

ENCLOSURE 5

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) 1.d
(MOV Performance Indicator Report for Cycle 20)

NET 20150022

July 16, 2015

To: Matt Hall
Victor Thomas

From: Mike Brenner

Re: **MOV Testing Program**

The attached 18 Month MOV Performance Indicator Report for Cycle 20 was prepared in accordance with the provisions of EDP-ZZ-01114, Motor Operated Valve Program Guide.

Key Accomplishments:

- All of Callaway's safety-related Motor Operated Valves (MOV) are properly set up and are in good working condition. There are no signs of adverse trends. Nominal operating parameters for Cycle 20 are documented in Attachment 1.
 - a) All rising stem MOVs with active safety related functions using a torque switch in their closing stroke are setup to exceed the 25% target margin with the exception of EGHV0130 which has a closing stroke margin of 19%. Job 14511998 has been written to restore the margin to 25%. Having 25% margin allows a 4-cycle/6 year static testing (rather than DP testing) interval for periodic verification of operability.
 - b) All rising stem MOVs with active safety function using a limit switch to open and or close have positive margin.
 - c) All butterfly MOVs have had their torque switches jumpered or removed. These MOVs must have positive margin for opening and closing stroke with an active safety-related function. All butterfly MOVs meet the parameters required to: 1) eliminate the need for periodic differential pressure testing, and 2) utilize the 4 cycle/6 year interval for periodic verification of operability.
- The results of testing performed on rising stem valves during cycle 20 confirms that there is no lubrication degradation of the stem-to-stem nut interface over the 18-month interval between maintenance.

Planned Enhancements

- CAR 201402649: Improve Motor Operated Valve PM Basis
- Improve Test Criteria worksheets for MOV testing. Potentially combine the Test Criteria Worksheet and the Signature Analysis Report into one datasheet.
- Easy Thrust Torque (ETT) Sensors will be utilized on quarter-turn, butterfly MOVs to improve test results.
- Enter Test Criteria Worksheets, UDS Test Records and Predictive Performance Reports into Document Room for revision control and Planner access without engineering support.



Michael E. Brenner
MOV Engineer

Attachment 1: 18 Month Motor Operated Valve Program Performance Indicator Report for Cycle 20

Attachment 2: Database for Cycle 20 with Margins and Limits

Attachment 3: Predictive Performance Reports for Cycle 20

cc: file: A160.0446
Matt Hall
Greg Kremer
Victor Thomas
Mike Brenner
Darrel Heckel
Curtis Wood

18 MONTH MOTOR OPERATED VALVE PROGRAM PERFORMANCE INDICATOR REPORT FOR CYCLE 20

July 20, 2015

ATTACHMENT 1

This report provides an overview of the performance and condition of all safety-related and recaps Motor-Operated Valve Program activities over Cycle 20; end of Refuel 19 to end of Refuel 20 in accordance with provisions of EDP-ZZ-01114, Motor-Operated Valve Program Guide.

The 18-Month MOV Performance Indicator Report is broken down into eight main sections:

1. Summary of Diagnostic Testing Performed to Date and a Recap of Testing Performed during Cycle 20.
2. Description of the Current Setup of all Safety-Related MOVs, in the Generic Letter 89-10 Program.
3. Description of Major Work Completed on Safety-Related MOVs
4. Summary of CARs issued on Safety-Related MOVs
5. Summary of Trends Identified from Predictive Performance Reports
6. Actions to Improve Margin and Reduced Voltage Performance
7. Operating Experience Reviewed During Cycle 20
8. Planned Actions to Enhance the Callaway MOV Program

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1. Summary of Diagnostic Testing Performed to Date and a Recap of Testing Performed during Cycle 20

- There are currently 144 valves in the MOV program. All 144 have been static baseline tested and 99 have been differential pressure tested.
- During Cycle 20, a total of 31 Periodic Verification Tests were performed. This included 1 Baseline Test on EGHV0011 following an actuator grease change-out, 1 Baseline Test on ALHV0005 following an actuator grease change-out and 1 baseline test on ALHV0009 following a valve inspection. All MOV diagnostic tests are now being documented as Periodic Verification Tests with the exception of partial tests to verify packing loads. These are called Packing Force Tests.
- During Cycle 20, a total of 18 Service and Inspect PMs were performed on GL 89-10 Program MOVs. 203 Actuator Gearbox and Motor Pinion Gearbox grease inspections were performed on safety-related; Program, MOVs and non-safety-related; Production MOVs.

2. Description of the Current Setup of all Safety-Related MOVs, in the Generic Letter 89-10 Program.

- Attachment 1 provides a synopsis of the current setup of GL 80-10 Program MOVs. At the end of Refuel 20:
- All rising stem torque-controlled MOVs with a safety function to close as setup to meet the 25% margin requirement except EGHV0130 which has 19% closing stroke margin. Job 14511998 is scheduled for Refuel 21 to restore the margin to greater than 25%.
- All rising stem limit-closed MOVs are setup with the required positive margin.
- All quarter-turn/butterfly valves are setup with positive margin to close.
- All MOVs use limit switch control for their opening stroke. All MOVs are setup with positive opening stroke margin.

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3. Description of Major Work Completed on Safety-Related MOVs

The following table summarizes all major work performed on GL 89-10 Program MOVs:

Location	Periodic Verification Test	Service & Inspect PM	Actuator Grease Change- out	Valve Inspection	Motor Brush Inspection	Other
ALHV0005	X	X	X			1
ALHV0009	X			X		
ALHV0011					X	
BBHV8351A	X	X				2
BBHV8351D	X	X				
BGHV8357A	X	X				
BGLCV0112C	X	X				
EFPDV0020	X					
EGHV0011	X		X			
EGHV0012	X					
EGHV0014	X	X				
EGHV0015	X					3
EGHV0071	X	X				
EGHV0126	X	X				
EGHV0130	X	X				
EGHV0131	X	X				
ENHV0006	X					
ENHV0007	X	X				
EPHV8808A	X					
LFFV0095	X					
BNLCV0112E	X	X				
EJHV8804B	X					
EMHV8801A	X					
ALHV0031	X	X				
ALHV0033	X	X				
EFHV0023	X	X				4
EFHV0037	X					5
EFHV0041	X	X				
EFHV0042	X					
EFHV0049	X	X				
EFHV0059	X	X				

1. Replaced torque switch
2. Reconditioned stem nut
3. Adjusted close limit switch
4. Adjusted tripper fingers
5. Replaced valve

4. Summary of CARs issued on Safety-related MOVs

- Other Issue: 17
- Business Tracking: 2
- Significance Level 2: 1

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- CAR 201408399; ALHV0005 would not full close
Problem Statement: ALHV0005, MDAFP B TO S/G D HV (*object*), would not full close (*deviation*), resulting in continued flow to EBB01D, the RCS steam generator D (*impact*) and the need to secure PAL01B, the 'B' MDAFP (*impact*) to prevent steam generator overfilling.
This CAR is In-Process.
- Significance Level 3: 5
 - CAR 201303697; FCHV0312 motor running at approximately twice normal speed.
Problem Statement: During as-found motor-operated valve FCHV0312 testing under job 11513700 (*obj*) the motor was found to be operating at approximately twice the normal speed (*dev*) resulting in a failed post maintenance test, extended out of service time, and additional outage critical path duration (*imp*).
This CAR is closed.
 - CAR 201302358; ESW SW cross connect valve leakage identified during Job 06527624.904
Problem Statement: The In-Service Leakage Test (ISLT) per Job 06527624.904 on valve EFHV0024; SERV WTR TO ESW TRN B UPSTRM HV (*Object*), identified a leakage rate in excess of 10 GPM (*Deviation*). If EFHV0026 (SERV WTR TO ESW TRN B DNSTRM HV) is unable to be closed due to a loss of power or valve failure, leakage from the ESW system could be excessive, causing a reduction in the ability to cool the RCS (Reactor Cooling System) based upon UHS (Ultimate Heat Sink) capacity (*Impact*).
This CAR is closed.
 - CAR 201400092; EMHV8801B failed to full stroke during OSP-BG-V001B
Problem Statement: EMHV8801B (Boron Injection Header Isolation Valve) (*object*) failed to full stroke during OSP-BG-V001B (*deviation*) resulting in the inability to verify operability and entering Tech Spec 3.5.2.A (*impact*).
This CAR is closed.
 - CAR 201401204; Adverse trend in grease inspection failures to date in 2014
Problem Statement: Motor operated valve (MOV) grease (*Object*) was characterized as unsatisfactory (*Deviation*), resulting in unnecessary jobs (on demand PM) being generated to perform grease change outs. (*Impact*).
This CAR is closed.
 - CAR 201406426; EFHV0066 ESW UHS Cooling Tower Bypass Valve
Problem Statement: Object: EFHV0066 Spline Adapter; Deviation: slipped from its proper position. Impact: Spline adapter was found in an undesirable position but splines were still engaged with enough contact area to operate the valve in a design basis accident.
This CAR is closed.
- Significance Level 4: 33
- Significance Level 5: 21
- Significance Level 6: 4

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5. Summary of Trends Identified from Predictive Performance Reports

No trends were identified in the Predictive Performance Reports (PPR). A copy of each PPR is attached to this report.

6. Actions to Improve Margin and Reduced Voltage Performance

- Job 1451998 was written to improve the close margin for EGHV0130. The close margin is 19%. The Callaway standard for this MOV is 25%.
- Job 14001995 was written to improve the stem/stem nut coefficient for BGLCV0112E. The COF is 0.179. Callaway action is initiated at a COF of 0.15 or greater.
- Breakers continue to be replaced under Modification 91-1035 and MCC Buckets under modification 01-1003 resulting in improved reduced voltage performance.

