



ARKANSAS POWER & LIGHT COMPANY

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February 29, 1988

ØCANØ288Ø6

U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

ATTN: Mr. Robert D. Martin, Administrator

SUBJECT: Arkansas Nuclear One - Units 1 & 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
I.E. Bulletin 85-03: Motor-Operated
Valve Common Mode Failures During Plant
Transients Due to Improper Switch Settings

Dear Mr. Martin:

Arkansas Power and Light provided verification that motor-operated valve testing has been completed in accordance with Action Item "f" of IE Bulletin 85-03 by letter dated January 15, 1988 (ØCANØ188Ø5). To complete our response to Action Item "f", we are submitting a written report describing our approach to each of the Action Items from the Bulletin and a summary of data for each motor-operated valve that has been compiled in response to the Bulletin.

This report completes our response to I.E. Bulletin 85-03 for Arkansas Nuclear One, Units 1 and 2.

Very truly yours,

Dan R. Howard
Manager, Licensing

DRH:GW:mb

cc: U.S. Regulatory Commission
Document Control Desk
Washington, D.C. 20555

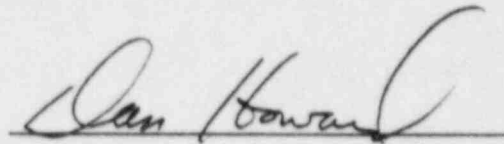
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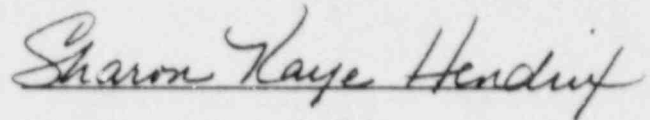
SS

i, Dan R. Howard, being duly sworn, subscribe to and say that I am Manager, Licensing for Arkansas Power & Light Company; that I have full authority to execute this oath; that I have read the document numbered ØCANØ288Ø6 and know the contents thereof; and that to the best of my knowledge, information and belief the statements in it are true.



Dan R. Howard

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the County and State above named, this 29th day of February, 1988.



Notary Public

My Commission Expires:

9-19-89

IE BULLETIN 85-03

MOTOR-OPERATED VALVE COMMON MODE FAILURES
DURING PLANT TRANSIENTS DUE TO IMPROPER SWITCH SETTINGS

WRITTEN REPORT

REQUESTED UNDER ITEM F, IEB 85-03

FOR

ARKANSAS POWER AND LIGHT COMPANY

ARKANSAS NUCLEAR ONE

UNITS - 1 AND 2

FEBRUARY, 1988

RESPONSE TO IE BULLETIN 85-03
ARKANSAS NUCLEAR ONE, UNITS 1 AND 2

IE Bulletin 85-03 (ØCNA118511) requested Arkansas Power and Light to implement a program to ensure that switch settings on high pressure safety injection and auxiliary feedwater system safety-related motor-operated valves (MOV's) are selected, set, and maintained correctly to accommodate the maximum differential pressures expected on these valves during both normal and abnormal events within the design basis. Provided below is the response for Arkansas Nuclear One, Units 1 and 2.

Action Item "a"

"Review and document the design basis for the operation of each valve. This documentation should include the maximum differential pressure expected during both opening and closing the valve for both normal and abnormal events to the extent that these valve operations and events are included in the existing, approved design basis, (i.e., the design basis documented in pertinent licensee submittals such as FSAR analyses and fully-approved operating and emergency procedures, etc.). When determining the maximum differential pressure, those single equipment failures and inadvertent equipment operations (such as inadvertent valve closures or openings) that are within the plant design basis should be assumed."

Response

Arkansas Power and Light has conducted the requested reviews for both Units 1 and 2 with these results documented in the attached "MOV Data Summary" Tables. These results were initially transmitted to the NRC by letter dated May 14, 1986 (ØCANØ586Ø3), as required by IE Bulletin 85-03.

Action Item "b"

"Using the results from item "a" above, establish the correct switch settings. This shall include a program to review and revise, as necessary, the methods for selecting and setting all switches (i.e., torque bypass, position limit, overload) for each valve operation (opening and closing).

If the licensee determines that a valve is inoperable, the licensee shall also make an appropriate justification for continued operation in accordance with the applicable technical specification."

