	LC	O/C	N/A	Y	N	FS	Bi		OST-703-7
	÷ *													ĹJ	App. J		EST-137-4
										ī., .							
SA-80	G-190200 (3)	D-5	۰ <b>C</b> -۰۰	Act	2	СК	SA	N	С	Ó	N/A	N	N	ov	Bi	, , ,	OST-703-7
	AUG		r · · •••	·. 	••			· .	 	•• •	· •· .	**					
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RNP2 Fifth IST Plan

· · · ·	· · · · · · · · · · · · · · · · · · ·		<u> </u>				ge 62 Valve					-					
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-		Safe Pos		App J Type C				Test Deferral	Surveillance Test
SDN-13	HBR2-8606 (2) AUG	F-3	- В	Act	0.5	GL	М	N ·	··· C	0	N/A	Y	N	FS AUG	Bi ·		OST-906
SDN-28	HBR2-8606 (2)	F-4 · · · · ·	В	Act	· 1	GL	м	N	LC	0	N/A	N	N	FS AUG	Bi		OST-906
SDN-29	HBR2-8606 (2)	F-4	В	Pass	.75	GL	M *Ç	N	L0	C	N/A	N .	N	FS AUG			OST-906
SI-844A	5379-1082 (3)	C-2	В	Pass	8	GA	MO	N	0	0	AI	N	Y	PI	Bi		OST-352-3
S1-844B	5379-1082 (3)	E-2	В	Pass	8	GA	MO	N	0	0	AI	N	Ŷ	PI	Bi		OST-352-4
SI-845A	5379-1082 (3) GL 89-10, GL 96-05	F-6	B	Act	2	GL	MO	N	C	0	AI	<b>N</b>	Y	FS TM (O) PI	CS CS Bi	SI-VCS-1 SI-VCS-1	OST-703-1 OST-703-1 OST-703-1
SI-845B	5379-1082 (3) GL 89-10, GL 96-05	E-6	B.	Act	<u> </u>	GL	мо	N	C	· 0	Ai	N	Y -	FS TM (O) PI	CS CS Bi	SI-VCS-1 SI-VCS-1	OST-703-1 OST-703-1 OST-703-1

# Attachment 10.6 Page 62 of 97

						Pa	tachn ge 63 Valve	of- 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
SI-845C	5379-1082 (3)	F-6	В	Pass	2	GL	MO	N	0	0	AI	N	Y	PI	Bi		OST-703-1
	AUG GL 89-10, GL 96-05																
	5379-1082 (5)		<u> </u>	Act	 1	GL	AO	N	C	c	с	N		FS	CS	SI-VCS-6	OST-703-1
	(-)													FC	cs	SI-VCS-6	OST-703-1
														TM (C)	cs	SI-VCS-6	OST-703-1
	та т <sub>и</sub> .		,,. <sup>-</sup>	115. 	-			·				• • • •		PI 	Bi		OST-703-1
GI-851B	5379-1082 (5)	D-5	В	Act	1	GL	AO	Y	с	с	с	N	Y	FS	CS	SI-VCS-6	OST-703-1
														FC	cs	SI-VCS-6	OST-703-1
				r										TM (C)	CS	SI-VCS-6	OST-703-1
									·					PI	Bi		OST-703-1
6I-851C	5379-1082 (5)	B-5	В	Act	1	GL	AO	Y	с	с	с	N	Y	FS	CS	SI-VCS-6	OST-703-1
• •••••														FC	CS	SI-VCS-6	OST-703-1
														TM (C)	cs	SI-VCS-6	OST-703-1
														PI	Bi		OST-703-1
SI-853A	5379-1082 (5)	G-6	в	Pass	1	GL <sup>.</sup>	- AO	N	с	с	с	N N	Y	PI	Bi		OST-703-1
SI-853B	5379-1082 (5)	E-6	в	-Pass	1	GL	AO	N	C	c	. C	N	Y	Pl.	Bi		OST-703-1
a,						.•									•		•• • · · · · · ·
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						Pa	tachn ge 64 /alve	of 9	7	F-4							
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance
SI-853C	5379-1082 (5)	C-6	В	Pass	1	GL	AO	N	С	с	с	N	Y	PI	Bi		OST-703-1
															-		• • • •
SI-855	5379-1082 (5)	F-3	- A -	Act -	1- 1-	GL	AO	N	0	С	С	Ŷ	Y	FS	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
	••• * ·					<sup>1</sup>	<u> </u>	~			<b>n</b> 17			FC	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
														TM (C)	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
				s		ç /				. ·				PI	Bi	·	OST-151-4 OST-151-5
			-											IJ	App. J		EST-059
	5379-1082 (2)	E-3	A	Act	2	GL	AO	N	0	O/C	0	N	Y	FS	CS	SI-VCS-5	OST-703-1
	IN 91-056	. ·												FO	cs	SI-VCS-5	OST-703-1
<u> </u>	а <sup>с</sup> торита с на разватието на торита на селото на с Селото на селото на се		-			•						* *		TM (O)	cs	SI-VCS-5	OST-703-1
														TM (C)	CS	SI-VCS-5	OST-703-1
														PI	Bi		OST-703-1
														LK	Bi		EST-140
	a and a second		· · •				•	- •		***							• • •
SI-856B	5379-1082 (2)	E-3	А	Act	2	GL	AO	N	0	0/C	0	N	Y	FS	CS	SI-VCS-5	OST-703-1
	IN 91-056													FO	cs	SI-VCS-5	OST-703-1
														TM (O)	cs	SI-VCS-5	OST-703-1
-	· · · · · · · ·													TM (C)	cs	SI-VCS-5	OST-703-1
		· · · · ·	-			,								PI	Bi		OST-703-1
		21 <u>-</u>					- ''	•		:			i	LK	Bi	·:	EŜT-140
SI-857A	5379-1082 (1)	F-7	C.	Act	0.75	RV	SA	N	C -	0	N/A	N	N	RL	App. 1	-	EST-112
							• •		5.								

						Pa	tachn ge 65 Valve	of 9	7	-							
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
SI-857B	5379-1082 (4)	E-6	с	Act	0.75	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
	,														·		. •
	. • .	• •					•			. 4 .							
SI-858A	5379-1082 (5)	F-6	с	Act	1	RV	SA	N	с	0	N/A	N	N	RL	App. I	· ·	EST-112
SI-858B	5379-1082 (5)	E-6	с	Act	1	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
							· · ·	'			·						· ·
																	· ·. ·
SI-858C	5379-1082 (5)	C-6	С	Act	1	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
SI-859	5379-1082 (4)	F-8	с	Act	0.75	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
																	· · ·
SI-860A	5379-1082 (5)	C-2	B	Act	• 14	GA	мо	'n.	с	0	Al	N	Ŷ	FS	Q		OST-252-1
	GL 89-10, GL 96-05													TM (O)	Q		OST-252-1
														TM (C)	Q		OST-252-1
														PI	Bi		OST-258-1
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\$I-860B	5379-1082 (5)	B-2	В	Act	14	GA .	MO	Ņ	С	<u>_</u> 0 _	AL	N	Y	FS	يQ		OST-252-2
	GL 89-10, GL 96-05		. •		•			·				. ~		TM (O)	Q		OST-252-2
	· · · ·		• .			•••			· -			••		TM (C)	Q.		OST-252-2
							•	<u>.</u>	•					Pi	Bi		OST-258-2

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· · · · ·							ge 66 Valve					-			<u> </u>		
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
SI-861A	5379-1082 (5)	C-2	в	Act	14	GA	мо	N	с	0	AI	N	Y	FS	CS	SI-VCS-7	OST-703-2
· · · · · ·	GL 89-10, GL 96-05									·				TM (O)	CS	SI-VCS-7	OST-703-2 .
														TM (C)	cs	SI-VCS-7	OST-703-2
														PI	Bi		OST-703-2
SI-861B	5379-1082 (5)	B-2	В	Act	14	GA	мо	N	С	0	AI	N	Y	FS	CS	SI-VCS-7	OST-703-2
-	GL 89-10, GL 96-05			•	2									TM (O)	CS	SI-VCS-7	OST-703-2
														TM (C)	cs	SI-VCS-7	OST-703-2
														PI	Bi		OST-703-2
SI-862A	5379-1082 (2)	C-3	B	Act	14	GA	мо	N	0	O/C	AI	N	Y	FS	CS	SI-VCS-2	OST-703-2
	·GL 89-10, GL 96-05 .													TM (O)	cs	SI-VCS-2	ÓST-703-2
														TM (C)	cs	SI-VCS-2	OST-703-2
														ΡI	Bi		OST-703-2
SI-862B	5379-1082 (2)	C-3	В	Act	14	GA	МО	N	0	0/C	Al	N	Y	FS	CS	SI-VCS-2	OST-703-2
	GL 89-10, GL 96-05													TM (O)	cs	SI-VCS-2	OST-703-2
			*	··			•						-	. TM (C)	cs	SI-VCS-2	OST-703-2
														PI	Bi		OST-703-2
SI-863A	5379-1082 (2)	C-3	В	Act	8	GA	МО	N	LC	O/C	AI	N	Y	FS	cs	SI-VCS-3	OST-703-2
	GL 89-10, GL 96-05													TM (O)	CS	SI-VCS-3	OST-703-2
	· ·													TM (C)	CS	SI-VCS-3	OST-703-2
	· · · · · · · · · · · · · · · · · · ·			• • •			-	 	•	· 	 			Pl	Ві		OST-703-2
SI-863B	5379-1082 (2)	C-3	В	Act	8	GA	MO	N	LC	. O/C	AI	N N	<u>г</u> ,	FS	CS	SI-VCS-3	OST-703-2
	GL 89-10, GL 96-05		-		÷		-		· · · · · ·					TM (O)	CS	SI-VCS-3	OST-703-2
- /		·					. •	• •	• • •		•			TM (C)	cs	SI-VCS-3	OST-703-2
							.*	÷.						PI	Ві	01-100-0	OST-703-2
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# Attachment 10.6

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						Pa	tachn ge 67 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	·Coord	Cat	Act Pass	Size	Valve Type	Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type	Test Freq	Test Deferral	Surveillance Test
I-864A	5379-1082 (2)	E-4	A	Act	16	GA	MO	N	0	O/C	AI	N	Y	FS	 CS	SI-VCS-2	OST-703-1
	IN 91-56 GL 89-10, GL 96-05													TM (O)	CS	SI-VCS-2	OST-703-1
		.*.												TM (C)	CS	SI-VCS-2	OST-703-1
														PI	Bi		OST-703-1
														LK	Bi		EST-140
-864B	5379-1082 (2)	E-4	A	Act	16	GA	MO	N	0	0/C	AI	N	Y	FS	CS	SI-VCS-2	OST-703-1
	IN 91-56 GL 89-10, GL 96-05													TM (O)	CS	SI-VCS-2	OST-703-1
a i a ann ann ann				-	· · ·	· · · ·	- · - · ·			-				TM (C)	cs	SI-VCS-2	OST-703-1
														PI	Ві		OST-703-1
														LK	Bi		EST-140
-865A	5379-1082 (4)	F-2	В	Act	10	GA	мо	N	0	0/C	Al		Y	FS	CS	SI-VCS-3	OST-161
	Full stroke exercise and stroke time r	measurement a	re augme	nted tests										TM (O)	cs	SI-VCS-3	OST-161
														TM (C)	cs	SI-VCS-3	OST-161
														PI	Bi		OST-161
	5379-1082 (4)	D-2	в	Act	10	GA	мо	N	0	O/C	AI	N	Y	FS	CS	SI-VCS-3	OST-161
	Full stroke exercise and stroke time r	neasurement a	re augme	nted tests										TM (O)	cs	SI-VCS-3	OST-161
														TM (C)	cs	SI-VCS-3	OST-161
														Pi	Bi		OST-161
																	· . ·
-865C	5379-1082 (4)	C-2	В	Act	10	GA	мо	N	ō	O/C	AI	N	Y	FS	CS	SI-VCS-3	OST-161
	Full stroke exercise and stroke time r	measurement a	re augme	nted tests		-					-			TM (O)	CS	SI-VCS-3	OST-161
. , <sub>de</sub> e en e		-	-									.s .*		TM (C)	cs	SI-VCS-3	OST-161
	tič struč						•••					э.		PI	Bi		OST-161
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·						Pa	tachm ge 68 /alve	of 9	7									
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C			Test Freq	Te: Defe		Surveillance Test
SI-866A	5379-1082 (4)	D-7	В	Act	2	GL	мо	N	С	O/C	AI	N	Υ	FS	CS	SI-VC	S-3	OST-703-1
	GL 89-10, GL 96-05													TM (O)	CS	SI-VC	S-3	OST-703-1
														TM (C)	CS	SI-VC	S-3	OST-703-1
														PI	Ві			OST-703-1
in i serven	· · · · ·								<b></b>			u					·	
-866B	5379-1082 (4)	D-7	в	Act	2	GL	мо	N	с	O/C	Al	N	Y	FS	CS	SI-VC	S-3	OST-703-1
	GL 89-10, GL 96-05													TM (O)	CS	SI-VC	S-3	OST-703-1
														тм (С)	CS	SI-VC	S-3	OST-703-1
														PI	Bi			OST-703-1
I-867A	5379-1082 (1)	D-3	В	Pass	4	GA	мо	N	0	0	AI	N	Y	PI	Bi			OST-151-4 OST-151-5
	- <u>-</u>	: _				, 			<b>1</b>	'n								
I-867B	5379-1082 (1)	C-3	В	Pass	4	GA	мо	N	0	0	AI	N	Y	PI	Bi			OST-151-5 OST-151-6
																		. ·
I-868A	5379-1082 (1)	B-7	в	Pass	2	GA	M	N	0	0	AI	N	N	FS	Bi			OST-160
	AUG	-			-													
5I-868B	5379-1082 (1)	B-7	В	Pass	2	GA	M	N	0	0	AI	N	N	FS	Bi			OST-160
	AUG	2	_		-			•	÷									
	- · · · · · · · · · · · · · · · · · · ·			• •							•							· .
			÷ .	·				•	,									
I-868C	5379-1082 (1)	.B-7	"В	Pass	. 2	GA T	M	. <u>N</u>	0.	0,	AI	. N	N	FS	Bi	····		OST-160
	AUG																	

#### RNP2 Fifth IST Plan

	··			_		Pa	tachn ge 69 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	-	Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type	Test Freq	Test Deferral	Surveillance Test
I-869	5379-1082 (1)	F-8	В -	Act	3	ĢA	мо	N	c	O/C	AI	N	Y	FS	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
	GL 89-10, GL 96-05													TM (O)	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
	• •	· · · · - <i>.</i>	** *							·				тм (С)	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
														PI	Bi		OST-151-4 OST-151-5
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-870A	5379-1082 (1)	D-8	В	Act	3	GA	МО	N	С	O/C	AI	N	Y	FS	Q		OST-151-1 OST-151-2 OST-151-4 OST-151-5
	GL 89-10, GL 96-05							·						TM (O)	Q		OST-151-1 OST-151-2 OST-151-4
														TM (C)	Q		OST-151-5 OST-151-1 OST-151-2 OST-151-4 OST-151-5
														PI	Bi		OST-151-4 OST-151-5
			·														
I-870B	5379-1082 (1)	D-7	В	Act	3	GA	мо	N	С	OIC	A	N	Y	FS	Q		OST-151-2 OST-151-3 OST-151-5 OST-151-6
	GL 89-10, GL 96-05							÷.						тм ( <u></u> о)	Q	81 <sup>4</sup>	OST-151-2 OST-151-3 OST-151-5
• • • • • • • • • • • • • • • • • • •					•.		•	• •			· · · -	موري ک		TM (C)	Q	-	OST-151-6 OST-151-2 OST-151-3 OST-151-5
	•	•••									, .		•	PI ·	Bi		OST-151-5 OST-151-6 OST-151-5
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# Attachment 10.6 Page 70 of 97 Valve Table

							valve										
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos				Test Freq	Test Deferral	Surveillance Test
SI-871	5379-1082 (3)	E-2	С	Act	0.75	RV	SA	N	С	0	N/A	N	N	RL	App. I		EST-112
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61-872	5379-1082 (3)	G-6	c	Act	0.75	RV	SA	N	с	0	N/A	N	Ň	RL	App. I		EST-112
6I-873A	5379-1082 (4)	C-6_	A/C	Act	2	CK	SA	N	C	O/C	N/A	N .	N	FF	R	SI-VRS-3	OST-154
	SI-873A and SI-873D are te	ested as a unit (ISTC 4.	5.7)											LK	Bi		OST-160
														RF	R	SI-VRS-3	OST-160
SI-873B	5379-1082 (4)	C-6	С	Act	2	СК	SA	N	С	0	N/A	N	N	FF	App. II		CM-143 OST-154 PM-312
· ·· · · · · · ·		<u>.</u>	_ ·			;								cv	App. II		CM-143 OST-167-1 PM-312
																	¢
S1-873C	5379-1082 (4)	C-5	C	Act	2	ск	SA	N	c	0	N/A	N	N	FF	App. II		CM-143 OST-154 PM-312
														cv	App. II		CM-143 OST-167-2 PM-312
SI-873D	5379-1082 (4)		~ A/C	Act		СК	SA	N			N/A	N		FF	R	SI-VRS-3	OST-154
31-07-50	SI-873A and SI-873D are to	B-6		ALL	2	UN .		IN,			IN/A	N.	- N	LK	Bi	91-740-9	OST-154
	SI-075A and SI-075D are a	ested as a unit (1510 4.	.5.7)											RF	R	SI-VRS-3	OST-160
	• • • • • • • •									 				CN .	N ·		031-100
		·····											<u> </u>				

			-			Pa	tachn ge 71 Valve	of 9	7						-		
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type	Test Freq	Test Deferral	Surveillance Test
SI-873E	5379-1082 (4)	B-6	A/C	Act	2	СК	SA	N	с	0/C	N/A	N	N	FF	R	SI-VRS-3	OST-154
														LK	Bi		OST-160
														RF	R	SI-VRS-3	OST-160
1-873F	5379-1082 (4)	C-5	A/C	Act	2	СК	SA	N	с	0/C	N/A	N	N	FF	R	SI-VRS-3	OST-154
••••••••••••••••••••••••••••••••••••••		·		• • • •		- '								LK	Bi		OST-160
														RF	R	SI-VRS-3	OST-160
I-874A	5379-1082 (4)	C-7	A/C	Act	2	СК	SA	N	с	O/C	N/A	N	N	FF	App. II		CM-143 OST-154 PM-312
			· · · · · ·											LK.	Bi		OST-160
														RF	App. If		CM-143 OST-160 PM-312
II-874B	5379-1082 (4)	C-7	A/C	Act	2	ск	SA	N	c	O/C	N/A	N	 N	FF	App. II		CM-143
	0070 1002 (I)			, 101	-		<b>.</b>		Ŭ	0,0			N		744. II		OST-154 PM-312
														LK	Bi		OST-160
														RF	App. II		CM-143 OST-160
						••		1	•			4		. ·'			PM-312
I-875A	5379-1082 (4)	B-6	A/C	Act	10	ск	SA	N	С	O/C	N/A	N	N	FF	App. II	<u></u>	EST-096 OST-253 PM-306
<b>u</b> ,	• . ·													LK	Q;		OST-160
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·											<b>-</b> .		RF	Bi		OST-160
				· •	·		•			•	۰.				· •••••		001-100
	· · · ·	<b>.</b> . <b>.</b>		•				·•.		<b></b> .	·. ·	<u>د</u>					
			<del>,</del>				× .	÷ .									
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#### RNP2 Fifth IST Plan