7. Operating Experience Evaluated During Cycle 20

- CAR 201301468; Anchor Darling/Flowserve Part 21

Problem Statement: Flowserve contacted Callaway regarding a Part 21 notification for a potential defect in Anchor Darling double disc gate valves, size 2.5 or larger. The wedge pin that serves to lock the threaded stem to upper wedge joint can shear if the actuator applies a torque that exceeds the torque applied to the assembly before the pin was installed. A pin failure results in a loss of stem to upper wedge joint integrity.

Extent of Condition: CAR 201300135 identified the following Anchor Darling double disc gate valves installed at Callaway:

- EGHV0058
- EGHV0059
- EGHV0060
- EGHV0127
- EGHV0130
- EGHV0131

All are safety related.

This CAR is Complete. No actions or jobs are documented. CAR 201400704 was generated to readdress the Part 21. This CAR has been completed; however, further action is still required as determined by information obtained in January 2015 at the Motor Operated Valve User's Group (MUG) meeting.

- CAR 201305792; ICES 304752
- Evaluation Statement: Evaluate the applicability of operating experience ICES 304752 on motor-operated valve limit switch failure due to over-burnishing and subsequent oxidation-induced contact failure.
Action to Resolve Issue: Action 1 addresses the applicability to Callaway as determined by the valve team supervisor. This OE was discussed with a senior electrical technician and it was suggested that training/retraining on the use of burnishing tools might be appropriate at this time. This training would be an enhancement. TRRQ 201400565 has been initiated to evaluate the need for this training.
This CAR is Complete.
- CAR 201306796; NRC IN 2013014; Potential Design Deficiency in MOV Control Circuit
Evaluation Statement: At Limerick Generation Station, Motor-operated valves (MOV) could remain partially open following the initiation of an automatic isolation signal in response to a

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design-basis LOCA when power is interrupted to the actuator of certain MOVs. In addition, the valve position lights could indicate the valve is closed when the actual position could be as much as 15% open. This is reported in the Nuclear Regulatory Commission Information Notice 2013-14. The purpose of this evaluation is to determine if this Information Notice is applicable at Callaway.

Action to Resolve Issue: At Callaway, interlock/permissive functions are not provided through the limit switches within the Limatorque actuator. Open and closed indications are provided through the Limatorque switches. When a LOCA trip signal is activated, Callaway MOVs are de-energized and then load sequenced and receive their power from their emergency diesel generator buss. With power, the MOVs will continue toward their design-basis position. Power could be lost, but the MOV will continue towards design basis position when power is restored. When power is removed and the MOV has stopped motion due to inertia, it will not reposition itself because all safety-related MOVs at Callaway have a locking gear-set through the Limatorque actuator except for GSHV0020 and GSHV0021. These MOVs have an HBC gear box. The gear box provides the locking gear-set condition. The condition discussed in NRC IN 2013-14 is not applicable as-built at Callaway. This CAR is Complete.

8. Planned Actions to Enhance the Callaway MOV Program

- CAR 201402649 Improve Motor Operated Valve PM Basis

Condition Description: The Motor-Operated Valve PM Basis is wrong for numerous tasks and references.

The MOV PM Basis is being reviewed for errors and to improve the clarity of the document.

Following the PM Basis update, PM frequency will be optimized based on operating experience.

- Improve Test Criteria Worksheets for MOV testing. Potentially combine the Test Criteria Worksheet and the Signature Analysis Report into one datasheet.
- Easy Thrust Torque (ETT) Sensors will be utilized on quarter-turn, butterfly MOVs to improve test results.
- Enter Test Criteria Worksheets, UDS Test Records and Predictive Performance Reports into Document Room for revision control and Planner access without engineering support.

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DEFINITIONS FOR ATTACHED DATABASE

Rising Stem-Torque Switch Controlled Motor Operated Valve Definitions

Close Operable Load Limit = Differential Pressure Thrust/Minimum Available Thrust at Torque Switch Trip

Close Margin = ((Minimum Available Thrust @ Torque Switch Trip – Differential Pressure Thrust)/Differential Pressure Thrust) X 100

Close Reduced Voltage (RV) Limit = Close Torque at Torque Switch Trip / Allowable Reduced Voltage Running Torque

Close (Actuator) Thrust Limit = Total Thrust following Torque Switch Trip / Actuator Thrust Rating

Close (Actuator) Torque Limit = Total Torque following Torque Switch Trip / Actuator Torque Rating

COF (Stem/Stem Nut Coefficient of Friction) = Stem/Stem Nut Interface Coefficient of Friction

Lubrication Limit = Measured Stem-to-Stem Nut Friction Coefficient / Callaway Target Friction Coefficient of 0.15

Unseating Reduced Voltage (RV) Limit = Unseating Torque / Allowable Reduced Voltage Pullout Torque

Current Limit = Average Motor Current / 120% of Rated Motor Current, Up to 200% of Rated Motor Current is acceptable.

Rising Stem-Limit Switch Controlled Motor Operated Valve Definitions

Close Reduced Voltage (RV) Limit = Close Torque at Limit Switch Trip/(Allowable Reduced Voltage Running Torque - Piston Effect Torque)

Close (Actuator) Thrust Limit = Total Thrust following Limit Switch Trip / (Actuator Thrust Rating - Piston Effect Thrust)

Close (Actuator) Torque Limit = Total Torque following Limit Switch Trip / (Actuator Torque Rating - Piston Effect Torque)

COF (Stem/Stem Nut Coefficient of Friction) = Stem/Stem Nut Interface Coefficient of Friction

Valve Thrust Limit = Total Thrust following Limit Switch Trip / (Valve Thrust Rating - Piston Effect Thrust)

Lubrication Limit = Measured Stem-to-Stem Nut Friction Coefficient / Callaway Target Friction Coefficient of 0.15

Unseating Reduced Voltage (RV) Limit = (Unseating Torque + Bearing DP Torque + Running Load) / Allowable Reduced Voltage Pullout Torque

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Current Limit = Average Motor Current / 120% of Rated Motor Current, Up to 200% of Rated Motor Current is acceptable.

Quarter Turn-Limit Switch Controlled Motor Operated Valve Definitions

Open Stroke Operable Load Limit = (DP Effect Torque + Stem Load) / Min (Actuator Torque Rating, RV Running Torque, Stem Allowable Torque)

Open Stroke Unseating Reduced Voltage (RV) Limit = (Unseating Torque + Bearing DP Torque + Running Load) / Allowable Reduced Voltage Pullout Torque

Open Stroke Actuator Limit = (Total Torque following Limit Switch Trip + Bearing Differential Pressure Torque) / Actuator Torque Rating

Open Stroke Disk/Pin Limit = Unseating Torque / Disk/pin Allowable Torque

Open Stroke Valve Stem Limit = (Unseating Torque + Running Load + Bearing DP Torque) / Stem Allowable Torque

Open Stroke Current Limit = Average Motor Current / 120% of Rated Motor Current, Up to 200% of Rated Motor Current is acceptable.

Design Margin Open (%) = ((Minimum Available Torque at Reduced Voltage – Maximum Required Torque) / Maximum Required Torque) X 100

Close Stroke Reduced Voltage (RV) Limit = (Close MAT at LST + Close Bearing DP Torque + Running Load) / Allowable Reduced Voltage Running Torque

Close Stroke Actuator Limit = (Total Torque following Limit Switch Trip + Bearing Differential Pressure Torque) / Actuator Torque Rating

Close Stroke Disk/Pin Limit = (Total Torque following Limit Switch Trip - Running Load) / Disk/pin Allowable Torque

Close Stroke Valve Stem Limit = (Total Torque following Limit Switch Trip + Bearing Differential Pressure Torque) / Stem Allowable Torque

Close Stroke Current Limit = Average Motor Current / 120% of Rated Motor Current, Up to 200% of Rated Motor Current is acceptable.

Design Margin Close (%) = ((Minimum Available Torque at Reduced Voltage – Maximum required Torque) / Maximum Required Torque) X 100

Prepared by: Michael E. Brenner 721 Date: 6/20/2015

DESCRIPTION OF MOTOR OPERATED VALVES

Location	Functional Description	PPR Description of MOV	Safety Functions	Close Control	Operator Type	Valve Type
ALHV0005	MDAFP B TO S/G D HV	ALHV0005 is a 4 inch Masoneilan flow control globe valve equipped with a Modutronic controlled SMB-00 Limitorque actuator. The motor operated valve (MOV) has active safety functions to open and close against 1725 psid. Close control is by torque switch.	Open & Close	Torque Switch	Rising Stem	Globe
ALHV0007	MDAFP B TO S/G A HV	ALHV0007 is a 4 inch Masoneilan flow control globe valve equipped with a Modutronic-controlled SMB-00 Limitorque actuator. This MOV has been setup to open and close against 1725 psid as required for its active safety functions.	Open & Close	Torque Switch	Rising Stem	Globe
ALHV0009	MDAFP TO S/G B HV	ALHV0009 is a 4 inch Masoneilan flow control globe valve equipped with a Modutronic controlled SMB-00 Limitorque actuator. The motor operated valve (MOV) has active safety functions to open and close against 1725 psid. Close control is by torque switch.	Open & Close	Torque Switch	Rising Stem	Globe
ALHV0011	MDAFP TO S/G C HV	ALHV0011 is a 4" Masoneilan flow control globe valve equipped with a Modutronic controlled SMB-00 Limitorque actuator. The Motor Operated Valve (MOV) is setup to open and close against 1725 psid as required for its active safety functions.	Open & Close	Torque Switch	Rising Stem	Globe
ALHV0030	ESW TO MD AFP B HV	ALHV0030 is a 6 inch Fisher Butterfly valve equipped with a Limitorque SMB 00 actuator and an HBC-1 Limitorque gearbox. This MOV has been set up to open against 157 psid as required by its active safety function. It is also set up to close against 157 psid for commercial function.	Open	Limit Switch without Torque Switch	Quarter Turn	Butterfly
ALHV0031	ESW TO MD AFP A HV	ALHV0031 is a 6 inch Fisher Butterfly valve equipped with a Limitorque SMB 00 operator. This MOV has been set up to open against 156 psid as required for its active safety function. It is also set up to close against 156 psid for commercial function.	Open	Limit Switch without Torque Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