Response

Arkansas Power and Light has implemented a program to review and revise, as necessary, the methods for selecting and implementing

Response (cont.)

switch settings. These activities for the 85-03 Bulletin MOV's and the additional MOV's that were tested, were performed under a special work plan that was utilized for MOV testing and other MOV related inspections. MOVATS (Motor Operated Valve Analysis and Testing System) was utilized to accurately set switches based on the desired thrust values and switch trip points, as described in our letter to the NRC dated October 1, 1986 (ØCAN1Ø86Ø2).

In accordance with IE Bulletin 85-03, existing switch settings were reviewed for operability with regard to the design differential pressures imposed by IE Bulletin 85-03 and these results are shown in the attached "MOV Data Summary" Tables in the "As Found Valve Operability" column. This review of "As Found Operability" concentrates on the individual actuator travel in both directions by examining the torque switch bypass, undervoltage requirements, the as-found torque switch trip (TST) and the minimum setting limits derived from the valve and actuator calculations. The end results of this review was the designation of each MOV as either "operable", "inoperable" or if it could not be determined, "indeterminate". For those designated "indeterminate", each MOV was not considered inoperable based on the high probability that it would have performed its function due to the conservatism in the calculations. These operability classifications deal only with the operability of the MOV (As Found) in the direction given and are not comparable to "operability" as defined by the Technical Specifications.

Operability evaluations of the MOV in accordance with the applicable Technical Specifications were performed at the time of the diagnostic testing (MOVATS) to determine the reportability of any inoperable MOV's. These evaluations were performed considering the safety function of the MOV, the requirements of the system containing the MOV, and previous operating and testing performance. As a result of these evaluations, no reportable items per 10CFR50.72 and 10CFR50.73 were found during the Unit 1 and 2 MOV testing.

Action Item "c"

"Individual valve settings shall be changed, as appropriate, to those established in item "b", above. Whether the valve setting is changed or not, the valve will be demonstrated to be operable by testing the valve at the maximum differential pressure determined in item "a" above with the exception that testing motor-operated valves under conditions simulating a break in the line containing the valve is not required. Otherwise, justification should be provided for any cases where testing with

Action Item "c" (cont.)

the maximum differential pressure cannot practicably be performed. This justification should include the alternative to maximum differential pressure testing which will be used to verify the correct settings.

Note: This bulletin is not intended to establish a requirement for valve testing for the condition simulating a break in the line containing the valve. However, to the extent that such valve operation is relied upon in the design basis, a break in the line containing the valve should be considered in the analyses prescribed in items "a" and "b" above. The resulting switch settings for pipe break conditions should be verified, to the extent practical, by the same methods that would be used to verify other settings (if any) that are not tested at the maximum differential pressure.

Each valve shall be stroke tested, to the extent practical, to verify that the settings defined in item "b" above have been properly implemented even if testing with differential pressure cannot be performed".

Response

Each MOV tested in accordance with I.E. Bulletin 85-03 was tested to verify that the settings defined in Action Item "b" were properly implemented and the MOV functions properly at these settings. The "Test Method Description/Justification" column in the attached "MOV Data Summary" Tables describe what testing was performed on each MOV.

Differential pressure (DP) testing was performed on selected valves representing valve groups that encompass all the I.E. Bulletin 85-03 valves. Differential pressure testing was performed on 17 MOV's in ANO Unit 1 and 16 MOV's in Unit 2. Most of the MOV's were DP tested close to their design DP from the results of Action Item "a". In cases where the maximum DP could not be obtained, the valve stem thrust recorded at the test pressure was extrapolated up to the design DP. The method used to extrapolate valve stem thrust was a simple ratio of the design to test pressures multiplied by the test thrust. This extrapolation method was described in our response to additional questions in our letter dated October 6, 1987 (1CAN108703).

Though the DP testing performed was considered sufficient in most respects, not all valve types were tested. Explanations are provided in the attached "MOV Data Summary" Tables for valves that could not be DP tested.

Response (cont.)

Evaluation of the results of DP testing provided confidence that the calculations utilized to predict the performance of the MOV's are conservative and can be used to set torque switches on other MOV's at ANO using MOVATS equipment and procedures.

Action Item "d"

"Prepare or revise procedures to ensure that correct switch settings are determined and maintained throughout the life of the plant. Ensure that applicable industry recommendations are considered in the preparation of these procedures.

This item is intended to be completely consistent with action item 3.2, "Post-Maintenance Testing (All Other Safety-Related Components)," of Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events." These procedures should include provisions to monitor valve performance to ensure the switch settings are correct. This is particularly important if the torque or torque bypass switch setting has been significantly raised above that required."