		<u>.</u>	<i></i>			Pa	tachn ge 72 Valve	of 9	7								· ·
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
SI-875B	5379-1082 (4)	 В-7	A/C	Act	10	СК	SA	N	c	O/C	N/A	N	N	FF	App. II		EST-096 OST-253 PM-306
														LK	Bi		OST <u>-</u> 160
														RF	App. II		OST-160
	 		-			-	n. 1										
il-875C	5379-1082 (4)	A-7	A/C	Act	10	СК	SA	N	с	Ö/C	N/A	N	N	FF	App. II		EST-096 OST-253 PM-306
	<b>.</b>													LK	Bi		OST-160
	· · · · · · · · · · · · · · · · · · ·													RF	App. If		OST-160
i-875D	5379-1082 (4)	F-3	A/C	Act	10	СК	SA	N	с	O/C	N/A	N	N	FF	App. II		EST-096 OST-161
																	PM-306
														LK	App. II		OST-160
		·			**									RF	App. 1		OST-160
I-875E	5379-1082 (4)	D-3	A/C	Act	10	СК	SA	N	С	O/C	N/A	N	N	FF	App. II		EST-096 OST-161 PM-306
														LK	App. II		OST-160
			су). Суй.,				۰.	•		·				RF	App. II		OST-160
I-875F	5379-1082 (4)	C-3	A/C	Act	10	СК	SA	N	С	O/C	N/A	N	N	FF	App. II		EST-096 OST-161 PM-306
		· . · · · · · · · · ·	· ·,											LK	App. II		OST-160
								·						RF	App. II		OST-160
•			•	-			•	÷		••••		-			200		
		· ··· -						• • •									

# Attachment 10.6 Page 73 of 97 Valve Table

Valve				Act		Valve	Act	Ran	Norm	Safe	Fail	App J	Pre	Test	Toet	Test	Surveillance
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Pass	Size	Туре	Туре	-	Pos	Pos		Туре С		Туре		Deferral	Test
SI-876A	5379-1082 (4)	F-3	A/C	Act	8	ск	SA	N	с	O/C	N/A	N	N	FF	App. II		OST-253 PM-306
	,			•			2							LK	Bi		OST-160
				·							-			RF	App. II		OST-160
II-876B	5379-1082 (4)	D-4	A/C	Act	8	СК	SA	N	с	O/C	N/A	N	N	FF	App. II		OST-253 PM-306
														LK	Bi		OST-160
		•		··· <u>·</u>		-	- 0							RF	Арр. II		OST-160
SI-876C	5379-1082 (4)	C-3	A/C	Act	8	СК	SA	N	с	0/C	N/A	N	N	FF	App. II		OST-253 PM-306
														LK	Bi		OST-160
-	t it i i i			· ··	2	<b></b>	:	.1	-					RF	App. II		OST-160
5I-878A	5379-1082 (2)	D-7	в	Act	4	GÂ	мо	N	0	c	AI	N	Y	FS	CS	SI-VCS-3	OST-703-1
	Full stroke exercise and stroke time r	neasurement a	re augme	nted tests										TM (C)	çs	SI-VCS-3	OST-703-1
														PI	Bi		OST-703-1
<b>.</b>						••				• .							
I-878B	5379-1082 (2)	E-7	В	Act	4	ĠA	мо	N	0	С	Al	N	Y	FS	CS	SI-VCS-3	OST-703-1
	Full stroke exercise and stroke time r	neasurement a	re augme	nted tests										TM (C)	cs	SI-VCS-3	OST-703-1
														PI	Bi		OST-703-1
																	 . <del>.</del>
SI-879A	5379-1082 (2)	D-7	с <u>_</u>	Act	3	ск	SA	N	C	· 0/C	N/A	N	N	FF	R	SI-VRS-2	OST-151-4
		-	-	-			 _:* *			1.00	 	• · · ·	•	RF	R	SI-VRS-2	OST-151-2 OST-151-3 OST-151-5 OST-151-6
<i>,</i>	· · · · · ·		•••	· ·			 				** *	-					

	· · · ·	•					Valve	Table	e			-					· ·
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size				Norm Pos	Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillanc Test
SI-879B	5379-1082 (2)	E-7	С	Act	3	ск	SA	N	с	O/C	N/A	N	N	FF	R	SI-VRS-2	OST-151-5
														RF	R	SI-VRS-2	OST-151-1 OST-151-3 OST-151-4 OST-151-6
5I-879C	5379-1082 (2)	F-7	с	Act	3	ск	SA	N	C	Ö/C	N/A	N	N	FF	R	SI-VRS-2	OST-151-6
														RF	R	SI-VRS-2	OST-151-1 OST-151-2 OST-151-4 OST-151-5
	·																
SI-880A	5379-1082 (3)	C-5	В	Act	6	GA	MO	N	С	0	AI	N	Y	FS	Q		OST-352-1 OST-352-3
	GL 89-10, GL 96-05													TM (O)	Q		OST-352-1 OST-352-3
							_							PI	Bi		OST-352-3
• • •		·	•														
I-880B	5379-1082 (3)	C-5	B	Act	6	GA	мо	N	С	0	AI	N	Y	FS	Q		OST-352-1 OST-352-3
	GL 89-10, GL 96-05													тм (О)	Q		OST-352-1 OST-352-3
	n de la companya de l													PI	Bi		OST-352-3
SI-880C	5379-1082 (3)	E-5	8	Act	6	GA	мо	N	с	0	AI	N	Y	FS	Q		OST-352-2 OST-352-4
	GL 89-10, GL 96-05													тм (О)	Q		OST-352-2
-				<u>.</u>				*:	•	. · · .	•			PI	Bi		OST-352-4 OST-352-4
			<b>.</b>			1 -	۰,		· e.	₹.							
								19									- A state

Attachment 10.6

### RNP2 Fifth IST Plan

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# Attachment 10.6 Page 75 of 97 Valve Table

Valve		***		Act	=.	Valve	Act	Rap	Norm	Safe	Fail	App J	Pos	Test	Test	Test	Surveillance
Number	P&ID (SHT) Remarks	Coord	Cat	Pass	Size		Туре	-	Pos	Pos	Pos	Туре С	Ind	Туре		Deferral	Test
1-880D	5379-1082 (3)	E-5	В	Act	6	GA	мо	N	с	0	AI	N	Y	FS	Q		OST-352-2 OST-352-4
	GL 89-10, GL 96-05	- 				_ # <sup>1</sup>						• • •		TM (O)	Q		OST-352-2 OST-352-4
		~ · · · ·	• •			-				44		• .		PI	Bi		OST-352-4
-889A	5379-1082 (3)	D-3	с	Act	2	СК	SA	N	с	O/C	N/A	N	N	FF	CS	SI-VCS-4	OST-357
														RF	CS	SI-VCS-4	OST-357
·		•	<i></i>						•								
-889B	5379-1082 (3)	D-3	С	Act	2	СК	SA	N	с	0/C	N/A	N	N	FF	cs	SI-VCS-4	OST-357
														RF	CS	SI-VCS-4	OST-357
				7				·									
-890A	5379-1082 (3)	C-5	A/C	Act	6	CK `	ŠA	N	с	O/C	N/A	N	N	FF	App. II		CM-130 OST-357 PM-300
														LK	Bi		OST-357
														RF	App. II		OST-357
						,									· ·	1	
-890B	5379-1082 (3)	E-6	A/C	Act	6	СК	SA	N	С	O/C	N/A	N	N	FF	App. II		CM-130 OST-357 PM-300
														LK	Bi		OST-357
														RF	App. II		OST-357
	. :																
891A	- 5379-1082 (3)	- · · · C-8 ·	A	· Act	6	GΛ	М	N	LO ·	0/C ·	N/A	Ŷ	N		-Bi	· • ·	OST-357
		• :									i. '	,	•	LJ	App. J		OST-933-5
	· · · · · · · · · · · · · · · · · · ·	••••••••••••••••••••••••••••••••••••••	-		- · ·		-	· · ·		-						-	· . ·
							-	`									

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							Valve										
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type		Rap Act	Norm Pos	Safe Pos		App J Type C			Test Freq	Test Deferral	Surveillance Test
SI-891B	5379-1082 (3)	E-8	А	Act	6	GA	м	N	LO	0/C	N/A	Y	N	FS LJ	Bi App. J		OST-357 OST-933-6
51-893A	5379-1082 (2)	D-6	c	Act	0.75	СК	SA	N	с	0	N/A	N	N	FF	App. II		CM-143 OST-151-1 OST-151-4 PM-312
	a an an an a' an a'	<u>.</u>										.' .		cv	App. II		OST-151-2 OST-151-3 OST-151-5 OST-151-6
II-893B	5379-1082 (2)	E-6	с	Act	0.75	СК	SA	N	С	ō	N/A	N	N	FF	App. II		CM-143 OST-151-2
				· -• ·		•				·					•		OST-151-5 PM-312
														CV	App. II		OST-151-1 OST-151-3 OST-151-4 OST-151-6
	· · ·		*														
I-893C	5379-1082 (2)	G-6	С	Act	0.75	СК	SA	N	с	ō	N/A	N	N	FF	Арр. II		CM-143 OST-151-3 OST-151-6 PM-312
			-											cv	App. II		OST-151-1 OST-151-2 OST-151-4 OST-151-5
SI-895V	5379-1082 (1)		A	Pass	0.75		Μ	N	LC	C	N/A	Y	N	FS AUG	Bi		OST-933-28
	···			4 A				۰.						۲ <b>LJ</b>	App. J		OST-933-28
	· · ·			•			7	,. <b>.</b> .		-*		· .					

# Attachment 10.6

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# Attachment 10.6

Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type			Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
51-898F	5379-1082 (1)	G-7	A	Pass	0.75	GL	м	N	LC	с	N/A	Y	N	FS AUG	Bi		OST-933-28
														LJ	App. J		OST-933-28
51-899D	5379-1082 (3)	G-7	С	Act	0.75	VB	SA	N	с	0	N/A	N	N	RL	App. I		EST-068
		. <u>.</u>	-			•• ·• ·	<b>.</b> .										
SI-899E	5379-1082 (3)	G-7	c	Act	0.75	VB	SA	N	с	0	N/A	N	N	RL	App. 1		EST-068
1-909	5379-1082 (5)	F-3	A/C	Act	1	ск	SA	N	с	С	N/A	Y	N	LJ	App. J	<u> </u>	EST-059
	· ·	. • ,			-					. <b>.</b>			2.	. ov	R	SI-VRS-1	EST-152
														RF	R	SI-VRS-1	EST-059
N-915	5379-1082 (2)	D-1	в	Pass	4	GL	м	N	LO	0	N/A	N	N	FS AUG	Bi		OST-253
	AUG																
																	<u>.</u>
I-916	5379-1082 (2)	C-1	В	Pass	4	GL	M	N	LO	0	N/A	N	N	FS AUG	Bi		OST-253
	AUG																
															2		
	· · ·		*								<b>.</b>						
1-925	5379-1082 (3)	В-3	A	Pass	4	GA	M	N	LC	С 	N/A	N	N	LK	Bi		EST-140
	1				1.5		•			·		;		* .			
• • • • •									<b>.</b> .			·	•				

<u> </u>		<u> </u>	- •		Pag	tachrr ge 78 /alve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord Cat	Act Pass	Size	Valve Type				Safe Pos		App J Type C				Test Deferral	Surveillance Test
SI-928	5379-1082 (3)	F-3 · · · A ·	Pass	4	GA	м	-N	LC	·· C- ·	N/A	N	N	LK -	Bi	16 T C 4444	EST-140
SI-932	5379-1082 (2)	C-7 A	Pass	2	GA	M	N	LC	° C	N/A	Ň	Ň	LK	Bi		EST-140
JI-935	5379-1082 (2)		Pass	2	GA	M	N	LC	с	N/A	N	Ñ~	LK	Bi		EST-140
51-938	5379-1082 (2)	··· F-7 ··· A-	Pass	2	GA ~	M	<u>N</u>	LC	<del>.</del> с.	N/A	N .	N	LK -	Bi		EST-140
V1-1A	G-190196 (1)	. C-6	Act	6	RV	····SA	N	C	O/C	N/A		Ň	RL	App. I		EST-028
V1-1B ·	G-150196 (1)	· E-8 · C	Act	··· 6	∽RV	SA	N -	C	- O/C -	N/A	· N	N	RL	App. I		EST-028
SV1-1C	G-190196 (1)	G-6 .C.	Act		RV -	SA	N	- <b>C</b>	-0/C	N/A	N	N	RL	App. I		EST-028

			· · · •			Pa	tachn ge 79 Valve	of 9	7								·
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	-		Safe Pos		App J Type C				Test Deferral	Surveillance Test
SV1-2A	G-190196 (1)	C+6	С	Act	6 <sup>.</sup>	RV	· ·· SA	• N	Ċ-	0/C	- N/A	N	N	RL	App. I		EST-028
SV1-28	G-190196 (1)	· · · E-6 - ~ -	с	Act	6	RV	SA	N	~ <u>c</u> -	- O/C	N/A	N	N	RL	App. I		EST-028
SV1-2C	G-190196 (1)	G-6	<u> </u>	Act	6 -	RV	SA	N	C.	- 0/C -	N/A	N	Ň	RL	App. 1		EST-028
SV1-3A	G-190196 (1)	C-5	Ċ	Act	- 6 -	₩ RV	SA SA	N	c	0/C		N	N	RL	Арр. 1		EST-028
V1-3B	G-190196 (1)	E-5	- C	Act	6	RV	SA	N	c	O/C	N/A	Ň	N	RL	App. I		EST-028
V1-3C	G-190196 (1)	G-5	c -	Act	6	RV	SA	N	- c	·· 0/C ··	N/A	N	. N	RL	Арр. Г		EST-028
SV1-4A	G-190196 (1)	<b>C-5</b>	c	Act	6	RV	<b>SA</b>	N	C	Ō/Ċ		• N ~· •	· N	RL	App. I	in a constant	EST-028
<u> </u>		······································		<u> </u>	-			•		· · ·		,			-		· · · ·

#### RNP2 Fifth IST Plan

	· · · · ·					Pa	tachm ge 80 Valve	of 9	7		• •		,				
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type	Rap Act		Safe Pos	Fail Pos	App J Type C		Test Type		Test Deferral	Surveillance Test
SV1-4B	G-190196 (1)	E-5	с	Act	6	RV	SA	N	с	O/C	N/A	N	N	RL	App. I		EST-028
SV1-4C	G-190196 (1)	G-5	c	Act	6	RV	SA	N	c	O/C	N/A	N	N	RL	App. I	and the second	EST-028
SW-118	G-190199 (10)	C-4	В	Act	6	GA	м	N	ĻĊ	0	N/A	N	N	FS	Bi		OST-701-6
5W-18	G-190199 (9)	D-7	В	Act	24	BF	M	N	0	O/C	N/A	N	N	FS	Bi		OST-701-6
							·									-	
SW-19	G-190199 (9)	E-7	В	Act	24	BF	М	N	0	O/C	N/A	N	N	FS	Bi		OST-701-6
	• • ••	4 <sup>-</sup>		•••	-		• • •			·						· · •	
	G-190199 (7) AUG	D-3	В	Act	1	GL	M	N	LC	0	N/A	N	N	FS	Bi		OST-701-6
																	•
5W-202	G-190199 (7)	D-3	В	Act	.1	GL	M	N.	. C .	0.	- N/A	N	N	FS	Bi	-	OST-701-6
	AUG.	• 			•		• •	•	7.,	- 24 - 1 2	:	į	÷			`+ <b>g</b>	
	······································						• •										

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#### Attachment 10.6 Page 81 of 97 Valve Table

P&ID (SHT) Remarks G-190199 (10)	Coord F-2	Cat	Act Pass	Size		Act	Rap	Norm	Safe	Fail	App J	Pos	Test	Test	Test	Surveillance
G-190199 (10) -	F-2				туре	Туре	Act	Pos	Pos		Туре С		Туре		Deferral	Test
		· C	Act <sup>.</sup>	1	СК	SA	N ^	Ć	0	N/A	N	N	FF	App. II		CM-146 OST-202 PM-317
													cv	App. II		CM-146 PM-317
·			.'						-							
G-190199 (10)	E-1	С	Act	1	СК	SA	N	С	0	N/A	N	N	FF	App. II		CM-131 OST-202 PM-322
	·.			<del>-</del> .									cv	App. 11		CM-131 PM-322
G-190199 (2)	C-8	С	Act	18	СК	SA	N	O/C	O/C	N/A	N	N	FF	Q		OST-302-1 OST-302-3
·			•••	,		·		-	<sup>1</sup> .				RF	Q		OST-302-1 <sup></sup> OST-302-3
G-190199 (2)	C-6	С	Act	18	СК	SA	N	O/C	O/C	N/A	N	N	FF.	Q		OST-302-2 OST-302-4
													RF	Q		OST-302-2 OST-302-4
G-190199 (2)	Ċ-7	С	Act	18	СК	SA	N	O/C	O/C	N/A	N	N	FF	Q		OST-302-1 OST-302-3
													RF	Q		OST-302-1 OST-302-3
• • • • • •	· · · ·															
G-190199 (2)	C-6	C (C	Act	18	СК	SA	N	0/C	O/C	N/A	N	N	FF	Q	. •• `	OST-302-2 OST-302-4
									یەر مىر بىر مىر بىر			•	RF	Q		OST-302-2 OST-302-4
	G-190199 (2) G-190199 (2) G-190199 (2) G-190199 (2)	G-190199 (2) C-8 G-190199 (2) C-6 G-190199 (2) C-7 G-190199 (2) C-6	G-190199 (2) C-8 C G-190199 (2) C-6 C G-190199 (2) C-7 C	G-190199 (2) C-8 C Act G-190199 (2) C-6 C Act G-190199 (2) C-7 C Act	G-190199 (2) C-8 C Act 18 G-190199 (2) C-6 C Act 18 G-190199 (2) C-7 C Act 18 G-190199 (2) C-7 C Act 18	G-190199 (2) C-8 C Act 18 CK G-190199 (2) C-6 C Act 18 CK G-190199 (2) C-7 C Act 18 CK	G-190199 (2) C-8 C Act 18 CK SA G-190199 (2) C-6 C Act 18 CK SA G-190199 (2) C-7 C Act 18 CK SA G-190199 (2) C-6 C Act 18 CK SA	G-190199 (10) E-1 C Act 1 CK SA N G-190199 (2) C-8 C Act 18 CK SA N G-190199 (2) C-6 C Act 18 CK SA N G-190199 (2) C-7 C Act 18 CK SA N G-190199 (2) C-6 C Act 18 CK SA N G-190199 (2) C-7 C Act 18 CK SA N	G-190199 (2) C-8 C Act 18 CK SA N O/C G-190199 (2) C-6 C Act 18 CK SA N O/C G-190199 (2) C-7 C Act 18 CK SA N O/C	G-190199 (10)       E-1       C       Act       1       CK       SA       N       C       O         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       O/C         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       O/C         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       O/C         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C	G-190199 (10) E-1 C Act 1 CK SA N C O N/A G-190199 (2) C-8 C Act 18 CK SA N O/C O/C N/A G-190199 (2) C-8 C Act 18 CK SA N O/C O/C N/A G-190199 (2) C-7 C Act 18 CK SA N O/C O/C N/A G-190199 (2) C-7 C Act 18 CK SA N O/C O/C N/A G-190199 (2) C-6 C Act 18 CK SA N O/C O/C N/A	G-190199 (10) E-1 C Act 1 CK SA N C O N/A N G-190199 (2) C-8 C Act 18 CK SA N O/C O/C N/A N G-190199 (2) C-6 C Act 18 CK SA N O/C O/C N/A N G-190199 (2) C-7 C Act 18 CK SA N O/C O/C N/A N G-190199 (2) C-6 C Act 18 CK SA N O/C O/C N/A N	G-190199 (10)       E-1       C       Act       1       CK       SA       N       C       O       N/A       N       N         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C <t< td=""><td>G-190199 (10)       E-1       C       Act       1       CK       SA       N       C       O       N/A       N       N       FF         CV       C-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-6       C       Act       18       CK       SA       N</td></t<> <td>G-190199 (10)       E-1       C       Act       1       CK       SA       N       C       O       N/A       N       N       FF       App. II         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF       Q     <!--</td--><td>G-190199 (10) E-1 C Act 1 CK SA N C O N/A N N FF App. II CV APP.</td></td>	G-190199 (10)       E-1       C       Act       1       CK       SA       N       C       O       N/A       N       N       FF         CV       C-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF         G-190199 (2)       C-6       C       Act       18       CK       SA       N	G-190199 (10)       E-1       C       Act       1       CK       SA       N       C       O       N/A       N       N       FF       App. II         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-8       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-6       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       O/C       N/A       N       N       FF       Q         G-190199 (2)       C-7       C       Act       18       CK       SA       N       O/C       N/A       N       N       FF       Q </td <td>G-190199 (10) E-1 C Act 1 CK SA N C O N/A N N FF App. II CV APP.</td>	G-190199 (10) E-1 C Act 1 CK SA N C O N/A N N FF App. II CV APP.