ALHV0032	ESW TO TD AFP HV	ALHV0032 is an 8 inch Fisher butterfly valve equipped with a Limitorque type SMB-00 actuator and H1BC gearbox. This MOV has been set up to open against 155 psid, as required for its active safety function. Is has been set up to close against 155 psid for commercial function.	Open	Limit Switch without Torque Switch	Quarter Turn	Butterfly
ALHV0033	ESW TO TD AFP HV	ALHV0033 is a 8 inch Fisher Butterfly valve equipped with a Limitorque SMB 00 actuator and an HBC-1 Limitorque gearbox. This MOV has been set up to open against 157 psid as required by its active safety function. It is also set up to close against 157 psid for commercial function.	Open	Limit Switch without Torque Switch	Quarter Turn	Butterfly
ALHV0034	CST TO MD AFP B HV	ALHV0034 is an 8 inch Anchor-Darling flex wedge gate valve, equipped with a torque close, type SMB-00 actuator. This MOV is set up to open against 25 psid and close against 135 psid as required by its active safety functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
ALHV0035	CST TO MD AFP A HV	ALHV0035 is an 8 inch Anchor-Darling flex wedge gate valve, equipped with a torque close, type SMB-00 actuator. This MOV is set up to open against 25 psid and close against 154 psid as required by its active safety functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
ALHV0036	CST TO TD AFP HV	ALHV0036 is a 10" Anchor-Darling flex wedge gate valve equipped with a type SMB-00 Limitorque actuator. This valve is set up to open against a design DP of 25 psid and close against 156 psid for it's active safety functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
BBHV0013	RCP A THRM BAR COOL COIL COOL WTR OUT HV	BBHV0013 is a 3" Velan flex wedge gate valve equipped with a Limitorque SMB-00 operator. Valve closure is controlled by torque. This MOV has been set up to open against 145 psid and close against 2335 psid as required for its active safety functions..	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

BBHV0014	RCP B THRM BAR COOL COIL COOL WTR OUT HV	BBHV0014 is a 3" Velan flex wedge gate valve equipped with a Limitorque SMB-00 operator. Valve closure is controlled by torque. This MOV has been set up to close against 2335 psid as required for it's active safety function. BBHV0014 has also been set up to open against 156 psid for commercial purposes.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
BBHV0015	RCP C THRM BAR COOL COIL COOL WTR OUT HV	BBHV0015 is a 3" Velan flex wedge gate valve equipped with a Limitorque SMB-00 operator. Valve closure is controlled by torque. This valve has been set up to close against 2335 psid as required by it's active safety function. BBHV0015 has also been set up to open against 145 psid for commercial purposes.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
BBHV0016	RCP D THRM BAR COOL COIL COOL WTR OUT HV	BBHV0016 is a 3" Velan flex wedge gate valve equipped with a Limitorque SMB-00 operator. Valve closure is controlled by torque. This MOV has been set up to open against 145 psid and close against 2335 psid as required by its active safety functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
BBHV8000A	RCS PZR OUT PWR OPER RLF HV	BBHV8000A is a 3 inch Westinghouse flex wedge gate valve equipped with a Limitorque SB-00 actuator. The MOV is limit-controlled. The MOV has been set up to open against 2485 psid and close against 2335 psid as required for its active safety functions.	Open & Close	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate
BBHV8000B	RCS PZR OUT PWR OPER RLF HV	BBHV8000B is a 3 inch Westinghouse flex wedge gate valve equipped with a Limitorque SB-00 actuator. The Motor Operated Valve (MOV) is limit-controlled. The MOV has been set up to open against 2485 psid and close against 2335 psid as required for its active safety functions.	Open & Close	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate
BBHV8037A	RCS PRT OUT TO CTMT NORM SMP ISO HV	BBHV8037A is a 4" Westinghouse flex wedge gate valve equipped with a type SB-00 actuator. This motor operated valve is set up to open and close against 104 psid. Closure is controlled by torque switch.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

BBHV8037B	RCS PRT OUT TO CTMT NORM SMP ISO HV	BBHV8037B is a 4" Westinghouse flex wedge gate valve equipped with a type SB-00 actuator. This valve is set up to open and close against 104 psid. Closure is controlled by torque switch	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
BBHV8351A	RCP A SEAL WTR SPLY ISO HV	BBHV8351A is a 2-inch Velan globe valve equipped with a Limitorque SMB-00 actuator. The close stroke is torque switch controlled. The MOV is passive, having no active safety functions. The MOV is, however, set up to open and close against 2813 psid for commercial purposes.	None	Torque Switch	Rising Stem	Globe
BBHV8351B	RCP B SEAL WTR SPLY ISO HV	BBHV8351B is a 2 inch Velan globe valve equipped with a Limitorque SMB-00 actuator. The close stroke is torque switch controlled. The MOV is passive, having no active safety functions. The MOV is, however, set up to open and close against 2813 psid for commercial purposes.	None	Torque Switch	Rising Stem	Globe
BBHV8351C	RCP C SEAL WTR SPLY ISO HV	BBHV8351C is a 2 inch Velan globe valve equipped with a Limitorque SMB-00 actuator. The close stroke is torque switch controlled. The MOV is passive, having no active safety functions. The MOV is, however, set up to open and close against 2813 psid for commercial purposes.	None	Torque Switch	Rising Stem	Globe
BBHV8351D	RCP D SEAL WTR SPLY ISO HV	BBHV8351D is a 2-inch Velan globe valve equipped with a Limitorque SMB-00 actuator. The close stroke is torque switch controlled. The MOV is passive, having no active safety functions. The MOV is, however, set up to open and close against 2813 psid for commercial purposes.	None	Torque Switch	Rising Stem	Globe

DESCRIPTION OF MOTOR OPERATED VALVES

BBPV8702A	RCS LOOP 1 HOT LEG TO RHR PMPS PCV ISO	BBPV8702A is a 12 inch Westinghouse flex wedge gate valve equipped with an SMB-2 Limitorque actuator. This motor operated valve (MOV) has been set up to open against 380 psid and close against 464 psid as required for its active safety functions related to flow control and close against 60 psid as required for its active safety function related to pressure isolation. The MOV uses soft seating, torque control in the close stroke direction and limit switch control in the open stroke direction.	Open & Close	Torque Switch Soft Seating	Rising Stem	Flex Wedge Gate
BBPV8702B	RCS LOOP 4 HOT LEG TO RHR PMPS PCV ISO	BBPV8702B is a 12 inch Westinghouse flex wedge gate valve equipped with an SMB-2 Limitorque actuator. This motor operated valve (MOV) has been setup to open against 380 psid and close against 464 psid as required for its active safety functions.	Open & Close	Torque Switch Soft Seating	Rising Stem	Flex Wedge Gate
BGHV8100	SEAL WTR RTN OUTER CTMT ISO	BGHV8100 is a 2" Velan globe valve equipped with a type SMB-00 actuator. Closure is controlled by torque switch. This valve has been set up to close against 155 psid as required by it's active safety function. BGHV8100 has also been set up to open against 155 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Globe
BGHV8104	EMERG BORATE TO CCP A & B HDR ISO HV	BGHV8104 is a 2 inch Velan Globe valve with an SMB-00 Limitorque operator. The valve has been set up to meet safety related thrust requirements of 2328 lbs in the open direction and 2757 lbs in the close direction. BGHV8104 is setup to use torque switch control for the close stroke and limit switch control for the open stroke.	Close	Torque Switch	Rising Stem	Globe
BGHV8105	CVCS CHARGING HDR TO REGEN HX OUTER CTMT ISO VLV	BGHV8105 is a 3 inch Westinghouse flex wedge gate valve equipped with a Limitorque SB-00 actuator. The MOV is designed to close on limit against 2750 psid as required for its active safety function. BGHV8105 has no safety function to open, but has been set up to open against 2750 psid for commercial purposes	Close	Limit Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