Response

Procedures are in place to ensure that correct switch settings are maintained. We are presently evaluating the enhancement of our program with a new administrative procedure to be used in setpoints selection. Our procedures are based on the outcome from our testing program and the development of industry experience based on applicable industry recommendations.

Action Item "e"

"Within 180 days of the date of this bulletin, submit a written report to the NRC that: (1) reports the results of item "a" and (2) contains the program to accomplish items "b" through "d" above including a schedule for completion of these items. The schedule shall ensure that these items are completed as soon as practical and within two years from the date of this bulletin".

Response

Arkansas Power and Light responded to this item on May 14, 1986 with a written report (0CAN058603) sent to Region IV submitting the results of Action Item "a" and a description of our program for Items "b" through "d".

Action Item "f"

Provide a written report on completion of the above program. This report should provide (1) a verification of completion of the requested program, (2) a summary of the findings as to valve operability prior to any adjustments as a result of this bulletin, and (3) a summary of data in accordance with Table 2, Suggested Data Summary Format. The NRC staff intends to use this data to assist in the resolution of Generic Issue II.E.6.1. This report shall be submitted to the NRC within 60 days of completion of the program. Table 2 should be expanded, if appropriate, to include a summary of all data required to evaluate the response to this bulletin.

Response

This written report with the attached "MOV Data Summary" Tables along with our initial response to this Action Item in our letter dated January 15, 1988 (ØCANØ188Ø5), completes Arkansas Power and Light's response to I.E. Bulletin 85-03.

ATTACHMENTS

MOV Data Summary Table for ANO - Unit 1,
High Pressure Safety Injection System - 2 pages

MOV Data Summary Table for ANO - Unit 1,
Emergency Feedwater System - 4 pages.

MOV Data Summary Table for ANO - Unit 2,
High Pressure Safety Injection System - 4 pages.

MOV Data Summary Table for ANO - Unit 2,
Emergency Feedwater System - 4 pages.

General notes on Tables;

- Three valves were changed-out as a result of the MOV testing and are identified by an (*) on the tables. The valve information shown in the table describes data on the new valve that was installed, however, "As-Found Operability" is based on the valve that was removed.
- 2CV-0707 was removed from our original IEB 85-03 list, reference ~~ØCANØ586Ø3~~, since the MOV is being exercised manually with power removed to the actuator.