						Pag	achm je 82 /alve	of 97	7						-		
Valve	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type				Safe Pos		Арр Ј Туре С			Test Freq	Test Deferral	Surveillance Test
SW-541	G-190199 (9)	G-5	с	Act	30	ск	SA	N	0	O/C	N/A	N	N	FF	Q		OST-302-2 OST-302-4
	· ·				. •		•		·					RF	Q		OST-302-2 OST-302-4
SW-545	G-190199 (10)	B-3	c	Act	30	СК	ŚA	N	0	o/c	N/A	N	N	FF	Q		OST-302-1 OST-302-3
														RF	Q		OST-302-1 OST-302-3
	; _																
SW-546	G-190199 (4)	F-3	_C .	Act	0.75,	RV	SA	N	С	0	N/A	N	N	RL	App. I		EST-112
SW-547	G-190199 (5)	E-6	с	Act	0.75	.RV	SA	N	с	0	N/A	N	Ņ	RL	App. I		EST-112
SW-548	G-190199 (5)	D-6	C	Act	0.75	RV	SA	N	c	0	N/A	N	N	RL	App. I		EST-112
							-			-							
SW-549	G-190199 (5)	C-6	с	Act	0.75	RV	SA	N	с	0	N/A	N	N	RL	Арр. І		EST-112
			-	<b>.</b> .		•						· ·· ·	:	· · ·	 		
SW-559	G-190199 (7)	, <b>P-3</b>	° C	Act	1	• ск	SA	N	с	0	N/A	N	N	FF	App. II		CM-131 PM-322
•	AUG											~ •		ĊŇ	App. II		CM-131 PM-322

#### RNP2 Fifth IST Plan

								ge 83 Valve										
Valve Number	P&ID (SHT) Remarks		Coord	Cat	Act Pass	Size		Act Type	-	Norm Pos	Safe Pos	Fail Pos			Test Type		Test Deferral	Surveillance Test
 SW-560	G-190199 (7)		F-5	с	Act	12	СК	SA	N	O/C	0/C	N/A	N	N	FF	Q		OST-303-2 OST-303-4
											-	•			RF	Q		OST-303-1 OST-303-3
SW-561	G-190199 (7)		E-5	с	Act	12	СК	SA	N	O/C	0/C	N/A	N	N	FF	Q		OST-303-1 OST-303-3
м.,		• •	-	· · ·	•						·				RF	Q		OST-303-2 OST-303-4
SW-562	G-190199 (9)		D-6	C	Act	<u> </u>	СК	SA	N	0/C	0	N/A	Ņ	<u></u> N	FF	Q		OST-201-1
	AUG		·		2								· ´ ~					OST-207
SW-563	G-190199 (9)		E-6.	c	Act .	1	CK.	SA	N	0/C	0	N/A	N	N	FF	Q		OST-201-2 OST-207
	AUG									•								
SW-83	G-190199 (6)		G-6	В	Pass	6	GA	Ņ	N	с	C	N/A	N	N	FS	Bi		OST-410
	AUG																	
SW-837	G-190199 (2)		F-6	c	Act	0.5	ск	SA	N	С	c	N/A	N	N	RF	App. II		OST-305
	· · · -														ov	App. II		PMID 16360
	•• • • •		•				•	• ·					•		-			•.
SW-843	G-190199 (2)		F-6	C .	Act	0.5	СК	SA	N	Ċ	Ċ.	N/A	N	"N	RF	App. II		OST-305
	·. ·					• •-	••			••	* ***				ov	App. Îl		PMID 16361
										,								

Attachment 10.6

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Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type			Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillanc Test
SW-849	G-190199 (2)	F-7	c	Act	0.5	ск	SA	N	c	с	N/A	N	N	RF	App. II		OST-305
														ov	App. II		PMID 16362
	$S_{i}(t) = S_{i}(t) + \varepsilon_{i}(t)$																
	· · · · · · · · · · · · · · · · · · ·																
SW-855	G-190199 (2)	F-7	с	Act	0.5	СК	SA	N	С	с	N/A	N	N	RF	App. II		OST-305
														ov	App. II		PMID 16363
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1																
	<u> </u>																· · · ·
SW-906	G-190199 (5)	B-2	В	Act	3	GA	М	N	0	0/C	N/A	N	N	FS	Bl		OST-927-2
SW-907	G-190199 (5)	B-4	В	Act	2	GA	м	N	0	O/C	N/A	N,	N	FS	BI		OST-927-1
507-507			•	• •		•					•						-
SW-911	G-190199 (10)	F-6	С	Act	2	СК	SA	N	0	С	N/A	N	N	RF	App. II		CM-143
																	OST-927-2 PM-312
·			• -					÷	÷		·.			ov	App. II		CM-143 EST-153 PM-312
																	PM-312
SW-924	G-190199 (10)	F-7	C	Act	2	СК	SA	N	0	с	N/A	N	N	RF	App. II		CM-143
																	OST-927-1 PM-312
		•			-			_						ov	App. II		CM-143 EST-153 PM-312
-	· · · · ·	· · · ·	•					-						-			PM-312
		. 11 - La		-						e. 77	.c.						
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#### Attachment 10.6 Page 84 of 97 Valve Table

Number Coord Cat Pass Size Type Act Post Post Type C and Type Erect Deferred T																	
Number	P&ID (SHT) Remarks	Coord	Cat		Size				Norm Pos							Test Deferral	Surveillar Test
SW-931	G-190199 (7)	E-5	c	Act	0.5	СК	SA	N	0	c	N/A	N	N	RF	App. II		CM-131 OST-303- OST-303- PM-322
in a company	AUG	41 												vo	App. II		CM-131 PM-322
SW-932	G-190199 (7)	F-5	с	Act	0.5	СК	SA	N	0	с	N/A	Ň	N	RF	App. II		CM-131 OST-303- OST-303-
	AUG	e e la Naciona	× .	÷ .										ov	App. II		PM-322 CM-131 PM-322
SW-933	G-190199 (7)	D-4	C	Act	1.	ск	SA	N	c	с	N/A	N	N	RF	App. II		CM-131 PM-322
	AUG													ov	App. II		CM-131 PM-322
		· · · ·															
	G-190199 (7) System normally out of service	E-4	С	Act	6	СК	SA	N	O/C	с	N/A	N	N	RF OV	Q		SPP-038 SPP-038
	G-190199 (7)	<u> </u>	<u> </u>	Act	6	ск	SA	N	O/C	c	N/A	N	N	RF	Q		SPP-038
	System normally out of service													ov	Q		SPP-038
		1 ···															
	G-190199 (12)	A-5 -	B 	Act	16	BF	M 	N ·	LO	<b>C</b>	N/A	N	N	FS AUG	Bi	ī	OST-702-4
· · · · · ·					· ·		•	·····	- · .	· · ·	· ·			,	• •		

						Pa	tachm ge 86 /alve	of 9	7 ~~								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type			Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type	Test Freq	Test Deferral	Surveillance Test
CV-1660	G-190199 (6)	C-1	В	Act	4	GL	AO	N	с -		0	N	N 	FS	Q		OST-401-1 OST-409-1 OST-410
														FO	Q		OST-401-1 OST-409-1 OST-410
														тм (о)	Q		OST-401-1 OST-409-1 OST-410
	· · · · · · · · · · · · · · · · · · ·			<b>N</b> 4					-								
CV-1661	G-190199 (6)	C-5	В	Act	4	GL	AO	N	с	0	0	N	N	FS	Q		OST-401-2 OST-409-2 OST-411
														FO	Q		OST-401-2 OST-409-2 OST-411
											. •			тм (О)	Q .		OST-401-2 OST-409-2 OST-411
CV-1903A	G-190199 (9)	C-5	В	Act	1	GL	AO	Y	С	0	0	N	Y	FS	Q		OST-201-1 OST-207
														FO	Q		OST-201-1 OST-207
	- 							1.			÷	,		TM (O)	Q		OST-201-1 OST-207
														PI	Bi		OST-207
01/ 40020	0.400400 (0)		B	Act	1	0	40	Y	с		0	N	Y	FS	Q		OST-201-2
CV-1903B	G-190199 (9)	F-5	В	Act	I	GL	AO	T	C	0	0	N	T	۳ð	u.		OST-207-2
														FO	Q		OST-201-2 OST-207
·· ··	· · ·		. · ·		-	- •	• • •		1. 					TM (O)	Q		OST-201-2 OST-207
			-			•••	· • • •	57		• *				PI	Bi		OST-207
	11. st									1944 - A		12°,					
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#### Attachment 10.6 Page 87 of 97 Valve Table

							Valve	Taple	<del>}</del>								<u> </u>
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos		Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
12-10	G-190304 (1)	D-2	A	Act	6	BF	AO	Y	O/C	с	с	Ŷ	Y	FS	Q		OST-701-8
														FC	Q		OST-701-8
														TM (C)	Q		OST-701-8
• • •				• •				~			-			PI	Bi		OST-707-8
														IJ	App. J		EST-137-6
2-11	G-190304 (1)	D-3	A	Act	6	BF	AO	Y	O/C	С	С	Ŷ	Y	FS	Q	·	OST-701-8
														FC	Q		OST-701-8
														TM (C)	Q		OST-701-8
						:	·.					1		PI	Bi		OST-707-8
					•							· .		LJ	App. J		EST-137-6
2-12	G-190304 (1)	C-6	A	Act	6	BF	AÖ	Y	O/C	с	с	Y	Y	FS	CS	HVA-VCS-1	OST-703-9
														FC	cs	HVA-VCS-1	OST-703-9
														TM (C)	CS	HVA-VCS-1	OST-703-9
														Pi	Bi		OST-703-9
														LJ	App. J		EST-135-2
	G-190304 (1)	C-6	A	Act		BF	AO		O/C		c			FS	CS		007 700 0
2-13	(=190304 (1)	C-6	~	ACI	0	DF	AU	Y	0/0	С	C	Y	Y			HVA-VCS-1	OST-703-9
														FC	CS	HVA-VCS-1	OST-703-9
														TM (C)	CS	HVA-VCS-1	OST-703-9
														Pł	Bi		OST-703-9
														LJ	App. J		EST-135-2
2-14	HBR2-6933 (1)	F-8	A	Act	3	DA	AO	N	С	O/C	С	Y	Y	FS	CS	PAV-VCS-1	OST-703-7
	• - •		•							-	-	•		FC	cs	PAV-VCS-1	OST-703-7
	• • • • •	- · · ·	-	× .			2							TM (O)	cs	PAV-VCS-1	OST-703-7
,				• .				·2			•			TM (C)	cs	PAV-VCS-1	OST-703-7
·· · ·									•	a' Fa St				PI	Bi		OST-703-7
					·			. 1944					•	LJ	App. J		EST-137-6

Revision: 1

						Pa	tachn ge 88 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	Rap Act	Norm P <u>o</u> s	Safe Pos	Fail Pos	Арр Ј Туре С	Pos Ind		Test Freq	Test Deferral	Surveillance Test
V12-15	HBR2-6933 (1)	G-6	A	Act	3	DA	AO	N	с	O/C	с	Y	Y	FS	CS	PAV-VCS-1	CST-703-7
														FC	CS	PAV-VCS-1	OST-703-7
														TM (O)	cs	PAV-VCS-1	OST-703-7
														TM (C)	CS	PAV-VCS-1	OST-703-7
														Pi	Bi		OST-703-7
	<u>-</u>													LJ	App. J		EST-137-6
/12-16	HBR2-6933 (1)	G-5	В	Act	3	DA	м	N	С	0	N/A	N	N	FS	Bi		OST-907
	AUG													,			
																	N
						-				-		-					
/12-17	HBR2-6933 (1)	G-4	В	Act	3	DA	м	N	С	0	N/A	N	N	FS	Bi	<u></u>	OST-907
	AUG																
/12-18	HBR2-6933 (1)	E-8	. <b>А</b>	Act	3	DA	AO	N	с	O/C	с	Ŷ	Y	FS	CS	PAV-VCS-1	OST-703-7
														FC	CS	PAV-VCS-1	OST-703-7
														TM (O)	CS	PAV-VCS-1	OST-703-7
														TM (C)	CS	PAV-VCS-1	OST-703-7
														PI	Bi		OST-703-7
		· .						-						LJ	App. J		EST-137-7
/12-19	HBR2-6933 (1)	E-7	A	Act	3	DA	AO	N	с	O/C	с	Y	Y	FS	CS	PAV-VCS-1	OST-703-7
														FC	cs	PAV-VCS-1	OST-703-7
														TM (O)	cs	PAV-VCS-1	OST-703-7
			-											TM (C)	cs	PAV-VCS-1	OST-703-7
	-						•		•		· · ·			PI	Bi		OST-703-7
	• .			54 f		: :		;						LJ	App. J		EST-137-7
			-						, - <del>-</del>						•		4 A. (2).
v12-20	HBR2-6933 (1)	<b>E-6</b> 	В	Act	3	DA	M	N	C	0	N/A -	···· N	N	FS	Bi		OST-907

						Pa	tachm ge 89 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size			-	Norm Pos	Safe Pos		App J Type C		Test Type		Test Deferral	Surveillance Test
V12-21	HBR2-6933 (1) AUG	E-5	В	Act	3	DA	M	N	С	0	N/A	N	N	FS	'Bi		OST-907
V12-24A	G-190200 (9) AUG	F-4	B	Act	2	DA	AO	N	C	0	c	N	Ŷ	FS FC TM (O) Pi	Bi Bi Bi Bi		OST-703-7 OST-703-7 OST-703-7 OST-703-7
V12-24B	G-190200 (3)	E-5	B	Act	2	DA	AQ	Ņ.	c	0	c	N	Y.	FS FC TM (O) PI	Bi Bi Bi Bi		OST-703-7 OST-703-7 OST-703-7 OST-703-7
V12-25	G-190200 (3) AUG	C-5	B	Act	2	DA	AO		C C	0	0	N	Y	FS FO TM (O) PI	Bi Bi Bi Bi		OST-703-7 OST-703-7 OST-703-7 OST-703-7
V12-6	G-190304 (1)	C-6	<b>A</b>	Act	42	BF	AO	Y	O/C	C	c	Y	Y	FS FC TM (C) PI LJ	CS CS CS Bi App. J	HVA-VCS-2 HVA-VCS-2 HVA-VCS-2	OST-704 OST-704 OST-704 OST-704 EST-135-1
V12-61	HBR2-6933 (1) AUG	G-5	 B	Act	2	GA	M	N 	• • • • • •	0	N/A		N	FS	Bi -	· · · · · · · · · · · · · · · · · · ·	OST-907

Attachn	nent	t <b>10.6</b>	
Page 90	of	97	

· :::						Valve									<u>.                                    </u>
P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act					App J Type C				Test Deferral
HBR2-6933 (1)	E-6	в	Act	2	GA	М	N	с	0	N/A	N	Ν	FS	Bi	
AUG															
						•		·	•						
G-190304 (1)	C-6	Α	Act	42	BF	AO	Y	O/C	С	с	Y	Y	FS	CS	HVA-VCS-2
													FC	CS	HVA-VCS-2
													TM (C)	CS	HVA-VCS-2
,	•.												PI	Bi	
	• • •										-		IJ	App. J	

2-8	G-190304 (1)	E-2	А	Act	42	BF	AO	Y	O/C	С	С	Y	Y	FS	CS	HVA-VCS-2	OST-704
														FC	CS	HVA-VCS-2	OST-704
		. v usa s												TM (C)	cs	HVA-VCS-2	OST-704
														PI	Bi		OST-704
					-									IJ	App. J		EST-137-5

V12-9	G-190304 (1)	D-3	A	Act	42	BF	AO	Ŷ	O/C	С	с	Y	Y	FS	CS	HVA-VCS-2	OST-704
	<b>1</b>	la si si suga si s	ومول الرمى م	<i>k</i> .										FC .	cs	HVA-VCS-2	OST-704
														TM (C)	cs	HVA-VCS-2	OST-704
· .					•									PI	Ві	· •.	OST-704-
														LJ	App. J		EST-137-5
V6-12A	G-190199 (2)	D-7	B	Act	30	BF	мо	N	0	c	Al	N	Y	FS	Q		OST-302-1

V0-12A	G-190 199 (2)	0-1	B AC	50 51	MO	ii O	<b>U</b> ,	u 14	•	10	<b>u</b>	OST-302-3
	Full stroke exercise and stroke			S						TM (C)	Q	OST-302-1 OST-302-3
			· · · · · ·	an La comp		<del>.</del>	- 	-		PI	Ві	OST-302-3
		n	1.42	. •	ر- في	, in	• • • •				<b>*</b> *	