BGHV8106 BGHV8109	CVCS CHARGING HDR TO REGEN HX OUTER CTMT ISO VLV	BGHV8106 is a 3 inch Westinghouse flex wedge gate valve equipped with a Limitorque SB-00 actuator. The MOV is limit-controlled. The MOV has been set up to close against 2750 psid as required for its active safety function. The MOV has no safety function to open, but has been set up to open against 2750 psid for commercial purposes	Close	Limit Switch	Rising Stem	Flex Wedge Gate
BGHV8110	A CCP DISCH MINIFLOW TO SEAL WTR HX ISO	BGHV8110 is a 2 inch Velan globe valve equipped with a SMB-00 Limitorque actuator. The motor-operated valve (MOV) is set up to close using torque switch control and open using limit switch control. The MOV has been set up to open and close against 2750 psid as required for its active safety functions.	Open & Close	Torque Switch	Rising Stem	Globe
BGHV8111	CCP B DISCH MINIFLOW ISO VLV	BGHV8111 is a 2 inch Velan globe valve equipped with a torque closed SMB-00 Limitorque actuator. This MOV is set up to close against 2750 psid and open against 2750 as required by its active safety function.	Open & Close	Torque Switch	Rising Stem	Globe
BGHV8112	SEAL WTR RTN INNER CTMT ISO HV	BGHV8112 is a 2 inch Velan globe valve equipped with a Limitorque SMB-00 actuator. The close stroke is torque switch controlled. The MOV has been set up to close against 155 psid as required for its active safety function. The MOV has no safety function to open, but has been set up to open against 155 psid for commercial purposes	Close	Torque Switch	Rising Stem	Globe
BGHV8357A	CVCS CCP A DISCH TO RCP SEALS THROTTLE VLV	BGHV8357A is a 1" Anchor Darling globe valve equipped with an SMB-000 operator. Valve closure is controlled by torque. The MOV is jog controlled; i.e., the control circuit does not seal in. BGHV8357A is set up to open and close against 2722 psid as required by its active safety function	Open & Close	Torque Switch	Rising Stem	Globe

DESCRIPTION OF MOTOR OPERATED VALVES

BGHV8357B	CVCS CCP B DISCH TO RCP SEALS THROT VLV	BGHV8357B is a 1" Anchor Darling globe valve equipped with an SMB-000 operator. Valve closure is controlled by torque. The MOV is jog controlled; i.e., the control circuit does not seal in. BGHV8357B is set up to open and close against 2722 psid as required by its active safety function.	Open & Close	Torque Switch	Rising Stem	Globe
BGLCV0112B	CVCS VCT OUT UPSTRM ISO	BGLCV0112B is a 4" Westinghouse flex wedge gate valve equipped with a type SB-00 operator. This valve has active safety functions to open and close against 100 psid. Closure is controlled by torque switch.	Open & Close	Torque Switch	Rising Stem	Globe
BGLCV0112C	CVCS VCT OUT DNSTRM ISO	BGLCV0112C is a 4 inch Westinghouse flex wedge gate valve equipped with a SB-00 Limitorque actuator. The motor-operated valve (MOV) is set up to close using torque switch control. The MOV has been set up to close against 100 psid as required for it's safety function. BGLCV0112C has no safety function to open, but has been set up to open against 100 psid for commercial purposes	Close	Torque Switch	Rising Stem	Globe
BNHV0003	RWST TO CTMT SPRY PMP B HV	BNHV0003 is a 12" flex wedge gate valve equipped with a type SMB-00 actuator. Closure is controlled by torque switch. This valve has a required safety function to open and close against 32 psid.	Open & Close	Torque Switch	Rising Stem	Globe
BNHV0004	RWST TO CTMT SPRY PMP A HV	BNHV0004 is a 12" flex wedge gate valve equipped with a type SMB-00 actuator. Closure is controlled by torque switch. This valve has an active safety function to open and close against 32 psid.	Open & Close	Torque Switch	Rising Stem	Globe
BNHV8806A	SI PMP A SUCT FROM RWST ISO	BNHV8806A is a Westinghouse 8-inch B flex wedge gate valve equipped with a type SB-00 actuator which opens and closes the valve on limit. BNHV8806A is set-up to meet an extrapolated close DP of 2350 lbs. and an extrapolated open DP of 4219 lbs. The safety related function is to close.	Close	Limit Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

BNHV8806B	SI PUMPS SUCTION FROM RWST ISO	BNHV8806B is a Westinghouse 8-inch B flex wedge gate valve equipped with a type SB-00 actuator which opens and closes the valve on limit. BNHV8806A is set-up to meet an extrapolated close DP of 2350 lbs. and an extrapolated open DP of 4219 lbs. The safety related function is to close.	Close	Limit Switch	Rising Stem	Flex Wedge Gate
BNHV8812A	RWST TO RHR PMP A SUCTION ISO VLV	BNHV8812A is a Westinghouse 14" flex wedge gate valve equipped with a type SB-1 actuator. Closure is controlled by torque switch. The motor operated valve (MOV) has been setup to close against 33 psid as required for its active safety function and has been setup to open against 33 psid to satisfy its commercial function.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
BNHV8812B	RWST TO RHR PMP B SUCTION ISO VLV	BNHV8812B is a Westinghouse 14" flex wedge gate valve equipped with a type SB-1 actuator. Closure is controlled by torque switch. The motor operated valve (MOV) has been setup to close against 33 psid as required for its active safety function and to open against 33 psid to satisfy its commercial function.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
BNHV8813	SI PUMPS MINIFLOW TO RWST ISO VLV (3.0.3)	BNHV8813 is a 2-inch Velan globe valve equipped with a Limitorque SMB-00 actuator. The close stroke is torque switch controlled. The MOV has been set up to close against 1552 psid as required for its active safety function. The MOV has no safety function to open, but has been set up to open against 1552 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Globe
BNLCV0112D	CCP A SUCTION FROM RWST ISO VLV	BNLCV0112D is a 4" Westinghouse flex wedge gate valve equipped with an SB-00 operator. Valve closure is controlled by limit switch. There is no close torque switch in the circuit. The Motor Operated Valve (MOV) has been setup to open against a safety related DP of 92 psid, and close against a safety related DP of 242 psid.	Open & Close	Limit Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

BNLCV00112E	CCP B SUCT FROM RWST ISO VLV	BNLCV00112E is a 4" Westinghouse flex wedge gate valve with a type SB-00 Limitorque actuator. Both the close and open strokes are controlled by limit switch. This MOV has been set up to open against 92 psid and close against 242 psid, as required by its active safety functions.	Open & Close	Limit Switch	Rising Stem	Flex Wedge Gate
ECHV00011	FUEL POOL HX A SHELL SIDE CCW OUT ISO	ECHV00011 is an 12 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-1 Limitorque gearbox. This Motor Operated Valve (MOV) has been setup to open and close against 119 psid, as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
ECHV00012	FUEL POOL HX B SHELL SIDE CCW OUT ISO	ECHV00012 is an 12 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-1 Limitorque gearbox. This MOV has been setup to open and close against 119 psid, as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV00023	SERV WTR TO ESW TRN A UPSTRM HV	EFHV00023 is a 30 inch Anchor-Darling stainless steel butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 157 psid as required by its active safety function. The valve has no safety function to open, but has been set up to open against 81 psid as required by commercial function.	Close	Limit Switch	QT	Butterfly
EFHV00024	SERV WTR TO ESW TRN B UPSTRM HV	EFHV00024 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 150 psid as required by its active safety function. The valve has no safety function to open; the MOV is set up to open against 81 psid as required by commercial function	Close	Limit Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

EFHV0025	SERV WTR TO ESW TRN A DNSTRM HV	EFHV0025 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 157 psid as required by its active safety function. The valve has no safety function to open; the MOV is set up to open against 81 psid as required by commercial function.	Close	Limit Switch	Quarter Turn	Butterfly
EFHV0026	SERV WTR TO ESW TRN B DNSTRM HV	EFHV0026 is a 30 inch Anchor Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 150 psid as required by its active safety function. The valve has no safety function to open; the MOV is set up to open against 81 psid as required by commercial function	Close	Limit Switch	Quarter Turn	Butterfly
EFHV0031	ESW TRN A TO CTMT AIR CLRS OUTER CTMT HV	EFHV0031 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been set up to open and close against 134 psid as required by its active safety functions	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0032	ESW TRN B TO CTMT AIR CLRS OUTER CTMT HV	EFHV0032 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 152 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0033	ESW TRN A TO CTMT AIR CLRS INNER CTMT HV	EFHV0033 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been set up to open and close against 154 psid as required by its active safety functions	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0034	ESW TRN B TO CTMT AIR CLRS INNER CTMT HV	EFHV0034 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This Motor Operated Valve (MOV) has been setup to open and close against 150 psid as required by its active safety functions	Open & Close	Limit Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

EFHV0037	ESW TRN A TO UHS HV	EFHV0037 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to open against 159 psid as required by its active safety function. The valve has no safety function to close; the commercial requirement is to close against 159 psid	Open	Limit Switch	Quarter Turn	Butterfly
EFHV0038	ESW TRN B TO UHS HV	EFHV0038 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been set up to open against 151psid as required by its active safety function and close against Service Water System return pressure as a commercial requirement.	Open	Limit Switch	Quarter Turn	Butterfly
EFHV0039	ESW TRN A TO SERV WTR UPSTRM HV	EFHV0039 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 82 psid as required for its active safety function and open against 146 psid as required for its commercial function.	Close	Limit Switch	Quarter Turn	Butterfly
EFHV0040	ESW TRN B TO SERV WTR UPSTRM HV	EFHV0040 is a 30 inch Anchor Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 96 psid as required by its active safety function. The valve has no safety function to open; the MOV is set up to open against 146 psid as required by commercial function	Close	Limit Switch	Quarter Turn	Butterfly
EFHV0041	ESW TRN A TO SERV WTR DNSTRM HV	EFHV0041 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 82 psid as required for its active safety function and open against 146 psid as required for its commercial function.	Close	Limit Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