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 1
HIGH PRESSURE SAFETY INJECTION SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|---|---|---|----------------------|----------------------|---|---------------------------------------|----------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| CV-1219 Velan, Globe B9-374B-13MS 2.5", 1500 lb. | Limitorque SMB-00 1700 RPM 44 RPM | HPI Valve to Loop A | 2758 psi 2937 psi | 2928 psi 2928 psi | 1.5/2.0 | 1.5/1.5 | Operable Inoperable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-1220 Velan, Globe B9-374B-13MS 2.5", 1500 lb. | Limitorque SMB-00 1700 RPM 44 RPM | HPI Valve to Loop A | 2758 psi 2937 psi | 2948 psi 2948 psi | 1/2 | 1/1.375 | Operable Indeterminate | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-1227 Velan, Globe B9-374B-13MS 2.5", 1500 lb. | Limitorque SMB-00 1700 RPM 44 RPM | HPI Valve to Loop B | 2758 psi 2937 psi | 2928 psi 2928 psi | 1/1 | 1/1.5 | Operable Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-1228 Velan, Globe B9-374-03MS 2.5", 1500 lb. | Limitorque SMB-00 1700 RPM 44 RPM | HPI Valve to Loop B | 2758 psi 2937 psi | 2930 psi 2930 psi | 1.5/1 | 1/2 | Operable Inoperable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| *CV-1300 Vogt, Gate 2", 1500 lb. | Limitorque SMB-000 1725 RPM 39 RPM | HPI Pump Recirc. Isolation Valve | 2944 psi 2944 psi | See CV-1301 | 2/3.5 | 4/3.5 | Inoperable Operable | MOV identical to CV-1301 which was selected for DP testing. MOVATs tested also. |
| *CV-1301 Vogt, Gate 2", 1500 lb. | Limitorque SMB-000 1725 RPM 39 RPM | HPI Pump Recirc. Isolation Valve | 2944 psi 2944 psi | 2973 psi 2973 psi | 1.5/4 | 5/4.25 | Inoperable Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-1405 Crane-Alloyco, Gate, N9126-SP 14", 150 lb. | Limitorque SMB-00 1700 RPM 23.6 RPM | Containment Isolation Valve, P34A Suction Reactor Building Sump Recirc. | 63 psi 63 psi | Not DP Tested | 3/3 | 2/1.25 | Operable Operable | MOVATs Tested, DP Testing not feasible due to requiring water level in containment. Hydro Alternative not considered practical in lieu of MOVATs Testing. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 1
HIGH PRESSURE SAFETY INJECTION SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|---|--|---|------------------|------------------|--|---|----------------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| CV-1406 Crane-Alloyco, Gate, N9126-SP 14", 150 lb. | Limitorque SMB-00 1700 RPM 23.6 RPM | Containment Isolation Valve, P34B Suction Reactor Building Sump Recirc. | 63 psi 63 psi | Not DP Tested | 2.25/2.25 | 1.5/1 | Operable Operable | MOVATs Tested, DP Testing not feasible due to requiring water level in containment. Hydro Alternative not considered prac- tical in lieu of MOVATs Testing. |
| CV-1407 Crane-Alloyco, Gate, N9126-SP 14", 150 lb. | Limitorque SMB-2 3400 RPM 125 RPM | Borated Water Storage Tank Isolation Valve for P34A Suction | 81 psi 81 psi | Not DP Tested | 2.25/1.75 | <2/1.5 | Operable Operable | MOVATs Tested, DP Testing not feasible due to draining Safety Injection Pumps Suction lines. Hydro Alternative not considered practical in lieu of MOVATs Testing. |
| CV-1408 Crane-Alloyco, Gate, N9126-SP 14", 150 lb. | Limitorque SMB-2 3485 RPM 125 RPM | Borated Water Storage Tank Isolation Valve for P34B Suction | 81 psi 81 psi | Not DP Tested | 1.5/2 | 1.25/1 | Operable Operable | MOVATs Tested, DP Testing not feasible due to draining Safety Injection Pumps Suction lines. Hydro Alternative not considered practical in lieu of MOVATs Testing. |
| CV-1414 Anchor Darling, Gate 14-150 FW 14", 150 lb. | Rotork 16NAZ1 1800 RPM 30 RPM | Reactor Building Sump Isolation Valve for P34A Suction | 63 psi 63 psi | Not DP Tested | Damaged Torque Switch | 5/1.75 | Operable Operable | MOVATs Tested, DP Testing not feasible due to requiring water level in containment. Hydro Alternative not considered prac- tical in lieu of MOVATs Testing. |
| CV-1415 Anchor Darling, Gate 14-150 FW 14", 150 lb. | Rotork 16NAZ1 1800 RPM 30 RPM | Reactor Building Sump Isolation Valve for P34B Suction | 63 psi 63 psi | Not DP Tested | 4.5/Max. | 1.75/2 | Operable Operable | MOVATs Tested, DP Testing not feasible due to requiring water level in containment. Hydro Alternative not considered prac- tical in lieu of MOVATs Testing. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 1
EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|--|--|----------------------|----------------------|--|---|----------------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| CV-2613 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limitorque SMB-000 1900 RPM 36.5 RPM | Inlet Steam Isolation Valve for P7A From SGA | 1100 psi 1100 psi | 395 psi 95 psi | 1.5/1.5 | 2/2 | Operable Inoperable | MOVATs Tested and DP Tested at maximum attainable DP due to interaction between the trip and throttle valve. |
| CV-2617 Velan, Gate B12 2549-02TS 4", 600 lb. | Limitorque SMB-000 1700 RPM 35.0 RPM | Inlet Steam Isolation Valve for P7A From SGB | 1100 psi 1100 psi | 900 psi 900 psi | 3/3 | 3.75/3.5 | Operable Operable | MOVATs Tested and DP Tested at maximum attainable DP due to interaction between the trip and throttle valve. |
| CV-2620 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limitorque SMB-00 1900 RPM 28.1 RPM | P7A Isolation Valve for SGB | 1824 psi 1824 psi | See CV-2626 | 2/3 | 2.5/1.75 | Indeterminate Inoperable | MOV Identical to CV-2626 and 2670 which were selected for DP Testing. MOVATs Tested also. |
| CV-2626 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limitorque SMB-00 1800 RPM 25.2 RPM | P7B Isolation Valve for SGB | 1519 psi 1519 psi | 1502 psi 1502 psi | 2.25/2.25 | 1.5/1 | Operable Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-2627 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limitorque SMB-00 1900 RPM 18.7 RPM | P7A Isolation Valve for SGA | 1824 psi 1824 psi | See CV-2670 | 2/2.5 | 2/1 | Indeterminate Inoperable | MOV Identical to CV-2626 and 2670 which were selected for DP Testing. MOVATs Tested also. |
| CV-2663 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limitorque SMB-000 1900 RPM 36.5 RPM | Inlet Steam Isolation Valve for P7A From SGB | 1100 psi 1100 psi | 845 psi 845 psi | 1/2 | 2.75/2.5 | Operable Inoperable | MOVATs Tested and DP Tested at maximum attainable DP due to interaction between the trip and throttle valve. |
| CV-2667 Borg-Warner, Gate, 4", 600 lb. | Limitorque SMB-000 1700 RPM 46.6 RPM | Inlet Steam Isolation Valve for P7A From SGA | 1100 psi 1100 psi | 900 psi 900 psi | 1.5/2.5 | 2.75/2.5 | Indeterminate Operable | MOVATs Tested and DP Tested at maximum attainable DP due to interaction between the trip and throttle valve. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 1
EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|---|---|----------------------|----------------------|---|---------------------------------------|-----------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| CV-2670 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limiterque SMB-00 1800 RPM 25.2 RPM | P7B Isolation Valve for SGA | 1519 psi 1519 psi | 1502 psi 1502 psi | 2.25/2 | 2/1.25 | Operable Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-2800 Velan, Gate B15-064B-2TS 8", 150 lb. | Limiterque SMB-00 1750 RPM 60 RPM | Condensate Storage Tank Isolation Valve for P7B Suction | 100 psi 112 psi | See CV-2802 | 2/2 | 2.25/1.5 | Operable Operable | MOV Identical to CV-2802 which was selected for DP Testing. MOVATs Tested also. |
| CV-2802 Velan, Gate B15-064B-2TS 8", 150 lb. | Limiterque SMB-00 1750 RPM 60 RPM | Condensate Storage Tank Isolation Valve for P7A Suction | 100 psi 112 psi | 17 psi 17 psi | 2/2 | 3/3 | Operable Operable | MOVATs Tested and DP Tested to maximum hydrostatic head from the Condensate Storage Tank. |
| CV-2803 Velan, Gate B14-064B-2TS 6", 150 lb. | Limiterque SMB-000 1750 RPM 37.5 RPM | Service Water Loop I Isolation Valve | 103 psi 103 psi | See CV-3851 | 3/3 | 3.5/3.5 | Operable Operable | MOV Identical to CV-3851 which was selected for DP Testing. MOVATs Tested also. |
| CV-2806 Velan, Gate B14-064B-2TS 6", 150 lb. | Limiterque SMB-000 1750 RPM 37.5 RPM | Service Water Loop II Isolation Valve | 103 psi 103 psi | See CV-3851 | 2.5/2.5 | 3.25/1 | Inoperable Operable | MOV Identical to CV-3851 which was selected for DP Testing. MOVATs Tested also. |
| CV-2869 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limiterque SMB-00 1800 RPM 25.2 RPM | Test Isolation Valve for P7B Discharge | 1519 psi 1519 psi | 1490 psi 1490 psi | 1.5/1.5 | 2/1.75 | Inoperable Inoperable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-2870 Anchor Darling, Gate 4-900-FW 4", 900 lb. | Limiterque SMB-00 1900 RPM 18.8 RPM | Test Isolation Valve for P7A Discharge | 1802 psi 1802 psi | See CV-2869 | 1.5/1.5 | 2/1 | Indeterminate Inoperable | MOV Identical to CV-2869 which was selected for DP Test. MOVATs Tested also. |