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Valve

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V12-63

V12-7

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Surveillance

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OST-907

OST-704

OST-704 OST-704 OST-704

EST-135-1

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#### Attachment 10.6 Page 91 of 97 Valve Table

							valve										
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	Rap Act	Norm Pos	Safe Pos	- Fail Pos	App J Type C	Pos Ind	Test∙ Type	_	Test Deferral	Surveillance Test
V6-12B	G-190199 (2)	C-7	В	Act	30	BF	MO	N	0	с	A!	N	Y	FS	Q		OST-302-1 OST-302-3
	Full stroke exercise and stroke tin	ne measurement a	re augme	nted tests										TM (C)	Q		OST-302-1 OST-302-3
· · · ·				· .	~		· ·· ·					• • •		PI	Bi		OST-302-3
/6-12C	G-190199 (2)	C-6	В	Act	30	BF	MO	N	0	с	AI	N	Y	FS	Q		OST-302-2 OST-302-4
	Full stroke exercise and stroke tin	ne measurement a	re augme	nted tests										TM (C)	Q		OST-302-2 OST-302-4
·	and the second second		. 1		· ·	• `								PI	.Bi		OST-302-4
V6-12D	G-190199 (2)	D-6	В	Act	30	8F	MO	N	0	С	AI	N	Y	FS	Q		OST-302-2 OST-302-4
	Full stroke exercise and stroke tin	ne measurement ar	re augme	nted tests								,		тм (С)	Q	۲ <u>۰</u>	OST-302-2 OST-302-4
	:													PI	Bi	* <u></u>	OST-302-4
/6-16A	G-190199 (10)	B-3	В	Act	16	BF	мо	N	0	с	Al	N	Y	FS	Q		OST-302-2 OST-302-4
	GL 89-10, GL 96-05													TM (C)	Q		OST-302-2 OST-302-4
			•					in e						PI	Bi 	14. 14	OST-302-4
/6-16B	G-190199 (10)	C-3	В	Act	16	BF	мо	N	0	с	AI	N	Y	FS	Q		OST-302-1 OST-302-3
	GL 89-10, GL 96-05													TM (C)	Q		OST-302-1 OST-302-3
· · · <u>·</u> · · · · · · ·			÷	÷	· ··-	-	ī. <sup>1</sup>					······································		PI	Bi		OST-302-3
		ه م مورد روی م		• •		<i></i>	1	ş., '	سر بر	بر م	<b>n</b> .	e Series		~* ·			2 
V6-16C	G-190199 (10)	B-2	Β.	Act	16	BF	MO	N	~ <u>0</u>	Ċ.	···ĄI		Y ·	FS	CS	SW-VCS-1	OST-702-4
	GL 89-10, GL 96-05													тм (С)	CS	SW-VCS-1	OST-702-4
						•. •		•						PI	Bi		OST-702-4

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#### Attachment 10.6 Page 92 of 97 Valve Table

Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type	Test Freq	Test Deferral	Surveillance Test
/6-33A	G-190199 (7)	E-3	В	Act	6	BF	мо	N	0	с	Al	N	Y	FS	Q	<u>,</u>	OST-902-1
	Full stroke exercise and stroke t	me measurement a	re augme	ented tests					•		•			TM (C)	à		OST-902-1
														Ы	Bi		OST-925
														1			
/6-33B	G-190199 (7)	E-3	В	Act	6	BF	MO	N	0	c	AI	N	Y	FS	Q		OST-902-1
	Full stroke exercise and stroke t	me-measurement a	re augme	ented tests			2		•					TM (C)	ΞQ		OST-902-1
														PI	Bi		OST-925
/6-33C	G-190199 (7)	G-3	B	Act	6	BF	мо	N	0	С	AI	N	Y	FS	Q		OST-902-2
	- Full stroke exercise and stroke t	me measurement a	re augme	ented tests										TM (C)	Q		OST-902-2
														Pl	Bi		OST-925
				<u></u>													007 000 0
/6-33D	G-190199 (7)	F-3	В	Act	6	BF	MO	N	0 	С	AI	N	Y	FS	Q		O\$T-902-2
	Full stroke exercise and stroke t	ime measurement a	ire augme	ented tests			··· ~							TM (C)	Q		OST-902-2
														PI	Bi		OST-925
/6-33E-	G-190199 (7)	E-4	В	Act	6	BF	MO	N	0	С	AI	Ν	Y	FS	Q		OST-902-2
	Full stroke exercise and stroke t	ime measurement a	ire augme	ented tests								,		TM (C)	Q	14.5 <b>* *</b>	OST-902-2
														PI	Bi		OST-925
/6-33F	G-190199 (7)	F-4	В	Act	6	BF	MO	N	0	с	Al	_ N	Y	FS	Q		OST-902-1
	Full stroke exercise and stroke.t	ime measurement a	ire augme	ented tests			<b>.</b>			<sup>.</sup>				TM (C)	Q		OST-902-1
	•	- •							• .			×7		PI	Bi		OST-925
	·	• .	2.1			•	-	:	2			,					

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#### Attachment 10.6 Page 93 of 97 Valve Table

Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	Rap Act	Norm Pos	Safe Pos	Fail Pos	App J Type C	Pos Ind	Test Type	Test Freq	Test Deferral	Surveillance Test
/6-34A	G-190199 (5)	C-6	8	Act	6	BF	MO	N	0	с	AI	N	Y	FS	Q		OST-902-1
	Full stroke exercise and stroke	time measurement are	augme	nted tests	-			1	•	-	÷.			TM (C)	Q		OST-902-1
														PI	Bi		OST-925
6-34B	G-190199 (5)	D-6	B	Act	6	BF	MO	N	0	с	AI	N	Y	FS	Q		OST-902-1
	Full stroke exercise and stroke	time measurement are	augme	nted tests	····-	۰.								TM (C)	Q		OST-902-1
														PI	Bi		OST-925
6-34C	G-190199 (5)	E-6	B	Act	6	BF	MO	N	0	С	AI	N	Ŷ	FS	Q		OST-902-2
	Full stroke exercise and stroke	time measurement are	augme	nted tests		•	. ~.				•		. :.	TM (C)	Q `~	<b>.</b>	OST-902-2
														PI	Bi		OST-925
																	.*
6-34D	G-190199 (5)	F-6	в	Act	6	BF	мо	Ň	0	С	AI	N	Y	FS	Q		OST-902-2
	Full stroke exercise and stroke	time measurement are	augme	nted tests		-	•	· · ·	·			-		TM (C)	Q		OST-902-2
														Pl	· Bi		OST-925
6-35A	G-190199 (4)	G-3	в	Act	1	GL	мо	N	0	с	AI	N	Y	FS	Q		OST-902-1
	Full stroke exercise and stroke	time measurement are	augme	nted tests				•_		:				TM (C)	Q		OST-902-1
														PI	Bi		OST-925
6-35B	G-190199 (4)	G-4	в	Act	1	GL	мо	N	0	С	Al	N	Y	FS	Q		OST-902-1
	Full stroke exercise and stroke	time measurement are	augme	nted tests						÷ •				TM (C)	Q		OST-902-1
•						·· <i>.</i> ,	ويتر					<u>.</u> .		PI	Bi		OST-925
			•.						<i>د</i> , -								
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#### Attachment 10.6 Page 94 of 97 Valve Table

Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	••		Test Type		Test Deferral	Surveillance Test
V6-35C	G-190199 (4)	G-3	В	Act	1	GL	мо	N	0	с	AI	N	Y	FS	Q		OST-902-2
	Full stroke exercise and stroke	time measurement a	re augme	ented tests										TM (C)	Q		OST-902-2
	۰											•		PI	Bi		OST-925
V6-35D	G-190199 (4)	G-3	в	Act	1	GL	мо	N	0	с	AI	N	Y	FS	 Q	<u></u>	OST-902-2
	Full stroke exercise and stroke								•	•				TM (C)	Q		OST-902-2
														·PI	Bi		OST-925
	1			. 100 1		•.	<sup>.</sup>			ч,	بر سر، د						
VCT-13	HBR2-6490 (1)	C-8	A	Pass	2	GA	м	N	LC	с	N/A	Y	N	IJ	App. J		EST-009
•	a tit maar aa am	ر مەربىرىيە مەربىرى			**		-					·					
VCT-18	HBR2-6490 (1)	C-7	A	Pass	0.375	GL	М	N	LC	с	N/A	Y	N	LJ	App. J		EST-046
			`		· · -		-										
VCT-19	HBR2-6490 (1)	D-7	A	Pass	0.375	GL	м	N	LC	С	N/A	Y	N	LĴ	App. J		EST-046
				ers. Sers				-						•		<b>.</b>	
VCT-20	HBR2-6490 (1)	E-8	A	Pass	0.375	GL	м	N	LC	С	N/A	Y	N	ĹĴ	App. J		EST-046
		$C_{\rm ext}$											*				
1004	5070 004 (0)	F-3	С	Act	1						 NI/A	N	M	RL			EST-112
WD-1621	5379-921 (2) AUG	г <b>-3</b>	U	ACI	I	RV	SA	. N .	C	0	N/A	(N	N.	κL.	App. I		201-112
		–			<i></i>	•	: ** 			.•							-
	<b></b> ,,	· ·					i e										
	<u> </u>								÷ .								

		·-				Pa	tachn ge 95 Valve	of 9	7								
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos	Fail Pos	App J Type C				Test Deferral	Surveillance Test
VD-1622	5379-921 (2) AUG	G-3	с	Act	1	RV	SA	N	с	0	N/A	N	N	RL	App. I		EST-112
: · · · · · · · · · · ·						£.,	¢		· -		-						
/D-1623	5379-921 (2) AUG	D-3	С	Act	1	RV	SA	N	с	0	N/A	N	N	RL	App. 1		EST-112
	· · · · · · · · ·	• •		·		:					••		•				
D-1624	5379-921 (2) AUG	E-3	С	Act	1	RV	SA	N	С	0	N/A	N	N	RL	Арр. І		EST-112
· · · · · ·	x				÷	<b>.</b> .			~					<b>.</b> .			•
D-1713	5379-920 (3)	E-7	A/C	Pass	1	СК	SA	N	С	с	N/A	Ŷ	N	LJ	App. J		EST-061
	·· · · · · ·	12. 													· · ·		
D-1721	5379-920 (3)	C-6	A	Act	3	DA	AO	N	0/C	с	c	Y	Ŷ	FS	Q		OST-701-2
														FC	Q		OST-701-2
	. · · · ·		. •											TM (C)	Q		OST-701-2
	. 'u'													, Pl	Bì		OST-707-2
	· · · · · · · · ·													LJ	App. J		OST-933-8
D-1722	5379-920 (3)	C-7	A	Act		DA	AO	N	0/0	с	C	Ŷ	Y	FS	Q		OST-701-2
														FC	Q		OST-701-2
														TM (C)	Q		OST-701-2
	· · · · · ·	` <b>-</b> /												PI	Bi		OST-707-2
. * · ·			• • •									Х., с. С. с.	5	°ĽJ <sup>°</sup>	App. J		OST-933-8
	·				•	•	4					, ·		··· ·		·	

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#### Attachment 10.6 Page 96 of 97 Valve Table

Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size	Valve Type	Act Type	-	Norm Pos	Safe Pos	Fail Pos	Арр Ј Туре С		Test Type		Test Deferral	Surveillance Test
VD-1723	5379-920 (3)	B-7	A	Act	2	DA	AO	Y	O/C	с	с	Y	Y	FS	Q		OST-701-2
														FC	Q		OST-701-2
														TM (C)	Q		OST-701-2
														PI	Bi		OST-707-2
														IJ	App. J		OST-933-24
'D-1728	5379-920 (3)	B-7	A	Act	2	DA	AO	N	0/C	с	С	Y	Ŷ	FS	Q		OST-701-2
														FC	Q		OST-701-2
														TM (C)	Q		OST-701-2
														Pl	Bi		OST-707-2
														LJ	App. J		OST-933-24
D-1786	5379-920 (3)	D-6	A	Act	1	DA	AO	Y	O/C	С	С	Y	Y	FS	Q		OST-701-2
														FC	Q		OST-701-2
														TM (C)	Q		OST-701-2
	· . ·		• ••	i.		· • • •	• · ·							Ы	Bi		OST-707-2
														LJ	App. J		OST-933-16
D-1787	5379-920 (3)	D-7	A	Act	1	DA	AO	Y	0/C	с	с	Ŷ	Ŷ	FS	Q		OST-701-2
														FC	Q		OST-701-2
														TM (C)	Q		OST-701-2
	· · · · ·		•	•		••							-	PI	Bi		OST-707-2
														LJ	App. J		OST-933-16
D-1789	5379-920 (3)	D-7	A	Act	0.75	DA	AO	N	O/C	с	с	Y	Y	FS	Q		OST-701-2
										• •		-		FC	Q		OST-701-2
	ан - Миктич ,									ç. 4.				TM (C)	Q		OST-701-2
		14 5												PI	Bi	.+ X	OST-707-2
			-					··· · .:				-		LJ	App. J		OST-933-25

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Attachment 10.6 Page 97 of 97 Valve Table																	
Valve Number	P&ID (SHT) Remarks	Coord	Cat	Act Pass	Size		Act Type		Norm Pos	Safe Pos		App J Type C				Test Deferral	Surveillance Test
WD-1793	5379-920 (3)	E-6	A .	Pass	1	DA	М	N	LC	С	N/A	Y	N	LJ	App. J		EST-061
WD-1794	5379-920 (3)	D-6	A	Act	0.75	DA	AO	N	O/C	C	с	Y	Y	FS FC TM (C) PI LJ	Q Q Bi App. J		OST-701-2 OST-701-2 OST-701-2 OST-707-2 OST-933-25
			<u>.</u> .		<u> </u>												
	<sup>1</sup>			. <b>.</b>	÷												
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## Attachment 10.7 Page 1 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
5379-1082 (1)	SI-841A	No safety function
· · · ·	SI-841B	No safety function
	SI-877D	Exempt - test valve
	SI-883L	Category B passive manual valve
and the second	SI-883W	Category B passive manual valve
	SI-894	Line blocked by MOD-888
•	. <b>SI-895K</b> (4,1)∑	Category B passive manual valve
· · · · · · · · · · · · · · · · · · ·	SI-895N	Exempt - drain valve
	SI-895P	Category B passive manual valve
1 - <sup>14</sup> (1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	SI-895T	No safety function
	SI-895U	Category B passive manual valve
the Second Second	SI-899B	Category B passive manual valve
$(1,1,2,\dots,n) \in \mathcal{A}^{(n)}$	SI-977	Exempt - vent valve
5379-1082 (2)	SI-878C	Exempt - vent valve
	SI-889C	Exempt - test valve
	SI-891C	Category B passive manual valve
	SI-891D	Category B passive manual valve
	SI-897G	Category B passive manual valve
	, <b>SI-898D</b>	Category B passive manual valve
	SI-898G	Category Bpassive manual valve
	1956 <b>SI-898H</b> , 302	Category B passive manual valve
	~ <b>SJ-898J</b> ( 166) -	Category B passive manual valve
	SI-968	Exempt - vent valve
·	SI-969	Exempt - vent valve
	SI-970	Exempt - ventevalve
	SI-971	Exempt - vent,valve
	SI-972	Exempt - vent valve
	SI-973	Exempt: vent valve
	SI-974	Exempt - vent valve

## Attachment 10.7 Page 2 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	SI-975	Exempt - vent valve
5379-1082 (3)	SI-883M	Category B passive manual valve
	SI-883N	Category B passive manual valve
;	SI-889F	No safety function
	SI-892A	Category B passive manual valve
	SI-892C	Category B <sup>2</sup> passive manual valve
4 a.	SI-892D	Category B passive manual valve
	SI-892E	Category B passive manual valve
ب <sup>د</sup> د	SI-892F	Category B passive manual valve
	SI-892G	Category B passive manual valve
9 - S	SI-892H 100 for	Category B passive manual valve
	SI-896E	Category B passive manual valve
	SI-897H	Category B passive manual valve
	SI-897J	Category B passive manual valve
5379-1082 (4)	SI-850A	Exempt - test valve
5	SI-850B	Exempt - test valve
	8 SI-8500	Exempt - test valve
*	SI-850D and the	Exempt - test valve
≈ <sub>2</sub> .}	∾ SI-850E ((a) ()	Exempt - test valve
3 - <b>1</b> - 16	Content 850F - 1988	Exempt - test valve
1 4 S	18 8 8 <b>8 8 8 7 7 A 1</b> 1 1 1 4	Exempt - test valve
	SI-877B? Şa⊯	Exempt - test valve
	ાં SI-877Cકા લા છા <sup>ક</sup>	Exempt - test valve
	SI-883R	Exempt - maintenance valve
	SI-884A	Exempt - test valve
	SI-884B 100 million	Exempt - test valve
	SI-884C	Exempt - test valve
	SI-884D	Exempt - test valve
	* SI-884E (1975)	Exempt - test valve

## Attachment 10.7 Page 3 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	SI-976	Category B passive manual valve
5379-1082 (5)	HCV-936	Exempt - control valve
	SI-852A	Exempt - drain valve
	SI-852B	Exempt - drain valve
	SI-852C	Exempt - drain valve
	SI-882A	Exempt - drain valve
	SI-882B	Exempt - drain valve
	SI-882C	Exempt - drain valve
	SI-883B	Exempt - maintenance valve
	SI <del>.</del> 883C at	Exempt - maintenance valve
	SI-883E	Exempt - maintenance valve
	SI-883F	Exempt - maintenance valve
	SI-883H	Exempt - maintenance valve
	SI-883J	Exempt - maintenance valve
	SI-912	No safety function
5379-1484 (1)	RHR-754A	Category B passive manual valve
	RHR-754B	Category B passive manual valve
	RHR-755A	No safety function
	RHR-755B	No safety function
	RHR-757A	Category B passive manual valve
	RHR-757B	Category B passive manual valve
	RHR-762A	Exempt - maintenance valve
	, RHR-762B	Exempt - maintenance valve
stand and the	HT DE RHR-764	Category B passive manual valve
	RHR-774	No safety function
· · · · · · · · · · · · · · · · · · ·	RHR-775	No safety function
	RHR-784	Exempt - vent valve
	RHR-785	Exempt-vent valve
	RHR-789	Exempt ∺vent valve

## Attachment 10.7 Page 4 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	RHR-790	Exempt - vent valve
	RHR-791	Exempt - vent valve
	RHR-792	Exempt - vent valve
	RHR-793	Exempt - vent valve
5379-1485	SFPC-836A	No safety function
	SFPC-836B	No safety function
	SFPC-837	No safety function
5379-1485 (1)	SFPC-742	No safety function
2.	SFPC-783	No safety function
• • • •	SFPC-793	No safety function
, 'a	SFPC-796	No safety function
• . ·	SFPC-797	No safety function
	SFPC-798A	No safety function
	SFPC-798B	No safety function
	SFPC-799A	No safety function
and a second second	SFPC-799B	No safety function
	SFPC-799C	No safety function
	SFPC-799D	No safety function
	SFPC-800A	No safety function
	SFPC-800B	No safety function
$t = s_{\rm e}$ (7)	SFPC-801	No safety function
. <b>?</b>	SFPC-802A	No safety function
·	SFPC-802B	No safety function
a da serie de la compañía de la comp	SFPC-802C	Category B Passive manual valve
	SFPC-803	No safety function
	SFPC-804	Category 8 Passive manual valve
	SFPC-805A	No safety function
	SFPC-805B	No safety function
	SFPC-806	No safety function