EFHV0042	ESW TRN B TO SERV WTR DNSTRM HV	EFHV0042 is a 30 inch Anchor-Darling butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 81 psid as required by its active safety function and open against Service Water System return pressure at 50 psid across the MOV. EFHV0042 has no safety function to open	Close	Limit Switch	Quarter Turn	Butterfly
EFHV0045	ESW TRN A FROM CTMT AIR CLRS INNER CTMT HV	EFHV0045 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been set up to open and close against 154 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0046	ESW TRN B FROM CTMT AIR CLRS INNER CTMT HV	EFHV0046 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator mated to an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 157 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0047	ESW TRN A FROM CTMT AIR CLRS BYP ISO HV	EFHV0047 is a 10 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-1 Limitorque gearbox. This MOV has been set up to open and close against 0 and 64 psid respectively, as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0048	ESW TRN B FROM CTMT AIR CLRS BYP ISO HV	EFHV0048 is a 10 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-1 Limitorque gearbox. This Motor Operated Valve (MOV) has been set up to open and close against 0 and 57 psid, respectively, as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0049	ESW TRN A FROM CTMT AIR CLRS OUTER CTMT HV	EFHV0049 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 10 and 64 psid, respectively, as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

EFHV0050	ESW TRN B FROM CTMT AIR CLRS OUTER CTMT HV	EFHV0050 is a 14 inch Neles-Jamesbury butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 10 and 57 psid, respectively, as required by its active safety functions	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0051	ESW TRN A TO CCW HX A HV	EFHV0051 is a 24 inch Fisher Butterfly valve equipped with a SMB 00 Limitorque actuator and a HBC-3 Limitorque gearbox. This valve has been set up to open against 123 psid as required by its active safety function. The valve has no safety function to close; however the MOV has been set up to close against 157 psid for commercial function	Open	Limit Switch	Quarter Turn	Butterfly
EFHV0052	ESW TRN B TO CCW HX B HV	EFHV0052 is a 24 inch Fisher butterfly valve equipped with an SMB 00 Limitorque actuator and a HBC-3 Limitorque gearbox. It has been set up to open against 123 psid as required by its active safety function. EFHV0052 has no safety function to close, but has been set up to close against 123 psid for commercial function.	Open	Limit Switch	Quarter Turn	Butterfly
EFHV0059	ESW TRN A FROM CCW HX A HV	EFHV0059 is a 24 inch Fisher Butterfly valve equipped with an SMB 00 Limitorque actuator with an HBC-3 Limitorque gearbox. This valve has been set up to close against 113 psid as required by its active safety function. EFHV0059 has no safety function to open; but has been set up to open against 113 psid for commercial function.	Close	Limit Switch	Quarter Turn	Butterfly
EFHV0060	ESW TRN B FROM CCW HX B HV	EFHV0060 is a 24 inch Fisher butterfly valve equipped with an SMB-00 Limitorque actuator and an HBC-3 Limitorque gearbox. This MOV has been setup to close against 77 psid as required by its active safety function. EFHV0060 has no safety function to open, but has been set up to open against 77 psid for commercial purposes.	Close	Limit Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

EFHV0065	ESW UHS COOL-TWR TRN A BYP HV	EFHV0065 is a 30 inch Anchor Darling butterfly valve equipped with an SMB-00 Limatorque actuator and an HBC-3 Limatorque gearbox. This MOV has been setup to open and close against 20 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0066	ESW UHS COOL-TWR TRN B BYP HV	EFHV0066 is a 30 inch Anchor Darling butterfly valve equipped with an SMB-00 Limatorque actuator and an HBC-3 Limatorque gearbox. This MOV has been setup to open and close against 20 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EFHV0097	ESW PMP A DISCH RECIRC HV	EFHV0097 is a 3 inch Velan solid wedge gate valve equipped with an SMB-000 Limatorque actuator. The MOV is set up to close on torque and open on limit. This MOV has been set up to close against 125 psid as required by its active safety function. The valve has no safety function to open; the MOV is set up to open against 125 psid as required by its commercial function.	Close	Torque Switch	Rising Stem	Solid Wedge Gate
EFHV0098	ESW PMP B DISCH RECIRC HV	EFHV0098 is a 3 inch Velan solid wedge gate valve equipped with an SMB-000 Limatorque actuator. The Motor Operated Valve (MOV) is set up to close on torque and open on limit. This MOV has been set up to close against 150 psid as required by its active safety function. The valve has no safety function to open however; the MOV is set up to open against 125 psid as required by its commercial function.	Close	Torque Switch	Rising Stem	Solid Wedge Gate
EFPDV0019	ESW S-C STR A DRN DP CTRL VLV	EFPDV0019 is a Stainless Steel 3" Flowserve flex wedge gate valve equipped with a torque controlled Limatorque SMB-000 actuator. This motor operated valve (MOV) has been setup to open and close against 148 psid as required by its active safety functions	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EFPDV0020	ESW S-C STR B DRN DP CTRL VLV	EFPDV0020 is a Stainless Steel 3" Flowserve flex wedge gate valve equipped with a torque controlled Limitorque SMB-000 actuator. This motor operated valve has been setup to open and close against 150 psid as required by its active safety functions	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EGHV0011	ESW TO CCW TRN A UPSTRM HV	EGHV0011 is a 1.5 inch Yarway rotating rising stem globe valve with a Limitorque SMB-000 operator. This MOV has been set up to open against 137 psid as required by its active safety function and close against 137 psid as desired by its commercial function	Open	Torque Switch	Rising Stem	Globe
EGHV0012	ESW TO CCW TRN B UPSTRM HV	EGHV0012 is a 1.5-inch Yarway rotating rising stem globe valve with a Limitorque SMB-000 operator. This MOV has been set up to open against 139 psid as required by its active safety function and close against 139 psid as required by its commercial function.	Open	Torque Switch	Rising Stem	Globe
EGHV0013	ESW TO CCW TRN A DNSTRM HV	EGHV0013 is a 1.5 inch Yarway rotating rising stem globe valve with a Limitorque SMB-000 operator. This MOV has been set up to open against 137 psid as required by its active safety function and close against 137 psid as desired by its commercial function.	Open	Torque Switch	Rising Stem	Globe
EGHV0014	ESW TO CCW TRN B DNSTRM HV	EGHV0014 is a 1.5 inch Yarway rotating rising stem globe valve with a Limitorque SMB-000 operator. This MOV has been set up to open against 139 psid as required by its active safety function and close against 139 psid as required by its commercial function.	Open	Torque Switch	Rising Stem	Globe
EGHV0015	CCW TRN A SPLY/RTN ISO HV	EGHV0015 is an 18 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 109 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