MOV DATA SUMMARY

ARKANSAS NUCLEAR ONE - UNIT 1

EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|---|---|--|--------------------|------------------|---|---------------------------------------|----------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| CV-3640 Fisher, Butterfly 9123 18", 150 lb. | Limiterque SMB-000 1700 RPM 0.5 RPM | Service Water Crossover Throttle Valve | 103 psi 103 psi | See CV-3641 | 4/4 | 2/<2 | Inoperable Operable | MOV Identical to CV-3641 and 3645 which were selected for DP Testing. MOVATs Tested also. |
| CV-3641 Fisher, Butterfly 9123 18", 150 lb. | Limiterque SMB-000 1700 RPM 0.5 RPM | Service Water Loop II Throttle Valve | 103 psi 103 psi | 48 psi 49 psi | 4/1.5 | 1.5/<2 | Inoperable Inoperable | MOVATs Tested and DP Tested at maximum attainable DP due to potential hammering affects caused at Design DP in a partially voided system. |
| CV-3642 Fisher, Butterfly 9123 18", 150 lb. | Limiterque SMB-000 1700 RPM 0.5 RPM | Service Water Crossover Throttle Valve | 103 psi 103 psi | See CV-3641 | 3.5/2.5 | <2/2 | Inoperable Inoperable | MOV Identical to CV-3641 and 3645 which were selected for DP Testing. MOVATs Tested also. |
| CV-3644 Fisher, Butterfly 9123 18", 150 lb. | Limiterque SMB-000 1700 RPM 0.5 RPM | Service Water Crossover Throttle Valve, Throttle Valve From P4A to Auxiliary Cooling | 103 psi 103 psi | See CV-3645 | 2.75/3 | 2/2 | Inoperable Inoperable | MOV Identical to CV-3641 and 3645 which were selected for DP Testing. MOVATs Tested also. |
| CV-3645 Fisher, Butterfly 9123 18", 150 lb. | Limiterque SMB-000 1700 RPM 0.5 RPM | Service Water Loop I Throttle Valve | 103 psi 103 psi | 58 psi 68 psi | 4/2.5 | 2/<2 | Operable Inoperable | MOVATs Tested and DP Tested at maximum attainable DP due to potential hammering affects caused at Design DP in a partially voided system. |
| CV-3646 Fisher, Butterfly 9123 18", 150 lb. | Limiterque SMB-000 1700 RPM 0.5 RPM | Service Water Crossover Throttle Valve | 103 psi 103 psi | See CV-3645 | 3/3 | 2/2 | Inoperable Inoperable | MOV Identical to CV-3641 and 3645 which were selected for DP Testing. MOVATs Tested also. |