## Attachment 10.7 Page 5 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	SFPC-808	No safety function
	SFPC-809	No safety function
	SFPC-810	No safety function
	SFPC-811	No safety function
	SFPC-812	No safety function
$t_{i}^{2}$ :	SFPC-813A	No safety function
e s - 20	SFPC-813B	No safety function
	SFPC-813C	No safety function
	SFPC-813D	No safety function
7	SFPC-814A	No safety function
	SFPC-814B	No safety function
	SFPC-815	No safety function
	s SFPC-816A	No safety function
1 ;	SFPC-816B	No safety function
· ,	SFPC-817	No safety function
	as SFPC-818 are	No safety function
	SFPC-819	No safety function
÷.;	SFPC-820	No safety function
	SFPC-821A	No safety function
· 3 **	97. • SFPC-824B (****	No safety function
	SFPC-821C	No safety function
	SFPC-824J	No safety function
	SFPC-838A	No safety function
	SFPC-838B	No safety function
	SFPC-843	No safety function
	SFPC-848	No safety function
5379-1971 (1)	RC-501	Category B passive manual valve
	RC-502	Category B passive manual valve
Apple Part and	RC-505A	Exempt - drain valve

## Attachment 10.7 Page 6 of 40 Excluded Valve Table

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P&ID	Valve No.	Reason For Exclusion
	RC-505B	Exempt - drain valve
	RC-508A	Exempt - drain valve
	RC-508B	Exempt - drain valve
	RC-515A	Exempt - drain valve
	RC-515B	Exempt - drain valve
	RC-542	Category B passive manual valve
	RC-586	Category B passive manual valve
	<b>RC-601</b>	Category B passive manual valve
5379-1971 (2)	PCV-455A	Exempt - control valve
	PCV-455B	Exempt - control valve
	RC-524	No safety function
	RC-525	No safety function
	RC-582	No safety function
5379-353 (1)	* <b>* PS-951</b> ****	Exempt - maintenance valve
	6 <b>PS-953</b> <sup>1</sup> and 1	Exempt - maintenance valve
	PS-955A	Exempt - maintenance valve
	[] <b>PS-955B</b> <sup>(</sup> → <i>L</i> → <sup>2</sup>	Exempt - maintenance valve
	PS-955C	Exempt - maintenance valve
	PS-955D	Exempt - maintenance valve
	PS-955E	Exempt - maintenance valve
	PS-969B <sup>3400</sup>	No safety function
	PS-974A	No safety function
	PS-974B	No safety function
	PS-975	No safety function
	• PS-976	No safety fünction
	PS-977	No safety function
<b>î</b> ,	**************************************	No safety function
	<b>PS-989D</b>	No safety function
5379-376 (1)	CC-701A	Category B passive manual valve

#### Attachment 10.7 Page 7 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	CC-701B	Category B passive manual valve
	CC-701C	Category B passive manual valve
·	CC-703A	Category B passive manual valve
	CC-703B	Category B passive manual valve
As y its	CC-703C)	Category B passive manual valve
the states and a	CC-705A	Category B passive manual valve
	CC-705B	Category B passive manual valve
, star en est	sear <b>CC-7/05C</b> r as a	Category B passive manual valve
en de la secon	CC-710	Category B passive manual valve
π \γΣ <sub>111</sub> β − £ τ	6. CC-711	Category B passive manual valve
	CC-712A	Category B passive manual valve
	CC-712B	Category B passive manual valve
	CC-713A	Category B passive manual valve
	CC-713B	Category B passive manual valve
	CC-733A	Category B passive manual valve
	CC-733B	Category B passive manual valve
	CC-737C	Category B passive manual valve
	CC-737D	Category 3 passive manual valve
	CC-786A	Category B passive manual valve
	1. 1. CC-786B # 1996. 3	Category B passive manual valve
	CC-788A	Category B passive manual valve
	stage <b>CC-788AA</b> gates	Category B passive manual valve
	₩, 200 <b>CC-788₿</b> 200 €	Category B passive manual valve
	11 - 11 CC-788BB	Category B passive manual valve
A Den Barris	CC-788C	Category B passive manual valve
s	CC-788CC	Category B passive manual valve
	CC-788D	Category B passive manual valve
·齐书》 在天空中	CC-788DD	Category B passive manual valve
anton (b) an	CC-788E	Category B passive manual valve

#### Attachment 10.7 Page 8 of 40 Excluded Valve Table

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P&ID	Valve No.	Reason For Exclusion
	CC-788EE	Category B passive manual valve
	CC-788F	Category B passive manual valve
, ,	CC-788FF	Category B passive manual valve
•	CC-788G	Category B passive manual valve
3 	CC-788GG	Category B passive manual valve
* <sup>1</sup> . 1	CC-825A	Category B passive manual valve
, ÷	CC-825B	Category B passive manual valve
j − K Bern 1	CC-825C	Category B passive manual valve
$\partial f = \frac{1}{2} \left( \frac{1}{2} - \frac{1}{2} \right) \left( \frac{1}{2} - \frac{1}{2} \right)$	CC-825D	Category B passive manual valve
. (b. 2000)	/5 <b>CC-825E</b>	Category B passive manual valve
the second second	CC-825F	Category B passive manual valve
(1-p)(0) = (1-p)(1-p)(1-p)	CC-861	Exempt - vent valve
$\frac{1}{2}$ , $\frac{1}{2}$ , $\frac{1}{2}$	** CC-940	Exempt - instrument valve
the state of the s	CC-941	Exempt - instrument valve
1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	CC-942 (1993)	Exempt - vent valve
	CC-943	Exempt - vent valve
and the second	CC-944	Exempt - vent valve
$\sim 10^{-1}$	<b>CC-945</b>	Exempt - vent valve
$r^{2} = r^{2} A^{2} I$	CC-946 00044	Exempt - vent valve
	CC-947 (Marthall)	Exempt - vent valve
and the second second	" <b>RCV-609</b> (1997)	Exempt <sup>i _</sup> vent valve
$[2^{3,1},\sqrt{3},1]=f^{-1}(2^{-1})$	TCV-659A	Exempt - control valve
$\mathcal{J}^{\prime}\mathcal{L}^{\prime}$ , $\mathcal{L}^{\prime}$ , $\mathcal{L}^{\prime}$ , $\mathcal{L}^{\prime}$ , $\mathcal{L}^{\prime}$	TCV-659B	Exempt - control valve
	TCV-659C	Exempt - control valve
5379-376 (2)	CC-732	Category B passive manual valve
	CC-737B	Category B passive manual valve
	CC-746A	Category B passive manual valve
	CC-746B	Category B passive manual valve
· · · · · · · · · · · · · · · · · · ·	5 CC-748A	Category B passive manual valve

### Attachment 10.7 Page 9 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	CC-748B	Category B passive manual valve
· · · · ·	CC-777	Category B passive manual valve
	CC-780	Category B passive manual valve
$(1, 1) \in \mathcal{O}_{M}$	CC-781	Category B passive manual valve
· , · · ·	CC-784	Category B passive manual valve
, <b>(</b> , (	CC-785	Category B passive manual valve
Awar (Maria Para)	CC-792A	Category B passive manual valve
t for a second	CC-792B	Category B passive manual valve
. 10 <sup>-</sup>	CC-830A	Category B passive manual valve
(a)	CC-833	Category B passive manual valve
(x,y) = (x,y	CC-834	Category B passive manual valve
State Constant of	TCV-144	Exempt - control valve
5379-37 <u>6 (3)</u>	CC-717	No safety; function
	CC-718A	Category B passive manual valve
di second	CC-718B	Category B passive manual valve
	CC-718C	Category B passive manual valve
5	CC-7,19A	Category B passive manual valve
	CC-719B	Category B passive manual valve
	CC-719C	Category B passive manual valve
	CC-719D	Category B passive manual valve
	CC-719D1	Category B passive manual valve
	CC-719D2	Category B passive manual valve
	CC-719D3	Category Bypassive manual valve
	CC-719E	Category B passive manual valve
and the first state of the		Category B passive manual valve
e		Category B passive manual valve
	CC-720C	Category B passive manual valve
	CC-723A	Category B passive manual valve
a differ de la	CC-723B	Category B passive manual valve

## Attachment 10.7 Page 10 of 40 Excluded Valve Table

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P&ID	Valve No.	Reason For Exclusion
-	CC-723C	Category B passive manual valve
	CC-724A	Category B passive manual valve
	CC-724B	Category B passive manual valve
	CC.724C	Category B passive manual valve
	CC-724D	Category B passive manual valve
	CC-727A	Category B passive manual valve
7	CC-727B	Category B passive manual valve
\$	CC-727C	Category B passive manual valve
• •	CC-728A	Category B passive manual valve
19. j. e. j.	CC-728B	Category B passive manual valve
s	CC-728C	Category B passive manual valve
5379-376 (4)	CC-728D	Category B passive manual valve
	* CC-769A	Category B passive manual valve
	CC-769B	Category B passive manual valve
· 2 ·	CC-772	Category B passive manual valve
•	CG-775	Category B passive manual valve
1. i. s	CC-776	Category B passive manual valve
1. S. 1	CC-791A	Abandoned per EC 84732
94 - L	66 CC-792C 66 San	Category B passive manual valve
4 i	CC-792D 3 1 1 1	Category B passive manual valve
· · · · · ·	CC-794A	Category B passive manual valve
$\gamma \in \{1,2,2,2\}$	CC-794B	Category B passive manual valve
	CC-795A	Category B passive manual valve
s • • • •	CC-795B	Category B passive manual valve
	CC-795C	Category B passive manual valve
	CC-795D	Category B passive manual valve
	CC-795E	Category B passive manual valve
;	CC-795F	Category B passive manual valve
	4 · · · <sup>14</sup> CC-795G-2011 - 2	Category B passive manual valve

## Attachment 10.7 Page 11 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	CC-795H	Category B passive manual valve
	CC-795J	Category B passive manual valve
1 - De - 1	CC-795K	Category B passive manual valve
14 - A A	CC-826A	Category B passive manual valve
· · · ·	CC-826B	Category B passive manual valve
, in a	CC-826C	Category B passive manual valve
• , <mark>\$</mark> 1	CC-826D	Category B passive manual valve
Second States and States	CC-826E	Category B passive manual valve
	N CC-826F	Category B passive manual valve
11. (J. 1943)		Category B passive manual valve
	CC-827B	Category B passive manual valve
	CC-830B	Category B passive manual valve
5379-684 (1)	CVC-1102	No safety function
,	CVC-1161	No safety function
5379-685 (1)	CVC-202B	Category B passive manual valve
	-CVC-205A	Category B passive manual valve
	CVC-205B	Category B passive manual valve
	CVC-293B	No safety:function
	CVC-293D	No safety function
	CVC-302A	No safety function
	CVC-302B	No safety function
	CVC-302C	No safety function
	CVC-303A	No safety function
	CVC-303B	No safety function
	CVC-303C	No safety function
	CVC-304A	Category B passive manual valve
	CVC-304B	Category B passive manual valve
	CVC-304C	Category B passive manual valve
	CVC-304D	Category B passive manual valve

## Attachment 10.7 Page 12 of 40 Excluded Valve Table

P&ID		Valve No.	Reason For Exclusion
		CVC-304E	Category B passive manual valve
	· · ·	CVC-304F	Category B passive manual valve
		CVC-304G	Category B passive manual valve
		CVC-304H	Category B passive manual valve
	*	CVC-304J	Category B passive manual valve
	t de la companya de	CVC-304K	Category B passive manual valve
	3. j. – 1	CVC-304L	Category B passive manual valve
	way to an an	CVC-304M	Category B passive manual valve
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CVC-306A	Category B passive manual valve
	and the second	CVC-306B	Category B passive manual valve
	en transformation	CVC-306C	Category B passive manual valve
	and the products	CVC-308	Category B passive manual valve
		CVC-309D	No safety function
		CVC-312	Category B passive manual valve
		CVC-318	No safety function
	e i strik i s	CVC-320	No safety function
	1997 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 -	CVC-380	No safety function
		CVC-389	No safety function
		CVC-474	Category B passive manual valve
		HCV-121	Exempt <sup>2</sup> contrôl valve
	• •	HCV-137 5	Exempt - control valve
		HCV-142	Exempt - control valve
		LCV-460A	No safety function
		LCV-460B	No safety function
5379-0	685 (2)	CVC-249	No safety function
	energia de la companya de la compa	CVC-250	No safety function
		CVC-253	No safety function
		CVC-254	No safety function
		the spatial suggestion of the	

#### Attachment 10.7 Page 13 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	CVC-256	Category B passive with no remote position indication
·i	CVC-259A	No safety function
,	CVC-259C	No safety function
	CVC-264	Category B passive manual valve
	CVC-267	Category B passive manual valve
	CVC-268	Category B passive manual valve
	CVC-269	Category B passive manual valve
	CVC-270	Category B passive manual valve
	CVC-271	No safety function
	CVC-272	Category B passive manual valve
	CVC-275A	No safety function
	CVC-275B	No safety function
	CVC-275C	No safety function
	CVC-277A	Category B passive manual valve
	CVC-277B	Category B passive manual valve
	CVC-277C	Category B passive manual valve
	CVC-286	Category B passive manual valve
	CVC-287	Category B passive manual valve
	CVC-288	Category B passive manual valve
	nd No. <b>CVÇ-289</b> 767 (d. 1	Category B passive manual valve
	en en <b>CVC-290</b> august f	Category B passive manual valve
	CVC-291	Category B passive manual valve
	• GVC-309B	No safety function
	CVC-309C	No safety function
	CVC-309E	No safety function
	CVC-321	No safety function
$\mathcal{A}^{(N,N)} = \mathcal{A}^{(N,N)}$	CVC-352	No safety function
$M^2 = \sqrt{-M_{\rm eff}^2}$	CVC-353	Category B passive manual valve

## Attachment 10.7 Page 14 of 40 Excluded Valve Table

CVC-354No safety functionCVC-355No safety functionCVC-356Category B passive manual valveCVC-361No safety functionCVC-362No safety functionCVC-364No safety functionCVC-366No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-460Category B passive manual valveFCV-113ANo safety functionFCV-114BNo safety functionFCV-114BNo safety functionLCV-115AExempt - control valvePCV-117Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valvePCV-119Exempt - control valvePCV-145Category B passive manual valveCVC-226BCategory B passive manual valveCVC-227ACategory B passive manual valveCVC-244No safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-244BNo safety function </th <th>P&amp;ID</th> <th>Valve No.</th> <th>Reason For Exclusion</th>	P&ID	Valve No.	Reason For Exclusion
CVC-356Category B passive manual valveCVC-361No safety functionCVC-362No safety functionCVC-364No safety functionCVC-366No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionFCV-113ANo safety functionFCV-114ANo safety functionFCV-114BNo safety functionFCV-115AExempt - control valvePCV-117Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valvePCV-145Exempt - control valvePCV-145No safety functionCVC-226BCategory B passive manual valveCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety function	·* .	CVC-354	No safety function
CVC-361No safety functionCVC-362No safety functionCVC-364No safety functionCVC-366No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionCVC-368No safety functionFCV-113ANo safety functionFCV-114ANo safety functionFCV-114BNo safety functionFCV-115AExempt - control valvePCV-117Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valvePCV-119Exempt - control valveTCV-143No safety function5379-685'(3)CVC-226BCVC-227ACategory B passive manual valveCVC-227ACategory B passive manual valveCVC-244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-244ANo safety functionCVC-247BNo safety functionCVC-244ANo safety functionCVC-247BNo safety functionCVC-244ANo safety function		CVC-355	No safety function
CVC-362No safety functionCVC-364No safety functionCVC-366No safety functionCVC-368No safety functionCVC-600Category B passive manual valveFCV-113ANo safety functionFCV-114ANo safety functionFCV-114ANo safety functionFCV-114BNo safety functionFCV-115AExempt - control valvePCV-117Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valveTCV-143No safety function5379-685'(3)CVC-226BCVC-227ANo safety functionCVC-2244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-244ANo safety functionCVC-247BNo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-244ANo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247ANo safety function <td></td> <td>CVC-356</td> <td>Category B passive manual valve</td>		CVC-356	Category B passive manual valve
CVC-364No safety functionCVC-366No safety functionCVC-366No safety functionCVC-368No safety functionCVC-600Category B passive manual valveFCV-113ANo safety functionFCV-114ANo safety functionFCV-114BNo safety functionFCV-114BNo safety functionFCV-114ANo safety functionFCV-114BNo safety functionLCV-115AExempt - control valvePCV-117Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valvePCV-145Exempt - control valvePCV-1237No safety functionCVC-226BCategory B passive manual valvePCV-239BNo safety functionCVC-244No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247ANo safety function		CVC-361	
No safety functionVCV-364CVC-366VCV-366No safety functionVCV-366No safety functionVCV-368No safety functionVCV-600Category B passive manual valveVCV-600No safety functionVCV-600No safety functionVCV-113ANo safety functionFCV-114BNo safety functionFCV-114BNo safety functionLCV-115AExempt - control valveVCV-119Exempt - control valveVCV-119Exempt - control valveVCV-119Exempt - control valveVCV-1237No safety functionVCV-1237No safety functionVCV-226BNo safety functionVCV-227ACategory B passive manual valveVCV-244No safety functionVCV-247ANo safety functionVCV-247BNo safety functionVCV-247BNo safety functionVCV-247BNo safety functionVCV-247BNo safety function		CVC-362	No safety function
No safety functionCVC-366No safety functionCVC-368No safety functionCVC-600Category B passive manual valveCVC-600Category B passive manual valveFCV-113ANo safety functionFCV-114BNo safety functionFCV-114BExempt - control valveFCV-118DExempt - control valveFCV-145Exempt - control valveFCV-145FCV-145FCV-145Exempt - control valveFCV-145<	$\dot{t}$		
Average of the second			No safety function
CVC-600Category B passive manual valveFCV-113ANo safety functionFCV-114ANo safety functionFCV-114BNo safety functionFCV-114BNo safety functionFCV-114BNo safety functionLCV-115AExempt - control valveFCV-119Exempt - control valveFCV-143Exempt - control valveFCV-226BExempt - control valveFCV-227ANo safety functionFCV-244Exempt - control valveFCV-244No safety functionFCV-247ANo safety functionFCV-247ANo safety functionFCV-247ANo safety functionFCV-247ANo safety functionFCV-247ANo safety functionFCV-247ANo safety function	$\gamma_{2} = \gamma_{1} + \phi^{2}$	CVC-366	No safety function
FCV-113ANo safety functionFCV-114ANo safety functionFCV-114BNo safety functionFCV-114BNo safety functionLCV-115AExempt - control valveFCV-115AExempt - control valveFCV-115AExempt - control valveFCV-115AExempt - control valveFCV-119FCV-1237FCV-1237FCV-1237FCV-1237FCV-2247FCV-2247FCV-2247FCV-2247FCV-2478FCV-2247FCV-2478FCV-2448FCV-2478FCV		CVC-368	No safety function
FCV-114A       No safety function         FCV-114B       No safety function         LCV-115A       Exempt - control valve         LCV-115A       Exempt - control valve         PCV-117       Exempt - control valve         PCV-118A       Exempt - control valve         PCV-118A       Exempt - control valve         PCV-119       Exempt - control valve         PCV-119       Exempt - control valve         PCV-119       Exempt - control valve         PCV-145       Exempt - control valve         PCV-145       Exempt - control valve         PCV-1237       Exempt - control valve         PCV-1237       No safety function         S379-685 (3)       CVC-1237         PCV-226B       Category B passive manual valve         PCV-227A       Exempt - Control valve         PCV-227A       Exempt - Control valve         PCV-226B       Category B passive manual valve         PCV-244       No safety function         PCV-244       No safety function         PCV-247A       No		CVC-600	Category B passive manual valve
FCV-114BNo safety functionLCV-115AExempt - control valveNo safety functionExempt - control valveNo safety functionCVC-143Safety functionCVC-226BNo safety functionCVC-227ANo safety functionCVC-239BNo safety functionCVC-244CVC-244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247ANo safety function		FCV-113A	No safety function
LCV-115AExempt - control valvePCV-117Exempt - control valvePCV-118Exempt - control valvePCV-119Exempt - control valvePCV-127No safety functionPCV-1237CVC-226BPCV-1237Category B passive manual valvePCV-227ANo safety functionPCV-244No safety functionPCV-245No safety functionPCV-247ANo safety functionPCV-247ANo safety functionPCV-247BNo safety functionPCV-247BNo safety functionPCV-247ANo safety funct		FCV-114A	No safety function
No. 36.000PCV-117A. A.Exempt - control valveNo. 36.000PCV-118Exempt - control valveNo. 36.000PCV-119Exempt - control valvePCV-145PCV-145Exempt - control valvePCV-145PCV-143Exempt - control valvePCV-145PCV-143Exempt - control valvePCV-145PCV-143No safety functionS379-685'(3)CVC-1237No safety functionS379-685'(3)CVC-226BCVC-226BCVC-227ACategory B passive manual valveCVC-247ANo safety functionCVC-247ANo <t< td=""><td></td><td>FCV-114B</td><td>No safety function</td></t<>		FCV-114B	No safety function
PCV-118Exempt - control valvePCV-119Exempt - control valvePCV-145Exempt - control valvePCV-145Exempt - control valveTCV-143No safety function5379-685'(3)CVC-1237CVC-226BCategory B passive manual valveCVC-227ACategory B passive manual valveCVC-2244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-284ACategory B passive manual valveCVC-284ANo safety functionCVC-284ACategory B passive manual valve		LCV-115A	Exempt - control valve
Autom Add PCV-119Exempt - control valvePCV-145Exempt - control valvePCV-145Exempt - control valvePCV-143No safety functionS379-685'(3)CVC-1237CVC-1237No safety functionCVC-226BCategory B passive manual valveCVC-227ACategory B passive manual valveCVC-244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-284ANo safety functionCVC-284ANo safety function	$\sum_{i=1}^{n} (i_i + i_j) = 1$	PCV-117	Exempt - control valve
PCV-145Exempt - control valve5379-685 (3)TCV-143No safety function5379-685 (3)CVC-1237No safety function5379-685 (3)CVC-226BCategory B passive manual valve5379-685 (3)CVC-227ACategory B passive manual valve5379-685 (3)CVC-227ACategory B passive manual valve5379-685 (3)CVC-239BNo safety function5379-685 (3)CVC-247ANo safety function5379-685 (3)CVC-245No safety function5379-685 (3)CVC-247ANo safety function5379-685 (3)CVC-284ACategory B passive manual valve		PCV-118 3 3	Exempt - control valve
No safety function5379-685°(3)CVC-1237No safety functionCVC-226BCVC-226BCategory B passive manual valveCVC-227ACategory B passive manual valveCVC-227ACVC-239BCVC-244No safety functionCVC-244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-284ANo safety functionCVC-284ANo safety functionCVC-284ANo safety function	$M_{\rm eff} = -M_{\rm eff} = -M_{\rm eff}$	PCV-119	Exempt - control valve
5379-685 (3) CVC-1237 No safety function CVC-226B CVC-226B CVC-226B CVC-226B CVC-227A CVC-227A CVC-227A CVC-227A CVC-227A CVC-239B CVC-239A CVC-239B CVC-239B CVC-239B CVC-239A CVC-239B CVC-239B CVC-239B CVC-239B CVC-239B CVC-239A CVC-239B CVC-239B CVC-239B CVC-239A CVC-239A CVC-239A CVC-239A CVC-239A CVC-239A CVC-239A CVC-239A CVC-239A CVC-239B CVC-23	$\epsilon = -\epsilon + \epsilon + \epsilon$	PCV-145	Exempt - control valve
CVC-226B       Category B passive manual valve         CVC-227A       Category B passive manual valve         CVC-227A       Category B passive manual valve         CVC-239B       No safety function         CVC-244       No safety function         CVC-245       No safety function         CVC-247A       No safety function         CVC-247A       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247A       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247B       No safety function	$\mathrm{d} t_{\mathrm{eff}} = \mathrm{d} t_{\mathrm{eff}} + \mathrm{d} t_{\mathrm{eff}} + \mathrm{d} t_{\mathrm{eff}} + \mathrm{d} t_{\mathrm{eff}}$	TCV-143	No safety function
Additional CVC-227A       Category B passive manual value         Additional CVC-239B       No safety function         CVC-244       No safety function         CVC-245       No safety function         CVC-247A       No safety function         CVC-247A       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247B       No safety function         CVC-247A       No safety function         CVC-247B       No safety function         CVC-247A       No safety function         CVC-247B       No safety function         CVC-247A       No safety function	5379-685 (3)	CVC-1237	No safety function
CVC-239BNo safety functionCVC-244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-247ACategory B passive manual valve	12 A. A. A. A. A. A. A.	CVC-226B	Category B passive manual valve
CVC-244No safety functionCVC-245No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247BNo safety functionCVC-284ACategory B passive manual valve	and the second of the	CVC-227A	Category B passive manual valve
CVC-245No safety functionCVC-247ANo safety functionCVC-247BNo safety functionCVC-247BCategory B passive manual valve	en ner ser en en en en en	CVC-239B	No safety function
CVC-247ANo safety functionCVC-247BNo safety functionCVC-284ACategory B passive manual valve		CVC-244	No safety function
CVC-247ANo safety functionCVC-247BNo safety functionCVC-284ACategory B passive manual valve		CVC-245	No safety function
CVC-247BNo safety functionCVC-284ACategory B passive manual valve		CVC-247A	
CVC-284A Category B passive manual valve		CVC-247B	
			•
		CVC-284B	Category B passive manual valve