EGHV0016	CCW TRN B SPLY/RTN ISO HV	EGHV0016 is a 18 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This Motor Operated Valve (MOV) has been setup to open and close against 109 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EGHV0053	CCW TRN A SPLY ISO HV	EGHV0053 is an 18 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 109 psid as required by its active safety functions	Open & Close	Limit Switch	Quarter Turn	Butterfly
EGHV0054	CCW TRN B SPLY ISO HV	EGHV0054 is a 18 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-2 Limitorque gearbox. This MOV has been setup to open and close against 108 psid as required by its active safety functions.	Open & Close	Limit Switch	Quarter Turn	Butterfly
EGHV0058 EGHV0059	CCW TO CTMT OUTER ISO HV	EGHV0058 is a 12 inch Anchor-Darling double disk gate valve equipped with an SMB-00 Limitorque actuator. A torque switch is used for control in the closing stroke direction. Open control is achieved by limit switch. The motor-operated valve (MOV) has been set up to close against 112 psid as required by its active safety function. EGHV0058 has been set up to open against 112 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Double Disk Gate
EGHV0060		EGHV0060 is a 12 inch Anchor/Darling double disc gate valve equipped with an SMB-00 Limitorque actuator. This MOV has been setup to close against 112 psid as required for its active safety function. EGHV0060 has also been set up to open against 112 psid to meet its commercial function.	Close	Torque Switch	Rising Stem	Double Disk Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EGHV0061	CCW FROM RCP THRM BAR OUTER CTMT ISO	EGHV0061 is a 4" Velan parallel slide gate valve equipped with an SMB-000 operator. Valve closure is controlled by limit with a torque switch in the circuit for over thrust/torque protection. This MOV is setup to close against 112 psid as required by it's safety function. EGHV0061 is set up to open against 112 psid for commercial purposes.	Close	Limit Switch with Torque Switch	Rising Stem	Parallel Sliding Gate
EGHV0062		EGHV0062 is a 4" Velan parallel slide gate valve equipped with a type SMB-0 actuator. This containment isolation valve has an active safety function to close against 2335 psid and a commercial function to open against 112 psid.	Close	Limit Switch with Torque Switch Bypass	Rising Stem	Parallel Sliding Gate
EGHV0071	CCW TO CTMT OUTER ISO VLV	EGHV0071 is an Anchor Darling 12" flex wedge gate valve equipped with a Limitorque type SMB-00 operator. The valve has no active safety function to open or close. The MOV is setup to open and close against a commercial DP of 112 psid. Closure is controlled by torque switch	None	Torque Switch	Rising Stem	Flex Wedge Gate
EGHV0101	CCW TO RHR HX A ISO	EGHV0101 is an 18" Fisher butterfly valve equipped with a Limitorque SMB-000 actuator and a Limitorque H2BC gearbox. This MOV has been setup to open and close against 104 psid, as required by its active safety functions.	Open & Close	Limit Switch without Torque Switch	Quarter Turn	Butterfly
EGHV0102	CCW TO RHR HX B ISO	EGHV0102 is an 18" Fisher butterfly valve equipped with a Limitorque SMB-000 actuator and a H2BC gearbox. This MOV has been setup to open and close against 109 psid, as required by its active safety functions	Open & Close	Limit Switch without Torque Switch	Quarter Turn	Butterfly
EGHV0126	CCW TO CTMT BYP VLV	EGHV0126 is a 12 inch Anchor/Darling flex wedge gate valve equipped with an SMB-00 Limitorque actuator. The close stroke is torque switch controlled. The MOV is passive, having no safety function to open or close. EGHV0126 is, however, set up to open and close against 112 psid for commercial purposes.	None	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EGHV0127	CCW TO CTMT BYP ISO HV	EGHV0127 is a 12 inch Anchor/Darling double disk gate valve equipped with a torque controlled Limitorque SMB-00 actuator. This MOV has been set up to close against 112 psid as required by it's passive safety function. EGHV0127 has also been set up to open against 112 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Double Disk Gate
EGHV0130	CCW FROM RCS CTMT EGHV0060 BYP ISO HV	EGHV0130 is a 12 inch Anchor/Darling double disk gate valve equipped with an SMB-00 Limitorque actuator. The close stroke is torque switch controlled. Originally, this valve had no safety function to open or close. However, to meet a commitment to operate against design basis differential pressure, unless an operator is stationed at the valve when the companion MOV (EGHV0060) is out of service, EGHV0130 has been set up to open and close against 112 psid as required for the part-time safety functions.	Close	Torque Switch	Rising Stem	Double Disk Gate
EGHV0131	CCW FROM CTMT EGHV0059 BYP ISO	EGHV0131 is a 12 inch Anchor/Darling double disk gate valve equipped with an SMB-00 Limitorque actuator. The close stroke is torque switch controlled. EGHV0131 has been set up to open and close against 112 psid as required for the part-time safety functions.	Close	Torque Switch	Rising Stem	Double Disk Gate
EGHV0132	CCW FROM RCS CTMT EGHV0062 BYP ISO HV	EGHV0132 is a 4" Velan parallel slide gate valve equipped with a type SMB-00 actuator. This containment isolation valve only has an active safety function to close when it is opened during normal power operation. EGHV0132 must close against a DP of 2335 psid. Closure control is by limit switch with the torque switch as backup protection.	Close	Limit Switch with Torque Switch Bypass	Rising Stem	Parallel Sliding Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EGHV0133	CCW FROM RCP THRM BAR EGHV0061 BYP ISO	EGHV0133 is a 4 inch Velan parallel disk gate valve equipped with an SMB-000 Limitorque actuator. Both the open and close strokes are controlled by limit switches, with the torque switch providing over-torque and over-thrust protection. This valve has only passive safety functions, unless it is open for maintenance on EGHV0061 during power operations. The valve requires a Local Leak Rate Test (LLRT) whenever the close limit switch is adjusted. This MOV has been set up to open and close against 112 psid as required by its commercial functions.	Close	LS w/ TS	Rising Stem	Parallel Disk Gate
EJFCV0610	A RHR PMP MINI FLOW RECIRC FLOW CTRL VLV	EJFCV0610 is a Westinghouse 3" flex wedge gate valve equipped with a type SMB-000 Limitorque actuator, designed to open and close on limit. The MOV has been set up to open and close against 200 psid as required for its active safety functions.	Open & Close	LS w/o TS	Rising Stem	Flex Wedge Gate
EJFCV0611	RHR PUMP B MINIMUM FLOW CTRL VLV	EJFCV0611 is a 3 inch Westinghouse flex wedge gate valve equipped with an SMB-000 Limitorque actuator, designed to open and close on limit. The MOV has been set up to open and close against 200 psid as required for its active safety functions.	Open & Close	LS w/o TS	Rising Stem	Flex Wedge Gate
EJHV8701A	RHR PUMP A SUCT ISO	EJHV8701A is a 12 inch Westinghouse flex wedge gate valve equipped with an SMB-2 Limitorque actuator. This motor operated valve (MOV) has been setup to open against 380 psid and close against 464 psid as required for its active safety functions related to flow control, and close against 60 psid as required for its active safety function related to pressure isolation.	Open & Close	TS-SS	Rising Stem	Flex Wedge Gate
EJHV8701B	RHR PUMP B SUCT ISO	EJHV8701B is a 12 inch Westinghouse flex wedge gate valve equipped with an SMB-2 Limitorque actuator. This motor operated valve (MOV) has been setup to open against 380 psid and close against 464 psid as required for its active safety functions.	Open & Close	TS-SS	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EJHV8716A	RHR TRN A SI SYS HOT LEG RECIRC ISO (3.0.3)	EJHV8716A is a 10 inch Westinghouse flex wedge gate valve equipped with an SB-1 Limitorque actuator, designed to open and close on limit. The MOV has been set up to open and close against 228 psid as required for its active safety functions.	Open & Close	LS w/o TS	Rising Stem	Flex Wedge Gate
EJHV8716B	RHR TRN B SI SYS HOT LEG RECIRC ISO (3.0.3)	EJHV8716B is a 10 inch Westinghouse flex wedge gate valve equipped with an SB-1 Limitorque actuator, designed to open and close on limit. The MOV has been set up to open and close against 228 psid as required for its active safety functions.	Open & Close	LS w/o TS	Rising Stem	Flex Wedge Gate
EJHV8804A	RHR TRN A CHARGING PUMPS SPLY ISO	EJHV8804A is an 8 inch Westinghouse flex wedge gate valve equipped with a Limitorque SB-00 actuator. The MOV is limit-controlled. The MOV has been set up to open against 251 psid as required for its active safety function	Open & Close	LS w/o TS	Rising Stem	Flex Wedge Gate
EJHV8804B	RHR TRN B SI PUMPS SPLY ISO	EJHV8804B is an 8 inch Westinghouse flex wedge gate valve equipped with a Limitorque SB-00 actuator. The MOV is limit-controlled and has been set up to open and close against 251 psid as required for its active safety functions.	Open & Close	LS w/o TS	Rising Stem	Flex Wedge Gate
EJHV8809A	RHR TRN A ACC INJ SPLY ISO (3.0.3)	EJHV8809A is a 10 inch Westinghouse flex wedge gate valve equipped with an SBD-3 Limitorque actuator. The open stroke is controlled by a limit switch. The close stroke, which was previously controlled by the torque switch, has been changed, per RFR 18919A, to also close on limit, to stop flow, with the torque switch activated at the end of the stroke to ensure leak tightness (soft seating). This MOV has been setup to open and close against 228 psid as required by its active function.	Close	TS-SS	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EJHV8809B	RHR TRN B ACC INJ SPLY ISO (3.0.3)	EJHV8809B is a 10 inch Westinghouse flex wedge gate valve equipped with an SBD-3 Limitorque actuator. The torque switch controls the close stroke while a limit switch controls the open stroke. This MOV has been set up to open and close against 228 psid as required by its active safety function.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
EJHV8811A	CTMT RECIRC SUMP A TO RHR PUMP A SUCTION ISO	EJHV8811A is a 14" Westinghouse flex wedge gate valve equipped with a type SB-1 operator. This Motor Operated Valve (MOV) is set up to open against 468 psid (ref. RFR CAR 200505692) and close against 53 psid for its active safety functions. Closure is controlled by torque switch.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EJHV8811B	CTMT RECIRC SUMP B TO RHR PUMP B SUCTION ISO	EJHV8811B is a 14" Westinghouse flex wedge gate valve equipped with a type SB-1 operator. This Motor Operated Valve (MOV) is set up to open against 468 psid (ref. RFR CAR 200505692) and close against 53 psid for its active safety functions. Closure is controlled by torque switch.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EJHV8840	RHR TRAIN A & B SI SYS HOT LEG RECIRC ISO (3.0.3)	EJHV8840 is a 10 inch Westinghouse flex wedge gate valve equipped with an SBD-3 actuator. The close stroke is controlled by the torque switch while the open stroke is controlled by a limit switch. This MOV has been setup to open and close against 228 psid as required by its active safety function.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8801A	BORON INJ HDR TRAIN A OUT TO COLD LEGS ISO	EMHV8801A is a 4 inch Westinghouse flex wedge gate valve equipped with an SBD-00 Limitorque actuator. This motor operated valve (MOV) has been setup to open against 2713 psid as required for its active safety function. EMHV8801A has also been set up to close against 2169 psid for commercial purposes. The valve uses limit switch control in both the open and close direction.	Open	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EMHV8801B	BORON INJ HDR TRN B OUT TO COLD LEGS ISO	EMHV8801B is a 4 inch Westinghouse flex wedge gate valve equipped with an SBD-00 Limitorque actuator, designed to open and close on limit. The MOV has been set up to open against a safety related DP of 2713 psid and close against a commercial DP of 2169 psid. This MOV uses limit switch control with a Target Seating Thrust of 8000 lbs	Open	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8802A	SI PMP A DISCH TO HOT LEG INJ ISO (3.0.3)	EMHV8802A is a 3 inch Westinghouse flex wedge gate valve equipped with a Limitorque SBD-00 actuator. The motor operated valve (MOV) has an active safety function to open and close against 250 psid. The commercial function is to open and close against 1570 psid. Close control is by torque switch.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8802B	SI PMP B DISCH TO HOT LEG INJ ISO (3.0.3)	EMHV8802B is a 3 inch Westinghouse flex wedge gate valve equipped with an SBD-00 Limitorque actuator, set up to open on limit and close on torque. The MOV has been set up to open and close against 250 psid as required for its active safety functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8803A	BORON INJ HDR SPLY FROM CCP A ISO	EMHV8803A is a 4" Westinghouse flex wedge gate valve equipped with an SBD-00 operator. Valve closure is controlled by limit. The close torque switch is not in the circuit. This MOV is set up to open and close against 2724 psid and 2180 psid respectively as required by its active safety functions.	Open & Close	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8803B	BORON INJ HDR SPLY FROM CCP B ISO	EMHV8803A is a 4" Westinghouse flex wedge gate valve equipped with an SBD-00 operator. Valve closure is controlled by limit. The close torque switch is not in the circuit. This MOV is set up to open and close against 2724 psid and 2180 psid respectively as required by its active safety functions.	Open & Close	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EMHV8807A	RHR HX A TO SI PMPS SUCT DNSTRM ISO VLV A	EMHV8807A is a 6" Westinghouse flex wedge gate valve equipped with a Limitorque SMB-00 actuator. The Motor Operated Valve (MOV) is torque switch controlled. EMHV8807A has been set up to open against an extrapolated DP thrust of 3110 lbs. and a close an extrapolated thrust of 4665 lbs. as required for its commercial functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8807B	RHR HX A TO SI PMPS SUCT DNSTRM ISO VLV B	EMHV8807B is a 6" Westinghouse flex wedge gate valve equipped with a Limitorque SMB-00 actuator. The MOV is torque switch controlled. The MOV has been set up to open and close with a DP thrust of 930 lbs. as required for its safety functions.	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8814A	SI PMP A RECIRC TO RWST ISO	EMHV8814A is a 1.5 inch Velan globe valve equipped with an SMB-00 Limitorque actuator. This Motor Operated Valve (MOV) has been setup to open and close against 1,552 psid as required by its active function.	Close	Torque Switch	RS	Globe
EMHV8814B	SI PMP B RECIRC TO RWST ISO	EMHV8814B is a 1.5 inch Velan globe valve equipped with SMB-00 Limitorque actuator. This MOV has been setup to close against 1552 psid as required by its active safety function. EMHV8814B has also been setup to open against 1552 psid as required by its commercial function	Close	Torque Switch	RS	Globe
EMHV8821A	SI PMP A DISCH TO COLD LEG INJ ISO	EMHV8821A is a 4" Westinghouse flex wedge gate valve with a type SB-00 Limitorque actuator. The MOV is set up to close on limit against 1734 psid as required by its safety function. EMHV8821A is also set up to open against 1552 psid for commercial purposes	Close	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8821B	SI PMP B DISCH TO COLD LEG INJ ISO	EMHV8821B is a 4" Westinghouse flex wedge gate valve with a type SB-00 Limitorque actuator. The MOV is set up to close on limit against 1734 psid as required by its safety function. EMHV8821B is also set up to open against 1552 psid for commercial purposes.	Close	Limit Switch without Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EMHV8835	SI PMPS DISCH TO COLD LEG INJ ISO (3.0.3)	EMHV8835 is a 4 inch Westinghouse flex wedge gate valve equipped with a Limitorque SBD-00 actuator. The motor operated valve (MOV) has an active safety function to open against 0 psid and close against 249 psid. The commercial function is to open and close against 1750 psid. Close control is by torque switch	Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8923A	RWST TO SI PMP A SUCT ISO HV (3.0.3)	EMHV8923A is a Westinghouse 6" flex wedge gate valve with a Limitorque SMB-00 operator. This MOV has been setup to close against 215 psid as required by its active safety function. EMHV8923A does not have a safety function to open, but has been set up to open against 50 psid for commercial function. This MOV utilizes torque switch control in the closing direction and limit switch control in the opening direction	Close	Torque Switch	Rising Stem	Flex Wedge Gate
EMHV8923B	RWST TO SI PMP B SUCT ISO HV	EMHV8923B is a 6" Westinghouse flex wedge gate valve equipped with a Limitorque SMB-00 actuator. The Motor Operated Valve (MOV) is torque switch controlled. The MOV has been set up to close against a DP of 215 psid as required for its safety function. EMHV8923B is also set up to open against a DP of 50 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
ENHV0001	CTMT RECIRC SMP TO CTMT SPRY PMP A HV	ENHV0001 is a 12" Anchor-Darling flex wedge gate valve equipped with a type SMB-00 actuator. The Motor Operated Valve (MOV) has been setup to open against 54 psid and close against 10 psid as required for its active safety functions. The MOV is torque switch controlled during the closing stroke and limit switch controlled during the opening stroke with the open torque switch bypassed for 80-85% of the stroke	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