MOV DATA SUMMARY
 ARKANSAS NUCLEAR ONE - UNIT 1
 EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|--|---|--------------------|------------------|--|---|----------------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| *CV-3850 Westinghouse, Gate 6-150 # Gate 6", 150 lb. | Limiterque SMB-00 3400 RPM 148 RPM | Service Water Loop I Isolation Valve | 103 psi 103 psi | 92 psi 92 psi | <1/1 | 1.5/1.25 | Indeterminate Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| CV-3851 Velan, Gate B14-0648-2T 6", 150 lb. | Limiterque SMB-000 1750 RPM 37.5 RPM | Service Water Loop II Isolation Valve | 103 psi 103 psi | 90 psi 90 psi | 2/2.5 | <3/2.5 | Operable Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 2
HIGH PRESSURE SAFETY INJECTION SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|--|------------------------|----------------------|----------------------|--|---|----------------------------------|--|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-5015-1 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 1RCP-A | 1510 psi 1510 psi | See 2CV-5035 | 1/2 | >2/1 | Operable Operable | MOV Identical to 2CV-5035-1 which was selected for DP Testing. MOVATs Tested also. |
| 2CV-5016-2 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 2RCP-A | 1510 psi 1510 psi | See 2CV-5035 | 2/1.5 | 2/1.75 | Operable Operable | MOV Identical to 2CV-5035-1 which was selected for DP Testing. MOVATs Tested also. |
| 2CV-5035-1 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 1RCP-B | 1510 psi 1510 psi | 1470 psi 1470 psi | 2/2 | 1.75/1.5 | Operable Operable | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| 2CV-5036-2 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 2RCP-B | 1510 psi 1510 psi | 1459 psi 1459 psi | 1.25/2 | 1.25/1.5 | Operable Indeterminate | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| 2CV-5055-1 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 1RCP-C | 1510 psi 1510 psi | See 2CV-5035 | 1.5/1.75 | 2.25/1.25 | Operable Operable | MOV Identical to 2CV-5035-1 which was selected for DP Testing. MOVATs Tested also. |
| 2CV-5056-2 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 2RCP-C | 1510 psi 1510 psi | See 2CV-5036 | 2/1.75 | <2/>1 | Operable Operable | MOV Identical to 2CV-5036-2 which was selected for DP Testing. MOVATs Tested also. |
| 2CV-5075-1 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 1RCP-D | 1510 psi 1510 psi | See 2CV-5036 | 2/2 | >2/<2 | Operable Operable | MOV Identical to 2CV-5036-2 which was selected for DP Testing. MOVATs Tested also. |
| 2CV-5076-2 Target Rock, Globe, 6150 2", 1500 lb. | Limiterque SMB-00 1700 RPM 39.0 RPM | HPSI Header, 2RCP-D | 1510 psi 1510 psi | See 2CV-5036 | 1/2 | 2/<1.5 | Operable Operable | MOV Identical to 2CV-5036-2 which was selected for DP Testing. MOVATs Tested also. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 2
HIGH PRESSURE SAFETY INJECTION SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|---|--|----------------------|----------------------|---|---------------------------------------|-----------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-5101-1 Copes-Vulcan, Globe, DWG. E-175798 2", 1500 lb. | EIM EB-00 1800 RPM 18.0 RPM | Train A HPSI Injection Isolation | 1510 psi 1510 psi | 1470 psi 1470 psi | 4/4 | 3/2.6 | Operable Indeterminate | DP Tested within 10% of Design Basis DP and MOVATs Tested. |
| 2CV-5102-2 Copes-Vulcan, Globe, DWG. E-175798 2", 1500 lb. | EIM EB-00 1800 RPM 18.0 RPM | Train B HPSI Injection Isolation | 1510 psi 1510 psi | 1251 psi 1251 psi | 4/3 | 4/2.5 | Operable Indeterminate | MOVATs Tested and DP Tested at maximum attainable DP due to conditions at time of test. MOV Identical to 2CV-5101-1. |
| 2CV-5103-1 Weston Hydraulics, Gate, 75470 4", 1500 lb. | Limiterque SMB-000 1700 RPM 27.0 RPM | Train A HPSI Isolation | 350 psi 350 psi | Not DP Tested | 2/2 | 2/2 | Operable Indeterminate | MOVATs Tested. Not able to establish DP around MOV without making a system modification due to a bypass around MOV. |
| 2CV-5104-2 Weston Hydraulics, Gate, 75470 4", 1500 lb. | Limiterque SMB-000 1700 RPM 27.0 RPM | Train B HPSI Isolation | 350 psi 350 psi | Not DP Tested | 2/2 | 2/2 | Inoperable Indeterminate | MOVATs Tested. Not able to establish DP around MOV without making a system modification due to a bypass around MOV. |
| 2CV-5126-1 Borg-Warner, Gate, 70440-1 2", 1500 lb. | Limiterque SMB-000 1700 RPM 39.0 RPM | HPSI 2P-89A Recirculation | 1510 psi 1510 psi | Not DP Tested | 2.5/2.5 | 2.5/1.75 | Operable Operable | MOVATs Tested. DP Testing would require placing the HPSI pump in a degraded condition beyond normal system surveillance requirements. |
| 2CV-5127-1 Borg-Warner, Gate, 70440-1 2", 1500 lb. | Limiterque SMB-000 1700 RPM 39.0 RPM | HPSI 2P-89C Recirculation | 1510 psi 1510 psi | Not DP Tested | 2/2.5 | 2/1 | Operable Operable | MOVATs Tested. DP Testing would require placing the HPSI pump in a degraded condition beyond normal system surveillance requirements. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 2
HIGH PRESSURE SAFETY INJECTION SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|---|---|----------------------|------------------|---|---------------------------------------|----------------------------|--|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-5128-1 Borg-Warner Gate, 70440-1 2", 1500 lb. | Limiterorque SMB-000 1700 RPM 39.0 RPM | HPSI 2P-89B Recirculation | 1510 psi 1510 psi | Not DP Tested | 1/2 | 1.5/1 | Indeterminate Operable | MOVATs Tested. DP Testing would require placing the HPSI pump in a degraded condition beyond normal system surveillance requirements. |
| 2CV-5628-2 Anchor Darling, Gate 2556-3 4", 900 lb. | Limiterorque SMB-00 3400 RPM 25.0 RPM | HPSI Pumps Recirculation Isolation Valve | 1510 psi 1510 psi | Not DP Tested | 1.5/1.5 | 2/1 | Operable Operable | MOVATs Tested. DP Testing would require placing the HPSI pump in a degraded condition beyond normal system surveillance requirements. |
| 2CV-5630-1 Crane-Alloyco, Gate N9126-EMO-SP 20", 150 lb. | Rotork 40A 1800 RPM 45.0 RPM | Refueling Water Tank Outlet to Train A | 36 psi 36 psi | Not DP Tested | 1/MIN | 1.5/MIN | Operable Operable | MOVATs Tested. DP Testing would require draining portions of the system which would affect HPSI pump suction. Hydro alternative not considered practical in lieu of MOVATs Testing. |
| 2CV-5631-2 Crane-Alloyco, Gate N9126-EMO-SP 20", 150 lb. | Rotork 40A 1800 RPM 45.0 RPM | Refueling Water Tank Outlet to Train B | 36 psi 36 psi | Not DP Tested | 2/2 | 1.75/MIN | Operable Operable | MOVATs Tested. DP Testing would require draining portions of the system which would affect HPSI pump suction. Hydro alternative not considered practical in lieu of MOVATs Testing. |
| 2CV-5647-1 Crane-Alloyco, Gate N9126-EMO-SP 24", 150 lb. | Rotork 70NA1 3600 RPM 89.0 RPM | Containment Sump Recirculation to Train A | 65 psi 65 psi | Not DP Tested | 5/2 | 4.75/1.5 | Operable Operable | MOVATs Tested. DP Testing is not feasible due to a water level in containment would be required to establish DP. Hydro alternative not considered practical in lieu of MOVATs Testing. |
| 2CV-5648-2 Crane-Alloyco, Gate N9126-EMO-SP 24", 150 lb. | Rotork 70NA1 3600 RPM 89.0 RPM | Containment Sump Recirculation to Train B | 65 psi 65 psi | Not DP Tested | 5/3 | 4.25/0.75 | Operable Operable | MOVATs Tested. DP Testing is not feasible due to a water level in containment would be required to establish DP. Hydro alternative not considered practical in lieu of MOVATs Testing. |