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# Attachment 10.7 Page 15 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	CVC-328	No safety function
	CVC-329	Category B passive manual valve
	CVC-331	Category B passive manual valve
	<i>с</i> с <b>СVС-332</b>	Category B passive manual valve
	CVC-334	Category B passive manual valve
	CVC-335	Category B passive manual valve
	CVC-336	Category B passive manual valve
	CVC-337	Category B passive manual valve
	<b>CVC-338</b>	Category B passive manual valve
	CVC-340	Category B passive manual valve
	CVC-343A	No safety function
	• CVC-344	Category B passive manual valve
	CVC-345	Category B passive manual valve
	CVC-347	Category B passive manual valve
	CVC-348	Category B passive manual valve
	<b>CVC-375</b> ,	Category B passive manual valve
	CVC-379	Category B passive manual valve
	CVC-398A	No safety function
	CVC-398B	No safety function
5379-686 (1)	CVC-1100	No safety function
	CVC-1101	No safety function
	CVC-1103	No safety function
	CVC-1104	No safety function
$f_{1} \sim f_{2} + \frac{1}{2} + f_{1}$	CVC-1105	No safety function
	CVC-1106	No safety function
	CVC-1107	No safety function
2	CVC-1108	No safety function
· · ·	CVC-1109	No safety function
177507 40 P.T	CVC-1111	No safety function

#### Attachment 10.7 Page 16 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion	••••••••••••••••••••••••••••••••••••••
· · ·	CVC-1114A	No safety function	
	CVC-1114B	No safety function	
	CVC-1114C	No safety function	
	CVC-1115	No safety function	
1997 - 18 <sup>9</sup>	CVC-1116A	No safety function	
	CVC-1116B	No safety function	
	CVC-1116C	No safety function	
•	CVC-1122	No safety function	
	• CVC <sup>2</sup> 1123	No safety function	
· i.	CVC-1124	No safety function	
	CVC-1125	No safety function	
, `` <b>t</b> '	CVC-1129	No safety function	
· *	CVC-1130	No safety function	
. · · ·	CVC-1131	No safetỳ function	
	CVC-1241A	No safety function	
<u>д</u> й	CVC-1241B,	No safety function	
1997 - 1997 -	CVC-1241C	No safety function	
5379-920 (1)	WD-3316	No safety function	
5379-921 (2)	WD-1676	No safety function	
	·WD-1677	No safety function	· · ·.
	WD-1679	No safety function	
	WD-3332	No safety function	
	WD-3335	No safety function	
G-190196 (1)	MS-10A	Category B passive manual valve	
	MS-11A Data Data	Category B passive manual valve	
	MS-12A	Category B passive manual valve	
	MS-13	Exempt - instrument valve	
	MS-14	Exempt - instrument valve	
	MS-154	Category B passive manual valve	

# Attachment 10.7 Page 17 of 40 Excluded Valve Table

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# Attachment 10.7 Page 18 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	AFW-22	Category B passive manual valve
	AFW-28	Category B passive manual valve
. , ,	AFW-29	Category B passive manual valve
	AFW-4	Category B passive manual valve
1. A A A A A A A A A A A A A A A A A A A	AFW-42	Category B passive manual valve
. ·	AFW-43	Category B passive manual valve
$\mathcal{O}_{n,k} = \{i_1, \dots, i_k\} \in \mathcal{O}_{n,k}$	AFW-51	Exempt - drain valve
. ť,	AFW-53	Category B passive manual valve
1	AFW-54	Category B passive manual valve
$(1, \dots, n)$	AFW-55	Category B passive manual valve
;.	AFW-62	Category B passive manual valve
$\frac{1}{2}$	AFW-63	Category B passive manual valve
	AFW-64	Category B passive manual valve
5	FW-201	Category B passive manual valve
	FW-203	Category B passive manual valve
$\mathbf{Y}_{i,j} = \{i,j\} \in \mathcal{I}_{i,j}$	FW-205	Category B passive manual valve
	FW-5A	Category B passive manual valve
· 2 · · · ·	FW-5B	Category B passive manual valve
$1 + 2^{n+1}$	FW-5C	Category B passive manual valve
<u>,</u> 10, 62,	FW-6A	Category B passive manual valve
	FW-6B	Category B passive manual valve
	FW-6C	Category B passive manual valve
$[M_{12}^{1},\dots,M_{1}^{n},\dots,M_{1}^{n}] = [f]$		Exempt - maintenance valve
to a second second	FW-78	Exempt - maintenance valve
· · · ·	FW-7C <sup>1, #*</sup> 31, - * - 1	Exempt - maintenance valve
G-190199 (1)	SW-197	Exempt - maintenance valve
	SW-198	Exempt - maintenance valve
8. <u>.</u> 1	SW-199	Exempt - maintenance valve
G-190199 (10)	SW-106	Exempt - maintenance valve
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## Attachment 10.7 Page 19 of 40 Excluded Valve Table

P&ID State	Valve No.	Reason For Exclusion
· · · · ·	SW-243	Exempt - maintenance valve
, <b>'</b>	SW-246	Category B passive manual valve
	SW-252	Category B passive manual valve
$\frac{4}{2}$ $\frac{3}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	SW-253	Category B passive manual valve
÷, , `	SW-259	Category B passive manual valve
$M_{AB} \sim$	SW-542	No safety function
the design of the	SW-543	No safety function
A. P. S. A. S. C. S.	SW-75	Category B passive manual valve
$\sum_{i=1}^{n} \frac{1}{2} \sum_{i=1}^{n} \frac{1}{2} \sum_{i$	SW-76	Category B passive manual valve
an an tao ang	SW-77	Category B passive manual valve
$\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{i=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{n}\sum_{i=1}^{n}\sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{i=1}^{$	SW-78	Category B passive manual valve
a star a tar a tar a tar	SW-900	Exempt - maintenance valve
and the second second	SW-914	Exempt - maintenance valve
$I_{\rm eff} = I_{\rm eff} + I_{\rm eff}$	SW-922	Category B passive manual valve
· ••••••••••••••••••••••••••••••••••••	SW-927	Category B passive manual valve
	TCV-1902A	No safety function
	V6-146A	Exempt - vent valve
	V6-146B	Exempt - vent valve
G-1901:99 (2)	SW-187	Category B passive manual valve
1. 46 W - 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		Category B passive manual valve
the state of the s	SW-190 (1997) (1997)	Category B passive manual valve
●公司工作者(4) → 例告	SW-203.	Category B passive manual valve
and the second second	SW-204	Category B passive manual valve
	SW-205	Category B passive manual valve
and the second second second second	SW-206	Category B passive manual valve
$c = c^2 + 2c^2 c = 3 + c$	SW-5	Category B passive manual valve
	SW-6	Category B passive manual valve
the second states of the	SW-7	Category B passive manual valve
$(W_{i}) = (W_{i}) = (W_{i}) = 0$	SW-8	Category B passive manual valve

## Attachment 10.7 Page 20 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
ter and	SW-839	Category B passive manual valve
••••••	SW-845	Category B passive manual valve
· · · ·	SW-851	Category B passive manual valve
$z = -\frac{1}{2} e^{-\frac{1}{2} t} e^{\frac{1}{2} t}$	SW-857	Category B passive manual valve
	SW-963	Exempt - instrument valve
	SW-964	Exempt - instrument valve
G-190199 (4)	SW-630	Category B passive manual valve
$p^{(d)} = t^{(d)} + c^{(d)} \tilde{r}_{i}^{(d)}$	SW-632	Category B passive manual valve
$(1 - \delta c_{1}) = c_{1} + c_{2}^{2}$	SW-634	Category B passive manual valve
· • • • • • • • • • •	SW-636	Category B passive manual valve
G-190199 (5)	3 SW-79A	Category 3 passive manual valve
*)	SW-81	Category B passive manual valve
G-190199 (6)	( <b>SW-85</b> ) (14)	Category B passive manual valve
:	SW-86	Category B passive manual valve
	SW-87	Category B passive manual valve
	SW-88	Category B passive manual valve
	SW-89	Category B passive manual valve
- ()	SW-90	Category B passive manual valve
and the second	'SW-91 (1972) (197	Category B passive manual valve
$(g, b) \in \mathbb{R}^{n \times n}$ is a $(g, f) \in \mathbb{R}$	SW-92200230	Category B passive manual valve
	SW <del>,</del> 93∀ (2004)	Category B passive manual valve
$C_{ij} = C_{ij} = 0 + \frac{1}{2} C_{ij} +$	₩ <b>SW-965</b> ™ (1)	Category B passive manual valve
$(f_1,\ldots,f_{k+1},\ldots,f_{k+1})$	SW-966-2 0	Category B passive manual valve
Ale and a	SW-967	Category B passive manual valve
· · · · · · · · · · ·	SW-968	Category B passive manual valve
G-190199 (7)	SW-24	Category B passive manual valve
	SW-25	Category B passive manual valve
an an an an a	SW-26	Category B passive manual valve
· · · · · ·	27 SW-27 AM2640	Category B passive manual valve

# Attachment 10.7 Page 21 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
· · · · ·	SW-23	Category B passive manual valve
$s = 2\pi s + 2\pi t g$	SW-284	Category B passive manual valve
$\frac{1}{2}$	SW-29	Category B passive manual valve
$\Lambda = -i$	SW-307	Category B passive manual valve
÷ : : :	SW-3112 (1999)	Category B passive manual valve
	SW-32	Category B passive manual valve
	SW-33 (	Category B passive manual valve
25. 2 1	SW-503	Category B passive manual valve
Branka an Inner an I	SW-948	Exempt - maintenance valve
	SW-958	Exempt - maintenance valve
	SW-959	Exempt - maintenance valve
	SW-960	Exempt - drain valve
G-190199 (8)	SW-54	No safety function
. •	SW-61	No safety function
· * :	SW-68	Category B passive manual valve
G-190199 (9)	FCV-4701	Exempt - control valve
	FCV-4702	Exempt;;;;control valve
	SW-100	Category B passive manual valve
Charles States	a SW-102 ( <sub>a</sub> s jas )	Category B passive manual valve
	SW-109	Category B;passive manual valve
	SW-110	Category B passive manual valve
م ويون الله المراجع المول	SW-112	Category B passive manual valve
	SW-113 (3) (5)	Category B passive manual valve
a dha isidan sa	SW-20	Category B passive manual valve
	SW-21	Category B passive manual valve
1947 - Antonio Antonio	SW-260	Exempt - instrument valve
te itte itt som en	SW-270	Category B passive manual valve
4 n.S	SW-52	Category B passive manual valve
	SW-53	Category B passive manual valve

### Attachment 10.7 Page 22 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
1	SW-739	Category B passive manual valve
1.14	SW-740	Category B passive manual valve
. · · ·	SW-866	Category B passive manual valve
···· >	SW-869	Category B passive manual valve
(, )	SW-871	Category B passive manual valve
and the second	SW-873	Category B passive manual valve
and the second	SW-875	Category B passive manual valve
2000 - 19 M	SW-877	Category B passive manual valve
G-190204A (1)	DA-28	Category B passive manual valve
	DA-3A	No safety function
	<b>DA-3B</b>	No safety function
	DA-40	Category B passive manual valve
	DA-45	Category B passive manual valve
G-190204D (2)	<b>FO-13</b>	Category B passive manual valve
a station of	FO-14 - March 1995	Category B passive manual valve
	FO-176A	Category B passive manual valve
	FO-176B	Category B passive manual valve
5. a'	FO-177A	Category B passive manual valve
· · · · · · · · · · · · · · · · · · ·	FO-177B	Category B passive manual valve
	FO-178A00018	Category B passive manual valve
	6 FO-178B	Category B passive manual valve
机合体的	5 <b>FO-179A</b> (1997)	Category B passive manual valve
$\sum_{i=1}^{N} \frac{1}{i} \left[ \frac{1}{i} + \frac{1}{i} \right] = \frac{1}{i} \left[ \frac{1}{i} + \frac{1}{i} \right]$	FO-179B (39)	Category B passive manual valve
	FO-191A	Category B passive manual valve
T = T	FO-191B	Category B passive manual valve
	FO-192A	Category B passive manual valve
	FO-192B	Category B passive manual valve
· : <sup>1</sup>	FO-193A	Exempt - maintenance valve
· · · ·	FO-193Bolicesia	Exempt - maintenance valve

# Attachment 10.7 Page 23 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
·	FO-194A	Exempt - test valve
	FO-194B	Exempt - test valve
	FO-195A	Exempt - maintenance valve
	. <b>F@-195B</b> (6)	Exempt maintenance valve
	FO-196A	Category B passive manual valve
·	FO-196B	Category B passive manual valve
$\sqrt{1-1}$ $r = -\frac{1}{2} r = \sqrt{2}$	FO-197A	Category B passive manual valve
to prove the Da	FO-197B	Category B passive manual valve
$(\hat{a}, \hat{a}, \hat{a}, \hat{a}, \hat{a}, \hat{a}) = \hat{c}_{\hat{a}}$	FO <del>;</del> 19A;	Category B passive manual valve
$(1, 2) \in \mathbb{R}^{3 \times 3}$	- FO <sub>7</sub> 19B	Category B passive manual valve
$H_{\rm ext} = [r_{\rm ext} + r_{\rm ext}]^2$	FO-20A	Exempt - instrument valve
$\phi_{ij} = \phi_{ij} + \phi_{ij}$	FO-20B	Exempt - instrument valve
	FO-23A	Category B passive manual valve
	FO-23B	Category B passive manual valve
	FO-24	Category B passive manual valve
	FO-25A	Category B:passive manual valve
і, 12 <sub>1</sub> , 12	FO-25B	Category B passive manual valve
	FO-26A	No safety function
b = b + 1	FO-26B	No safety function
1. 1917 (p. 1987) - 194	FO-28A	Category Bimanual passive valve
19 <b>18</b> 18181 - 1990 - 197	FO-288 (5) (1000)	Category B manual passive valve
G-190234 (1)	SGB-30;	No safety function
the first states from the second	SGB-31	No safety function
and the Article	SGB-32	No safety/function
G-190261 (1)	PP-100B	Category B passive manual valve
. 4	PP-101B	Category B passive manual valve
ge kan se se se se	PP-102B	Category B passive manual valve
All a state of the second	PP-103B	Category B passive manual valve
	PP-104B	Category B passive manual valve