ENHV0006	CTMT SPRY PMP A DISCH HV	ENHV0006 is a 10" Anchor-Darling flex wedge gate valve equipped with a type SMB-00 actuator. This motor operated valve (MOV) is set up to open against 244 psid for it's active safety function. ENHV0006 has no safety function to close.	Open	Torque Switch	Rising Stem	Flex Wedge Gate
ENHV0007	CTMT RECIRC SMP TO CTMT SPRY PMP B HV	ENHV0007 is a 12 inch Anchor Darling flex wedge gate valve equipped with a Limitorque SMB-00 actuator. The motor operated valve (MOV) is set up to open against 54 psid and close against 10 psid for its active safety functions. Closure is controlled by torque switch. The MOV is set up using EPRI Predictive Performance Methodology (PPM) per CALC MPR-1861 with compensation for pressure locking effects	Open & Close	Torque Switch	Rising Stem	Flex Wedge Gate
ENHV0012	CTMT SPRY PMP B DISCH HV	ENHV0012 is a 10 inch Anchor-Darling flex wedge gate valve equipped with an SMB-00 Limitorque actuator. Closure is controlled by torque switch. This MOV has been setup to open against 244 psid as required by its active safety function. The valve has no safety function to close.	Open	Torque Switch	Rising Stem	Flex Wedge Gate
EPHV8808A	SI ACC TK A OUT ISO	EPHV8808A is a 10" Westinghouse flex wedge gate valve equipped with an SBD-3 operator. Valve closure is controlled by torque. This valve has no safety function to open and must close against 0 DP.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
EPHV8808B	SI ACC TK B OUT ISO	EPHV8808B is a 10" Westinghouse flex wedge gate valve equipped with an SBD-3 operator. Valve closure is controlled by torque. This valve has no safety function to open and must close against 0 DP.	None	Torque Switch	Rising Stem	Flex Wedge Gate
EPHV8808C	SI ACC TK C OUT ISO OPER	EPHV8808C is a 10" Westinghouse flex wedge gate valve equipped with an SBD-3 operator. Valve closure is controlled by torque. This valve has no safety function to open and must close against 0 DP.	None	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

EPHV8808D	SI ACC TK D OUT ISO	EPHV8808D is a 10" Westinghouse flex wedge gate valve equipped with an SBD-3 operator. Valve closure is controlled by torque. This valve has no safety function to open, but does have a safety function to close against 0 psid. EPHV8808D is set up to open and close against 726 psid for commercial purposes	Close	Torque Switch	Rising Stem	Flex Wedge Gate
FCHV0312	AFP TURB MECH TRIP/THROT HV	FCHV0312 is a 4 inch Gimpel globe valve equipped with an SMB-000 Limitorque actuator. The actuator functions only to open the valve. The valve is closed rapidly by a spring mechanism when a trip lever is released by a solenoid. The actuator does not assist in the closing of the valve, but motors a short distance in the close direction following a spring-actuated close stroke. The open stroke of this MOV is also unique. The actuator first motors in the close direction (recompressing the spring mechanism and latching the trip lever), with the motor stopped by the torque switch. The actuator then opens the valve in a standard manner, running in the open direction, opening the valve, with the motor stopped by a limit switch. The MOV has been set up to open against 1220 psid as required for its active safety function.	Open	Torque Switch	Rising Stem	Globe
GSHV0020	H2 PURGE IN CTMT ISO HV	GSHV0020 is a 6 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-0 Limitorque gearbox. This motor operated valve (MOV) has been setup to open and close against 3 and 48 psid, respectively, as required by its active safety functions. Limit switch control is used for both open and close stroke control	Open & Close	Limit Switch without Torque Switch	Quarter Turn	Butterfly

DESCRIPTION OF MOTOR OPERATED VALVES

GSHV0021	H2 PURGE OUTER CTMT ISO HV	GSHV0021 is a 6 inch Fisher butterfly valve equipped with an SMB-000 Limitorque actuator and an HBC-0 Limitorque gearbox. This motor operated valve (MOV) has been setup to open and close against 3 and 48 psid, respectively, as required by its active safety functions. Limit switch control is used for both open and close stroke control	Open & Close	Limit Switch without Torque Switch	Quarter Turn	Butterfly
KAHV0030	H2 CTRL SYS M/U AIR HV	KAHV0030 is a 1.5" Borg-Warner solid wedge gate valve equipped with a type SMB-000 operator. The MOV has no active safety function to open or close. It is setup to open and close against a DP of 149 psid as desired to meet its commercial function. Closure is controlled by torque switch	None	Torque Switch	Rising Stem	Solid Wedge Gate
KCHV0253	F-PROT LOOP TO RX BLD OUTER CTMT DNSTRM ISO	KCHV0253 is a 4-inch Velan Parallel Disk Gate valve equipped with a limit controlled SMB 000 Limitorque actuator. This MOV is set up to open and close against 189 psid as required by its active safety functions.	Open & Close	Limit Switch with Torque Switch	Rising Stem	Parallel Disk Gate
LFFV0095	CTMT NORM SMP PMPS DISCH HDR CTMT FV	LFFV0095 is a 6" Anchor Darling flex wedge gate valve with a type SMB-00 actuator. The close stroke is torque switch controlled. The motor operated valve (MOV) has been set up to close against 58 psid as required for its active safety function. The MOV has no safety function to open, but has been set up to open against 10 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
LFHV0105	DRW SMPS DISCH HDR DNSTRM HV	LFHV0105 is a 6" Anchor Darling flex wedge gate valve with a type SMB-000 actuator. The close stroke is torque switch controlled. The MOV has been set up to close against 18 psid as required for its active safety function. The MOV has no safety function to open, but has been set up to open against 18 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Flex Wedge Gate