### Attachment 10.7 Page 24 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
<u></u> T	PP-105B	Category B passive manual valve
	PP-106B	Category B passive manual valve
	PP-107B	Category B passive manual valve
	α, * ακ. α <b>ΡΡ∸108Β</b> * *	Category B passive manual valve
	PP-109B	Category B passive manual valve
	PP-110B	Category B passive manual valve
	PP-111B	Category B passive manual valve
	이 이 바이 10 PP-112B 공연하지	Category B passive manual valve
		Category B passive manual valve
	. 25 metatri e trada <b>PP-14B</b> detat	Category B passive manual valve
	. N. № PP-15B (4019)	Category B passive manual valve
	PP-16A	Category B passive manual valve
	PP-16B	Category B passive manual valve
	PP-17A	Category B passive manual valve
	e i i i i i i i <b>PP-17B</b> i i i i	Category B passive manual valve
	PP-18A	Category B passive manual valve
	stan an 1995. <b>PP∺18B</b> raattan (*	Category B passive manual valve
	PP-19A'	Category B passive manual valve
	் <b>PP-19B</b> லில்கல	Category B passive manual valve
	2010 - 2010 - 11 ann a <b>PP-20A</b> r (1994)	Category B passive manual valve
	97. 2000 - 1993 - 199 <b>-208</b> Martin	Category B passive manual valve
	PP-21A	Category B passive manual valves (Control of Category B passive manual valves)
	<b>PP-21B</b>	Category B passive manual valve
	<b>PP-22B</b> <sup>(1)</sup>	Category B passive manual valve
	PP-23B	Category B passive manual valve
	PP-24B	Category B passive manual valve
	PP-25B	Category B passive manual valve
		Category B passive manual valve
	₩11.2.2.2.2.1.2.1.2. <b>PP-27B</b> 5.3895.5.2	Category B passive manual valve

### Attachment 10.7 Page 25 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	PP-28B	Category B passive manual valve
	PP-29B	Category B passive manual valve
	PP-300B	Category B passive manual valve
	PP-301B	Category B passive manual valve
	<b>PP-302B</b> <sub>12</sub>	Category B passive manual valve
	PP-303B	Category <sup>:</sup> B passive manual valve
	PP-304B	Category B passive manual valve
	PP-305B	Category B passive manual valve
	PP-306B	Category B passive manual valve
	2004 - 1993 - 1994 <b>PP-307B</b>	Category B passive manual valve
	na alastrative PP-30B	Category B passive manual valve
	PP-31A	Category B passive manual valve
	ante ante de PP-31B 🙀	Category B passive manual valve
	PP-32A	Category B passive manual valve
	PP-32B	Category B passive manual valve
	PP-33A	Category B passive manual valve
	1909 - 1919 - <b>P.P33B</b> - 1919	Category B passive manual valve
	PP-34A	Category B passive manual valve
		Category B passive manual valve
	n (National State <b>PP-35A</b> (1,20)-30	Category B passive manual valve
	e Gauge many or PP-35B, reliates t	Category B passive manual valve
	1944 - 1976 - 1987 - <b>PP-36A</b> 499 - 1976	Category B passive manual valve
	2 Marchael Marchael <b>PP-36B</b> , 1250 Au	Category B passive manual valve
	PP-37B	Category B passive manual valve
	<b>PP-38B</b>	Category B passive manual valve
	PP-39B	Category B passive manual valve
	PP-40B	Category B passive manual valve
	PP-41B	Category 8 passive manual valve
	etational PP-42B and	Category B passive manual valve

### Attachment 10.7 Page 26 of 40 Excluded Valve Table

P&ID Valve	No.	Reason For Exclusion
PP-4	3B	Category B passive manual valve
PP-4	4B	Category B passive manual valve
PP-4	5 <b>B</b> (198	Category B passive manual valve
PP-4	6B	Category B passive manual valve
PP-4	7B	Category B passive manual valve
PP-4	8B	Category B passive manual valve
PP-4	9B	Category B passive manual valve
PP-50	0 <b>B</b> 7.4	Category B passive manual valve
PP-5	1B	Category B passive manual valve
<b>PP-5</b>	2B <sup>4</sup>	Category B passive manual valve
PP-5	3B (2) - 2	Category B passive manual valve
PP-54	4B )	Category B passive manual valve
PP-5	5B	Category B passive manual valve
PP-5	6B - 1992 - 19	Category B passive manual valve
PP-5	7 <b>B</b> (1) (1) (1)	Category B passive manual valve
PP-5	8 <b>B</b> *(-0%38)	Category B passive manual valve
PP-5	9 <b>B</b> - 1994 - 19	Category B passive manual valve
PP-60	0 <b>B</b> Kinner C	Category B passive manual valve
PP-6	1 <b>B</b> (1996)	Category B passive manual valve
PP-62	2B that is	Category B passive manual valve
PP-6	3 <b>B</b> and this is	Category B passive manual valve
. (S. 1997) - PP-67	4 <b>B</b> (1999)	Category B passive manual valve
* PP-6	5B - 2004	Category B passive manual valve
PP-60	6 <b>B</b>	Category B passive manual valve
PP-6	7B <sup></sup>	Category B passive manual valve
PP-6	8B <sup>*</sup> (* 1997)	Category B passive manual valve
PP-6	9B	Category B <sup>®</sup> passive manual valve
PP-7	0 <b>B</b> / 514 (514)	Category B passive manual valve
PP-7	1B 635 3555	Category B passive manual valve

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# Attachment 10.7 Page 27 of 40 Excluded Valve Table

ID	Valve No.	<b>Reason For Exclusion</b>
· · · · · · · · · · · · · · · · · · ·	PP-72B	Category B passive manual valve
<b>4</b> , 1	PP-73B	Category B passive manual valve
<i>•</i> ,	PP-74B	Category B passive manual valve
$t_0 = 1$	PP-75B	Category B passive manual valve
	PP-76B	Category B passive manual valve
	PP-77B	Category B passive manual valve
17 - 18 - 1 19 - 19 - 19 - 19 - 19 - 19 - 19 -	PP-78B	Category B passive manual valve
	PP-79B	Category B passive manual valve
ار کړ ۲۰۰۰ د ۱۹	PP-80B	Category B passive manual valve
	PP-81B ,	Category B passive manual valve
	PP-82B	Category B passive manual valve
N		Category B passive manual valve
4	PP-84B	Category B passive manual valve
		Category B passive manual valve
\$		Category B passive manual valve
		Category B passive manual valve
•		Category B passive manual valve
	PP-89B	Category B passive manual valve
	PP-90B	Category B passive manual valve
	PP-91B	Category B passive manual valve
	PP-92B	Category B passive manual valve
441.2.5.5	PP-938	Category B passive manual valve
	PP-94B	Category B passive manual valve
	PP-95B	Category B passive manual valve
	PP-96B	Category B passive manual valve
	PP-97B	Category B passive manual valve
	PP-98B	Category B passive manual valve
	PP-99B	Category <u>B</u> passive manual valve
	PP-14C	Category B passive manual valve

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# Attachment 10.7 Page 28 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	PP-15C	Category B passive manual valve
	PP-16C	Category B passive manual valve
	PP-17C	Category B passive manual valve
s de la serie	PP-18C	Category B passive manual valve
	FP-19C	Category B passive manual valve
e de la companya de l	PP-20C	Category B passive manual valve
	PP-21C	Category B passive manual valve
,	PP-22C	Category B passive manual valve
· · · · · ·	PP-23C	Category B passive manual valve
31	PP-24C	Category B passive manual valve
·	PP-254C	Category B passive manual valve
	PP-255C	Category B passive manual valve
• • • • • •	PP-256C	Category B passive manual valve
	PP-257C	Category B passive manual valve
4 <b>;</b> *	PP-25C	Category B passive manual valve
	PP-26C	Category B passive manual valve
$\sum_{i=1}^{n-1} (i - 1)^{n-1} = \sum_{i=1}^{n-1} (i - 1)^{n-1} = \sum_{i$	PP-276D	Category B passive manual valve
	PP-27C	Category B passive manual valve
	PP-284D	No safety function
	PP-285D	No safety function
	PP-286D	No safety function
$(x,y) \in \mathbb{R}^{n \times n}$	PP-28C	Category B passive manual valve
	PP-29C	Category B passive manual valve
$(1,1)^{n+1} = (1,1)^{n+1} = $	PP-30C	Category B passive manual valve
$V_{i}(t_{\rm exp}) = - t_{i}(t_{\rm exp})$	PP-31C	Category B passive manual valve
	PP-32C	Category B passive manual valve
and the second	PP-33C	Category B passive manual valve
۰. ۲.	PP-34C	Category B passive manual valve
	PP-35C	Category B passive manual valve

### Attachment 10.7 Page 29 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
<u></u>	PP-38C	Category B passive manual valve
	PP-40C 1 4345	Category B passive manual valve
		Category B passive manual valve
	, we the second PP-42C second	Category B passive manual valve
	et. 1. 1. an - 1. <b>PP-44C</b> - 14	Category B passive manual valve
	997 90 B. H. Markan, PR-45C4 877 (S.	Category B passive manual valve
		Category B passive manual valve
	PP-47C	Category B passive manual valve
	DMDC / 180 - 4 10 - PP-48C (Marcola - 6	Category B passive manual valve
	a dagen an seath a <b>PR-54C</b> ana a	Category B passive manual valve
	№	Category B passive manual valve
	1911 - 1913 - 1914 PP-56C (191	Category B passive manual valve
	PP-57C	Category B passive manual valve
	PP-58C	Category B passive manual valve
	PP-59C 2011	Category B passive manual valve
	PP-60C Provide the second	Category B passive manual valve
	- (x) - (x) - (x) - (PP-61C) - (x) 私力	Category Bipassive manual valve
	200 - 201 - 201 - 201 <b>PP-62C</b> 201 - 2014	Category B passive manual valve
	PP-63C and 100	Category B passive manual valve
	антаманийн нэ <b>РР-64С</b> юмда 440	Category B passive manual valve
	entry and them in PP+65C and a large	Category B passive manual valve
	- ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Category B passive manual valve
	newsky and the <b>PP-670</b> (2011)	Category B passive manual valve
	nge e Belane en de R <b>PP∺68C</b> j% grad	Category B passive manual valve
	1	Category B passive manual valve
	and the state of the <b>PR-70C</b> the state of	Category B passive manual valve
	PP-71C	Category B passive manual valve
	New Massimum PR-72C graduate	Category B passive manual valve
	PP-73Crucesses	Category B passive manual valve

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# Attachment 10.7 Page 30 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
si	PP-74C	Category B passive manual valve
	2 /8 PP-75C	Category B passive manual valve
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	PP-78C	Category B passive manual valve
· *:*	PP-80C	Category B passive manual valve
	PP-81C	Category B passive manual valve
	PP-82C	Category B passive manual valve
i de la constante de	PP-84C	Category B passive manual valve
to star a star	6.4. PP-85C (1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Category B passive manual valve
	PP-86C	Category B passive manual valve
Charles at 1 - 1	<b>PP-87C</b> (1)	Category B passive manual valve
f to here.	are a <b>PP-88C</b>	Category B passive manual valve
G-190261,(3)	PP-100D	Category B passive manual valve
	PP-101D	Category B passive manual valve
· · · · · · · · · · · ·	e PP-102D de de	Category B passive manual valve
at .	2 PP-103D (201-3)	Category B passive manual valve
	• PP-104D	Category B passive manual valve
	PP-105D	Category B passive manual valve
, , , , , , , , , , , , , , , , , , ,	PP-106D	Category B passive manual valve
	PP-107D	Category B passive manual valve
n, ny , ⇒) ()	PR-1/14D	Category B passive manual valve
and the second	en en <b>PR-115D</b> ations. P	Category B passive manual valve
· · · · · · · · · · · · · · · · · · ·	et (des <b>PP-1/16D</b> .); (1965)	Category B passive manual valve
Same in the South	► PP-147D	Category B passive manual valve
$\gamma_{2}$ , $\gamma_{2}$ , $\beta$	PP-118D (1993)	Category B passive manual valve
·	PP-119D	Category B passive manual valve
	PP-120D	Category B passive manual valve
.e	○ PP+121D (1995)	Category B passive manual valve
	e e fe <b>PP-122D</b> : austal	Category B passive manual valve
	n	Category B passive manual valve

# Attachment 10.7 Page 31 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion	ets. 1
· · · ·	PP-124D	Category B passive manual valve	
	PP-125D	Category B passive manual valve	
$A_{i} = \{i_{i}, j_{i}\}$	PP-126D	Category B passive manual valve	
$d_{1,n} \in \mathbb{R}^{n}$ :	PP-127D	Category B passive manual valve	
Section 3	PP-128D	Category B passive manual valve	
e trave por sale	PP-129D	Category B passive manual valve	
a tanàna amin'ny taona 2008. Ilay kaominina dia kaomin	PP-130D	Category B passive manual valve	
	• PP-131D	Category B passive manual valve	
tera di seca	- BB-132D	Category B passive manual valve	
s an the second	PP-133D	Category B passive manual valve	
$1 - C + Q_{\rm e} = M_{\rm Ee} = 1$	PP-134D	Category B passive manual valve	
1991年1月1日(2015年) 1991年(2015年)	PP-135D (A. 58	Category B passive manual valve	
1. de	PP-136D	Category B passive manual valve	
· · · · ·	PP-137D	Category B passive manual valve	
, ∿~, 1 41 .	PP-138D	Category B passive manual valve	
	PP-139D	Category B:passive manual valve	
	PP-140D	Category B passive manual valve	
$(1,1,2,\dots,2)$	PP-141D	Category B passive manual valve	
and a stranger	PP-142D	Category B passive manual valve	
2522727777777777777777777	PP-143D (1997)	Category B passive manual valve	
的过去式和过去分词	• <b>PP-144D</b> (a. 1)	Category B passive manual valve	
	:::: <b>::::::::::::::::::::::::::::::::</b>	Category B passive manual valve	
<b>3</b> 148 C.A.	PP-146D	Category B passive manual valve	
$\{a_i,a_i\} \in \{a_i,a_i\}$		Category B passive manual valve	
$t \in U^*$ , $t \in V_{t}$	PP-148D	Category B passive manual valve	
, <b>.</b> , ·	6 <b>PP-149D</b>	Category B passive manual valve	
arr Eura.	PP-,14D	Category B passive manual valve	
Marine State	PP-150D	Category B passive manual valve	
$\forall \forall \forall A^{*} \in \mathcal{C} \Rightarrow \forall A$	PP-151D satisfies	Category B passive manual valve	

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#### Attachment 10.7 Page 32 of 40 Excluded Valve Table