DESCRIPTION OF MOTOR OPERATED VALVES

LFHV0106	DRW SMPS DISCH HDR UPSTRM HV	LFHV0106 is a 6" Anchor Darling flex wedge gate valve with a type SMB-000 actuator. The close stroke is torque switch controlled. This motor operated valve (MOV) has been set up to close against 18 psid as required for its active safety function. The MOV has no safety function to open, but has been set up to open against 18 psid for commercial purposes.	Close	Torque Switch	Rising Stem	Flex Wedge Gate
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RIISING STEM-TORQUE SWITCH CONTROLLED MOTOR OPERATED VALVES

Valve ID	Valve Description	Test Cycle	Test Date	Safety Functions	Close Control	Close Operable Load Limit	Close Margin (%)	Close RV Limit	Close Thrust Limit
ALHV0005	MDAFP B TO S/G D HV	20	11/17/2014	OC	TS	0.35	182	0.17	0.8
ALHV0009	MDAFP TO S/G B HV	20	10/23/2014	OC	TS	0.73	36	0.53	0.71
ALHV0011	MDAFP TO S/G C HV	20	10/26/2014	OC	TS	0.71	41	0.49	0.86
BBHV8351A	RCP A SEAL WTR SPLY ISO HV	20	11/05/2014	None	TS	0.77	29	0.87	0.63
BBHV8351D	RCP D SEAL WTR SPLY ISO HV	20	11/01/2014	None	TS	0.55	83	0.99	0.88
BGHV8357A	CVCS CCP A DISCH TO RCP SEALS THROTTLE VLV	20	02/15/2014	OC	TS	0.47	113	0.47	0.37
BGLCV0112C	CVCS VCT OUT DNSTRM ISO	20	11/01/2014	C	TS	0.66	51	0.59	0.57
EFPDV0020	ESW S-C STR B DRN DP CTRL VLV	20	11/05/2014	OC	TS	0.48	109	0.49	0.39
EGHV0011	ESW TO CCW TRN A UPSTRM HV	20	10/29/2014	O	TS	0.06	1563	0.78	0.5
EGHV0012	ESW TO CCW TRN B UPSTRM HV	20	09/25/2013	O	TS	0.48	133	0.56	0.48
EGHV0014	ESW TO CCW TRN B DNSTRM HV	20	09/25/2014	O	TS	0.06	137	0.8	0.57
EGHV0071	CCW TO CTMT OUTER ISO VLV	20	10/31/2014	None	TS	0.75	37	0.91	0.59
EGHV0126	CCW TO CTMT BYP VLV	20	10/27/2014	None	TS	0.75	33	0.79	0.52
EGHV0130	CCW FROM RCS CTMT EGHV0060 BYP ISO HV	20	10/29/2014	OC	TS	0.84	19	0.74	0.61
EGHV0131	CCW FROM CTMT EGHV0059 BYP ISO	20	10/30/2014	OC	TS	0.74	35	0.87	0.69
ENHV0006	CTMT SPRY PMP A DISCH HV	20	11/26/2013	O	TS	0.92	9	0.68	0.7
ENHV0007	CTMT RECIRC SMP TO CTMT SPRY PMP B HV	20	11/02/2014	OC	TS	0.41	142	0.63	0.5
EPHV8808A-AI	SI ACC TK A OUT ISO	20	11/02/2014	None	TS	0.06	1600	0.52	0.47
FCHV0312	AFP TURB MECH TRIP/THROT HV	20	11/07/2014	O	TS	0.74	NA	NA	0.33
LFFV0095	CTMT NORM SMP PMPS DISCH HDR CTMT FV	20	11/02/2014	C	TS	0.33	200	0.76	0.42

RIISING STEM-TORQUE SWITCH CONTROLLED MOTOR OPERATED VALVES

Valve ID	Close Torque Limit	COF	Lubrication Limit	Unseating RV Limit	Current Limit	Remarks
ALHV0005	0.44	0.0331	0.22	0.02	NA	
ALHV0009	0.58	0.0738	0.49	0.21	NA	
ALHV0011	0.5	0.0470	0.31	0.04	NA	
BBHV8351A	0.74	0.0666	0.44	0.19	0.82	
BBHV8351D	0.82	0.0467	0.31	0.12	0.89	
BGHV8357A	0.31	0.1000	0.67	0.63	0.85	
BGLCV0112C	0.26	0.0451	0.30	0.29	0.86	
EFPDV0020	0.45	0.0890	0.55	0.31	0.88	
EGHV0011	0.68	NA	NA	0.52	0.97	
EGHV0012	0.56	NA	NA	0.57	0.92	
EGHV0014	0.73	NA	NA	0.38	0.83	
EGHV0071	0.57	0.0035	0.02	0.77	0.94	
EGHV0126	0.5	0.0914	0.61	0.79	1.00	Current Limit Acceptable to 200%
EGHV0130	0.71	0.0752	0.50	0.35	0.7	
EGHV0131	0.74	0.1003	0.67	0.18	0.79	
ENHV0006	1.16	0.1011	0.67	0.34	0.9	
ENHV0007	0.51	0.0399	0.27	0.29	1.04	Current Limit Acceptable to 200%
EPHV8808A-AI	0.34	0.0943	0.63	0.41	0.46	
FCHV0312	0.86	NA	0.00	0.23	NA	
LFFV0095	0.21	0.0780	0.52	0.38	0.86	

RIISING STEM-LIMIT SWITCH CONTROLLED MOTOR OPERATED VALVES

Valve ID	Valve Description	Test Cycle	Test Date	Close RV Limit	Close Thrust Limit	Close Torque Limit	COF	Valve Thrust Limit
BGLCV0112E	CCP B SUCT FROM RWST ISO VLV	20	09/25/2013	0.83	0.25	0.38	0.1790	0.31
EJHV8804B	RHR TRN B SI PUMPS SPLY ISO	20	11/01/2014	0.88	0.50	0.43	0.0993	0.71
EMHV8801A	BORON INJ HDR TRAIN A OUT TO COLD LEGS ISO	20	11/06/2014	0.55	0.58	0.38	0.0700	0.68

RIISING STEM-LIMIT SWITCH CONTROLLED MOTOR OPERATED VALVES

Valve ID	Lubrication Limit	Unseating RV Limit	Current Limit	Remarks
BGLCV0112E	1.03	0.39	0.69	
EJHV8804B	0.66	0.33	0.81	
EMHV8801A	0.47	0.10	0.68	

QUARTER TURN-LIMIT SWITCH CONTROLLED MOTOR OPERATED VALVES

Valve ID	Valve Description	Test Cycle	Test Date	Open Stroke Operable Load Limit	Open Stroke Unseating RV Limit	Open Stroke Disk/Pin Limit	Open Stroke Valve Stem Limit
ALHV0031	ESW TO MD AFP A HV	20	09/09/2014	0.58	0.21	0.42	0.43
ALHV0033	ESW TO TD AFP HV	20	11/19/2014	0.38	0.75	0.74	0.90
EFHV0023	SERV WTR TO ESW TRN A UPSTRM HV	20	06/11/2014	0.13	0.15	0.01	0.16
EFHV0037	ESW TRN A TO UHS HV	20	11/13/2014	0.70	0.79	0.19	0.82
EFHV0041	ESW TRN A TO SERV WTR DNSTRM HV	20	06/11/2014	0.14	0.34	0.24	0.36
EFHV0042	ESW TRN B TO SERV WTR DNSTRM HV	20	05/19/2014	0.60	0.51	0.15	0.54
EFHV0049	ESW TRN A FROM CTMT AIR CLRS OUTER CTMT HV	20	10/28/2014	0.08	0.45	0.24	0.28
EFHV0059	ESW TRN A FROM CCW HX A HV	20	05/04/2013	0.55	0.31	0.19	0.36
EGHV0015	CCW TRN A SPLY/RTN ISO HV	20	01/27/2015	0.28	0.18	0.02	0.25

QUARTER TURN-LIMIT SWITCH CONTROLLED MOTOR OPERATED VALVES

Valve ID	Open Stroke Current Limit	Design Margin Open (%)	Close Stroke RV Limit	Close Stroke Actuator Limit	Close Stroke Disk/Pin Limit	Close Stroke Valve Stem Limit	Close Stroke Current Limit	Design Margin Close (%)	Remarks
ALHV0031	1.00	131.00	0.24	0.17	0.95	0.78	1.01	349	Current Limit Acceptable to 200%
ALHV0033	0.81	115.00	0.47	0.27	0.56	0.60	0.82	205	
EFHV0023	0.79	287.00	0.34	0.50	0.22	0.47	0.82	145	
EFHV0037	0.87	22.00	0.82	0.87	0.19	0.82	0.88	17	
EFHV0041	0.79	399.00	0.11	0.28	0.16	0.27	0.79	434	
EFHV0042	0.80	47.00	0.69	0.71	0.21	0.67	0.83	69	
EFHV0049	0.75	407.00	0.53	0.26	0.16	0.32	0.73	139	
EFHV0059	0.97	47.00	0.18	0.15	0.04	0.22	0.97	183	
EGHV0015	0.88	254.00	0.60	0.64	0.60	0.85	0.88	282	