PP-152DCategory B passive manual valvePP-153DCategory B passive manual valvePP-154DCategory B passive manual valvePP-155DCategory B passive manual valvePP-156DCategory B passive manual valvePP-157DCategory B passive manual valvePP-158DCategory B passive manual valvePP-159DCategory B passive manual valvePP-150DCategory B passive manual valvePP-160DCategory B passive manual valvePP-161DCategory B passive manual valvePP-162DCategory B passive manual valvePP-163DCategory B passive manual valvePP-166DCategory B passive manual valvePP-168DCategory B passive manual valvePP-170DCategory B passive manual valvePP-171DCategory B passive manual valvePP-172DCategory B passive manual valvePP-173DCategory B passive manual valvePP-175DCategory B passive manual valvePP-175DCategory B passive manual valvePP-175DCategory B passive manual valvePP-175DCategory B passive manual valvePP-172DCategory B passive manual valvePP-172D <td< th=""><th>P&amp;ID</th><th>Valve No.</th><th>Reason For Exclusion</th></td<>	P&ID	Valve No.	Reason For Exclusion
Category B passive manual valveCategory B passive ma		PP-152D	Category B passive manual valve
PP-155DCategory B passive manual valvePP-156DCategory B passive manual valvePP-157DCategory B passive manual valvePP-160DCategory B passive manual valvePP-161DCategory B passive manual valvePP-162DCategory B passive manual valvePP-163DCategory B passive manual valvePP-164DPP-164DPP-166DCategory B passive manual valvePP-166DCategory B passive manual valvePP-160DPP-160DCategory B passive manual valvePP-170DCategory B passive manual valvePP-172DCategory B passive manual valvePP-173DPP-174DPP-175DCategory B passive manual valvePP-176DPP-175DPP-176DCategory B passive manual valvePP-176DCategory B passive manual valvePP-176DCategory B passive manual valve<		e a PP-153D	Category B passive manual valve
Category B passive manual valvePP-157DCategory B passive manual valvePP-157DCategory B passive manual valvePP-158DCategory B passive manual valvePP-159DCategory B passive manual valvePP-150DCategory B passive manual valvePP-15DPP-15DCategory B passive manual valvePP-160DCategory B passive manual valvePP-161DCategory B passive manual valvePP-161DCategory B passive manual valvePP-162DCategory B passive manual valvePP-164DCategory B passive manual valvePP-166DCategory B passive manual valvePP-160DCategory B passive manual valvePP-160DCategory B passive manual valvePP-160DCategory B passive manual valvePP-170DCategory B passive manual valvePP-171DCategory B passive manual valvePP-172DCategory B passive manual valvePP-174DCategory B passive manual valvePP-175DCategory B passive manual valvePP-176DCategory B passive manual valvePP-176DCategory B passive manual valvePP-176DCategory B passive manual valvePP-176D<		· · · · · · · · · · · · · · · · · · ·	Category B passive manual valve
StatisticsPP-157DCategory B passive manual valveStatisticsPP-158DCategory B passive manual valveStatisticsPP-159DCategory B passive manual valveStatisticsPP-160DCategory B passive manual valveStatisticsPP-161DCategory B passive manual valveStatisticsPP-162DCategory B passive manual valveStatisticsPP-163DCategory B passive manual valveStatisticsPP-163DCategory B passive manual valveStatisticsPP-164DCategory B passive manual valveStatisticsPP-165DCategory B passive manual valveStatisticsPP-166DCategory B passive manual valveStatisticsPP-168DCategory B passive manual valveStatisticsPP-170DCategory B passive manual valveStatisticsPP-170DCategory B passive manual valveStatisticsPP-172DCategory B passive manual valveStatisticsPP-173DCategory B passive manual valveStatisticsPP-173DCategory B passive manual valveStatisticsPP-174DCategory B passive manual valveStatisticsPP-175DCategory B passive manual valveStatisticsPP-176DCategory B passive manual valveStatistics <td>• •</td> <td>g → A → A → A → A → A → A → A → A → A →</td> <td>Category B passive manual valve</td>	• •	g → A → A → A → A → A → A → A → A → A →	Category B passive manual valve
PR-158DCategory B passive manual valvePR-159DCategory B passive manual valvePR-159DCategory B passive manual valvePR-15DCategory B passive manual valvePR-16DCategory B passive manual valvePR-16DPP-165DPR-16DCategory B passive manual valvePR-16DPP-166DPR-16DCategory B passive manual valvePR-16DPP-166DPR-16DCategory B passive manual valvePR-16DPP-168DPR-16DCategory B passive manual valvePP-169DCategory B passive manual valvePP-169DPP-170DPR-16DCategory B passive manual valvePP-172DPP-172DPR-172DCategory B passive manual valvePP-173DPP-174DPP-174DCategory B passive manual valvePP-175DPP-176DPP-176DCategory B passive manual valvePP-176DPP-176DCategory B passive manual valvePP-176DCategory B passive manual valvePP-176DCategory B passive manual valvePP-176DPP-176DPP-176DCategory B pas		21. 1917 - 1926 <b>PP-156D</b> (1917)	Category B passive manual valve
Category B passive manual valveCategory B passive ma	5.	· · · · · PP-157D -	Category B passive manual valve
ActivityPP-15DCategory B passive manual valveCategory B passive manual valve <td>."</td> <td>1. And 1. PR-158D (1997)</td> <td>Category B passive manual valve</td>	."	1. And 1. PR-158D (1997)	Category B passive manual valve
Category B passive manual valveCategory B passive ma	1	an 1 <b>PP-159D</b> ana	Category B passive manual valve
Category B passive manual valveCategory B passive manual valvePP-172D pateCategory B passive manual valvePP-173D pateCategory B passive manual valveCategory B passive manual valvePP-175D pateCategory B passive manual valveCategory B passive manual valvePP-176D pateCategory B passive manual valvePP-176D pateCategory B passive manual valvePP-176D pateCategory B passive manual valvePP-176D pateCategor		• PP-15D	Category B passive manual valve
AdditionPR-162D.Category B passive manual valveAdditionPP-163D.Category B passive manual valveAdditionPP-164D.Category B passive manual valveAdditionPP-166D.Category B passive manual valveAdditionPP-168D.Category B passive manual valveAdditionPP-168D.Category B passive manual valveAdditionPP-160D.Category B passive manual valveAdditionPP-160D.Category B passive manual valveAdditionPP-170D.Category B passive manual valveAdditionPP-170D.Category B passive manual valveAdditionPP-173D.Category B passive manual valveAdditionPP-173D.Category B passive manual valveAdditionPP-175D.Category B passive manual valveAdditionPP-175D.Category B passive manual valveAdditionPP-175D.Category B passive manual valveAdditionPP-176D.Category B passive manual valveAdditionPP-176D.Cate		PP-160D	Category B passive manual valve
Category B passive manual valveCategory B passive ma		PP-161D	Category B passive manual valve
Category B passive manual valveCategory B passive ma	1.11	PR-162D	Category B passive manual valve
Autoria SectorPP-165D substrationCategory B passive manual valveCategory B passive ma	· 23	and	Category B passive manual valve
Category B passive manual valveCategory B passive ma	. 1 1	e - 164D: 20 e - P <b>P-164D</b> : 20 e - 2	Category B passive manual valve
Category B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-168D spacePP-169D activePP-160D activePP-16D activePP-16D activePP-170D activeCategory B passive manual valveCategory B passive manual valvePP-170D activePP-172D activePP-172D activePP-172D activePP-172D activePP-172D activeCategory B passive manual valvePP-172D activePP-172D	··· .		Category B passive manual valve
DefensionPP-168D sg 3d 3Category B passive manual valveCategory B passive manual valvePP-172D act 2d Category B passive manual valveCategory B passive manual valvePP-172D act 2d Category B passive manual valveCategory B passive manual valvePP-173D base 4d Category B passive manual valveCategory B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-175D category B passive manual valveCategory B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-176D category B passive manual valveCategory		eren eren de <b>₽₽-166D</b> ≥ 1 <sup>34</sup> €	Category B passive manual valve
And Control PP-169Dec SectionCategory B passive manual valveCategory B passive manual valvePP-172DogetorialCategory B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-173DogetorialCategory B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-175DogetorialCategory B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-176DogetorialCategory B passive manual valveCategory B passive manual valveCategory B passive manual valveCategory B passive manual valveCategory B passive manual valvePP-176DogetorialCategory B passive manual valveCategory B passive m	•••	<b></b>	Category B passive manual valve
PR-16D regressionCategory B passive manual valveDB Chighteen DPP-170D agreesCategory B passive manual valveDB Chighteen DPP-171D agreesCategory B passive manual valveDB Chighteen DPP-172D agreesCategory B passive manual valveDB Chighteen DPP-172D agreesCategory B passive manual valveDB Chighteen DPP-172D agreesCategory B passive manual valveDB Chighteen DPP-173D casesCategory B passive manual valveDB Chighteen DPP-174D casesCategory B passive manual valveDB Chighteen DPP-175D casesCategory B passive manual valveCategory B passive manual valvePP-176D casesCategory B passive manual valveCategory B passive manual valvePP-176D casesCategory B passive manual valveCategory B passive manual valvePP-176D casesCategory B passive manual valveCategory B passive manual valvePP-177D casesCategory B passive manual valve			Category B <sup>p</sup> assive manual valve
DescriptionPP-170DogradeCategory B passive manual valve266 Bit ActivePP-171DogradeCategory B passive manual valve266 Bit ActivePP-172DogradeCategory B passive manual valve266 Bit ActivePP-173DogradeCategory B passive manual valve266 Bit ActivePP-173DogradeCategory B passive manual valve266 Bit ActivePP-173DogradeCategory B passive manual valve266 Bit ActivePP-175DogradeCategory B passive manual valve266 Bit ActivePP-175DogradeCategory B passive manual valve266 Bit ActivePP-176DogradeCategory B passive manual valve266 Bit ActivePP-176DogradeCategory B passive manual valve266 Bit ActivePP-176DogradeCategory B passive manual valve		) PP-169Da. Soc. S	Category B passive manual valve
2960       300       PP-171Docate       Category B passive manual valve         2960       2960       PP-172Docate       Category B passive manual valve         2960       2960       PP-173Docate       Category B passive manual valve         2960       2960       PP-173Docate       Category B passive manual valve         2960       2960       PP-173Docate       Category B passive manual valve         2960       2960       PP-175Docate       Category B passive manual valve         2960       2960       PP-175Docate       Category B passive manual valve         2960       PP-176Docate       Category B passive manual valve         2960       PP-176Docate       Category B passive manual valve         2960       PP-177Docate       Category B passive manual valve			Category B passive manual valve
PP-172Date       Category B passive manual valve         PP-173Date       Category B passive manual valve         PP-174Date       Category B passive manual valve         PP-175Date       Category B passive manual valve         PP-176Date       Category B passive manual valve         PP-177Date       Category B passive manual valve		e marianti PP-170Dagrada	Category B passive manual valve
PP-173DCategory B passive manual valvePP-174DCategory B passive manual valvePP-175DCategory B passive manual valvePP-176DCategory B passive manual valvePP-177DCategory B passive manual valvePP-177DCategory B passive manual valve		en Batelan, est a <b>PP-171D</b> ae, a ca	Category B passive manual valve
PP-174DCategory B passive manual valvePP-175DCategory B passive manual valvePP-176DCategory B passive manual valvePP-177DCategory B passive manual valvePP-177DCategory B passive manual valve	<u>)</u> *	Services and <b>PP-17/2D</b> ogart≉C	Category B passive manual valve
PP-175DCategory B passive manual valvePP-176DCategory B passive manual valvePP-177DCategory B passive manual valvePP-177DCategory B passive manual valve		PP-173D	Category B passive manual valve
PP-176D       Category B passive manual valve         PP-177D       Category B passive manual valve         PP-177D       Category B passive manual valve		PP-174D	Category B passive manual valve
Category B passive manual valve	;	PP-175D	Category B passive manual valve
		PP-176D	Category B passive manual valve
Category B passive manual valve		er i state <b>PP-177D</b> (2242)	Category B:passive manual valve
		entrale de 1 <b>PB-178D</b> (casé)	Category B passive manual valve

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### Attachment 10.7 Page 33 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	PP-179D	Category B passive manual valve
	PP-17D	Category B passive manual valve
	1. (1. (1. (1. (1. (1. (1. (1. (1. (1. (	Category B passive manual valve
	estation → PP-181Dat	Category B passive manual valve
	PP-182D	Category B passive manual valve
		Category B passive manual valve
	≫	Category B passive manual valve
		Category B passive manual valve
	алда Аларана (т. <b>Р.Р186Д</b> ), ат сам	Category B passive manual valve
	PP-187D	Category B passive manual valve
	en an anna an <b>PP-188D</b> an	Category B passive manual valve
	PP-189D	Category B passive manual valve
	PP-18D	Category B passive manual valve
	PR-190D	Category B passive manual valve
	PP-191D	Category B passive manual valve
	PP-192D	Category B passive manual valve
		Category B passive manual valve
	1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 -	Category B passive manual valve
	PP-195D	Category B passive manual valve
	Revenue (1997)	Category B passive manual valve
	мерек, конструкти в <b>РР-197</b> 0, р. с. с	Category B passive manual valve
		Category B passive manual valve
	1999 - P. (1999 - 1999) at an	Category B passive manual valve
	реболь ( <u>Р</u> Р-19D а.,	Category B passive manual valve
	PP-200D	Category B passive manual valve
	PP-201D	Category B passive manual valve
	PP-202D	Category B passive manual valve
	PP-203D years	Category B passive manual valve
	PP-204D method	Category B passive manual valve

# Attachment 10.7 Page 34 of 40 Excluded Valve Table

A set of the set

P&ID	Valve No.	Reason For Exclusion
	PP-205D	Category B passive manual valve
3.	PP-206D	Category B passive manual valve
	PP-207D	Category B passive manual valve
	PP-208D	Category B passive manual valve
$+4a\gamma$ , $\phi_{r}$	200 PP-20D	Category B passive manual valve
	PP-214D	Category B passive manual valve
· ·	PP-219D	Category B passive manual valve
	**** <b>PP-21D</b> *******	Category B passive manual valve
· · · · ·	**************************************	Category Bipassive manual valve
2. · · · ·	PP-222D	Category B passive manual valve
		Category B passive manual valve
$C_{12} = 4$	PP-23D	Category B passive manual valve
x <sup>1</sup>	PP-24D	Category B passive manual valve
. •	PP-258D	Category B passive manual valve
	PP-259D	Category B <sup>3</sup> passive manual valve
	>>>> <b>PP-25D</b>	Category B passive manual valve
	142 - CP <b>P-26D</b> (Constant)	Category B passive manual valve
	PP-27D	Category B passive manual valve
, · ·	11 PP-28D Ave 1944	Category B passive manual valve
· · · · · · · · · · · · · · · · · · ·	era de <b>PP-292</b> 000 a <sup>0</sup> 600	Category B passive manual valve
1 F	ener (* <b>PP-293</b> 174644)	Category B passive manual valve
	• PP-29D	Category B passive manual valve
	e 🐪 PP-30D* (2011)	Category B passive manual valve
· <b>`</b> .	PP-31D	Category B passive manual valve
·	PP-32D	Category B passive manual valve
:	PP-33D	Category B passive manual valve
·. ·	PP-34D	Category B passive manual valve
	○ 14.05 PP-35D (21,03,0)	Category B passive manual valve
	PP-36D (2018)	Category B passive manual valve

### Attachment 10.7 Page 35 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	PP-37D	Category B passive manual valve
	PP-38D	Category B passive manual valve
	1. (1978) (1979) <b>PP-39D</b> (1977)	Category B passive manual valve
	an 1 an <b>PP-40D</b> at 1	Category B passive manual valve
	aaaa ah <b>PP∺41D</b> an sha	Category B passive manual valve
	· · · · · · · · · · · · · · · · · · · ·	Category B passive manual valve
	1 A AREA PP-43D	Category B passive manual valve
	• • • • • • • • • • <b>PP-44D</b>	Category B passive manual valve
	···· · · · · · · · · · · · · · · · · ·	Category B passive manual valve
	PP-46D:	Category <sup>1</sup> B passive manual valve
	() () <sub>111</sub> ( <b>PP-47D</b>	Category B passive manual valve
	C	Category B passive manual valve
	PP-49D	Category B passive manual valve
	<b>PP-50D</b>	Category B passive manual valve
	: PP-51D	Category B passive manual valve
	PP-52D	Category B pasisive manual valve
	and	Category B passive manual valve
	a e dest i <b>PP-54D</b> ege a	Category: B passive manual valve
	(1.4.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	Category B passive manual valve
	999200 - 1990 ( <b>PP-56D</b> ) - 1996 (1	Category B passive manual valve
	1925 (1997), entre (1 <b>PP-57D</b> exercise)	Category B passive manual valve
	PP-58D	Category B passive manual valve
	ant - 11088 and 12 <b>PP-59D</b> and 14	Category B passive manual valve
	An an an an an an <b>PR-60D</b> and a s	Category B passive manual valve
	eren en en ver <b>PP-61D</b> .	Category B passive manual valve
	PP-62D	Category B passive manual valve
	PP-63D	Category B passive manual valve
	energy and the PP-64D of the second	Category B passive manual valve
	PP-65D Jack	Category <sup>®</sup> B passive manual valve

### Attachment 10.7 Page 36 of 40 Street Excluded Valve Table

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# Attachment 10.7 Page 37 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion	
	PP-95D	Category B passive manual valve	
د <sup>د ا</sup> ا	PP-96D	Category B passive manual valve	
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ى 114 مى <sup>ي 1</sup>	PP-98D	Category B passive manual valve	
	99 <b>PP-99D</b> (1946 - 19	Category B passive manual valve	
G-190261 <sup>(</sup> (4)	PP-108D	Category B passive manual valve	
and the star star star star	PP-109C	Category B passive manual valve	
1.2 <sup>3</sup> 1 (233)	⊌{ <b>₽₽-110D</b>	Category B passive manual valve	
$(g,g_{1,1},g_{1,1}) \in (0,1)$	··PP-14A	Category B passive manual valve	
State of Barrier	v <b>PP-15A</b> ≏ ∋∋	Category B passive manual valve	
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	<b>PP-210C</b>	Category B passive manual valve	
	PP-211D	Category B passive manual valve	
	PP-222C	Category B passive manual valve	
y i iz i	PP-223C	Category B passive manual valve	
and the second second	PP-224C	Category B passive manual valve	
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124 $124$ $124$	PP-235C 100 20	Category B passive manual valve	
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Notes and PP-248ACategory B passive manual valvePP-249APP-249APP-249CCategory B passive manual valvePP-249CCategory B passive manual valvePP-249CPP-249CPP-249CCategory B passive manual valvePP-24ACategory B passive manual valvePP-25DCCategory B passive manual valvePP-251CCategory B passive manual valvePP-252CCategory B passive manual valvePP-252CCategory B passive manual valvePP-261DCategory B passive manual valvePP-262DPP-262DCategory B passive manual valvePP-263DCategory B passive manual valvePP-265DPP-263DCategory B passive manual valvePP-265DCategory B passive manual valvePP-266DCategory B passive manual valvePP-266DCategory B passive manual valvePP-266DCategory B passive manual valvePP-291ACategory B passive manual valvePP-291CCategory B passive manual valvePP-293Category B passive manual valvePP-294Category B passive manual valvePP-295PP-294Category B passive manual valvePP-294Category B passive manual valve </th <th>P&amp;ID</th> <th>Valve No.</th> <th>Reason For Exclusion</th>	P&ID	Valve No.	Reason For Exclusion
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		PP-308	Category B passive manual valve
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# Attachment 10.7 Page 39 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion	
· · · · · · · · · · · · · · · · · · ·	PP-310	Category B passive manual valve	
, i e ,	PP-36C	Category B passive manual valve	
an a	PP-38A	Category B passive manual valve	
	PP-40A	Category B passive manual valve	
	PP-41A	Category B passive manual valve	
	PP-42A	Category B passive manual valve	
	PP-43A	Category B passive manual valve	
	PP-49C	Category B passive manual valve	
	PP-89C	Category B passive manual valve	
	PP-90C	Category B passive manual valve	
	PP-91C	Category B passive manual valve	
	PP-92C	Category B passive manual valve	
	PP-93C	Category B passive manual valve	
G-190262 (1)	IVSW-16D	Category B passive manual valve	
	IVSW-16G	Category B passive manual valve	
	IVSW-70	No safety function	
	IVSW-98	No safety function	
	PCV-26E	Exempt - control valve	
	PCV-30A	Exempt - control valve	
	PCV-30G	Exempt - control valve	
	PCV-30G1	Exempt - control valve	
	PCV-30G2	Exempt - control valve	
HBR2-6490 (1)	VCT-15	Category B passive manual valve	
	VCT-16	Category B passive manual valve	
	VCT-17	Category B passive manual valve	
HBR2-9067 (1)	RC-588A	Category B passive manual valve	
	RC-588B	Category B passive manual valve	
	RC-591	Category B passive manual valve	
	RC-592	Category B passive manual valve	

# Attachment 10.7 Page 40 of 40 Excluded Valve Table

P&ID	Valve No.	Reason For Exclusion
	Case <b>RC-599</b> No.	Category B passive manual valve
	estimate RC-600A	Category B passive manual valve
	RC-600B	Category B passive manual valve
	$(x_1, x_2, \dots, x_{n-1}) \in (x_1, x_2, \dots, x_{n-1})$	21
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	and an an an an an	$\frac{1}{2} \left( \frac{1}{2} \right)^2$
	· "你们的,我们们们还是给你了我们的我。"	$A = 10^{-10}$
	$M_{\rm eff} = 0.033$	
	$\frac{1}{2}\left(\frac{1}{2}\right) = \frac{1}{2}\left(\frac{1}{2}\right) + \frac{1}{2}$	$(-1)^{-1}$
	$\chi_{12} = 3 \epsilon_{12} \epsilon_{12} \epsilon_{12} \epsilon_{13} \epsilon_{$	
	1997 - 19	·
	$b_{Ta} = -b_{Ta}$	
	and the second	
	$h_{\rm eff} = 1.024 \pm 0.024$ (1) $h_{\rm eff} = 0.00$	$b_{i}$
	$(1, \dots, N) \in \sum_{i=1}^{N} (i \in [i], \dots, i \in [i])$	
	at the second second second second	$M_{\rm eff} = 1$
	$p^{2} = p^{2} + p^{2} p^{2} + p^{2} p^{2} p^{2} + p^{2} p^{2} p^{2} p^{2} + p^{2} p^{2} p^{2} p^{2} p^{2} p^{2} + p^{2} p^{2$	$\mathcal{L}_{\mathbf{A}} = \{ \mathbf{b}_{i}, \dots, \mathbf{b}_{i} \}$
	in the state of the state of	$(\sigma^{(1)}, \gamma^{(1)})$
	the second standard the	$\sum_{i=1}^{n} \frac{\partial f_{i}}{\partial x_{i}} = \sum_{i=1}^{n} \frac{\partial f_{i}}{\partial x_{i}}$ (6.4)
	(1,1,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2	$\sim 10^{-3}$ , $\sim 10^{-3}$
	enter a la companya de la companya d	A. Dr. Breech
	and the second second second second	$(1, 2^{n})$ and $(1, 2^{n})$
	and the second	$\gamma = \gamma - \gamma^{2}$
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