MOV DATA SUMMARY

ARKANSAS NUCLEAR ONE - UNIT 2

HIGH PRESSURE SAFETY INJECTION SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|--|---|--------------------|------------------|--|---|----------------------------------|---|
| Component ID Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-5649-1 Crane-Alloyco, Gate N9126-EMO-SP 24", 150 lb. | Rotork 70NA2 3600 RPM 90.0 RPM | Containment Sump Recirculation to Train A | 65 psi 65 psi | Not DP Tested | 1.5/1 | 5.25/4 | Operable Operable | MOVATs Tested. DP Testing is not feasible due to a water level in containment would be required to establish DP. Hydro alternative not considered practical in lieu of MOVATs Testing. |
| 2CV-5650-2 Crane-Alloyco, Gate N9126-EMO-SP 24", 150 lb. | Rotork 70NA2 3600 RPM 90.0 RPM | Containment Sump Recirculation to Train B | 65 psi 65 psi | Not DP Tested | MAX/MIN | 4.5/3 | Operable Inoperable | MOVATs Tested. DP Testing is not feasible due to a water level in containment would be required to establish DP. Hydro alternative not considered practical in lieu of MOVATs Testing. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 2
EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|--|--|----------------------|----------------------|--|---|----------------------------------|--|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-0340-2 Anchor Darling, Gate 2550-3 4", 600 lb. | Limiterque SMB-00 1900 RPM 25.00 RPM | EFW Turbine Steam Admission Valve | 1195 psi 1195 psi | 360 psi 360 psi | 1.5/1.5 | 3/3 | Operable Inoperable | MOVATs Tested and DP Tested to maximum attainable DP due to interactions between the Trip and Throttle Valve. |
| 2CV-0711-2 Anchor Darling, Gate 2551-3 6", 150 lb. | Limiterque SMB-000 1900 RPM 25.0 RPM | EFW 2P-7A Service Water System Isolation | 152 psi 152 psi | 99.4 psi 99.4 psi | 2.5/2.5 | 4/4 | Operable Inoperable | MOV Identical to 2CV-0716-1 which was selected for DP Testing. MOVATs Tested also. |
| 2CV-0716-1 Anchor Darling, Gate 2551-3 6", 150 lb. | Limiterque SMB-000 1700 RPM 25.0 RPM | EFW 2P-7B Service Water System Isolation | 152 psi 152 psi | 99.4 psi 99.4 psi | 2/2.5 | 3.5/1.5 | Operable Inoperable | MOVATs Tested and DP Tested to maximum DP attainable due to Service Water System Condition during shutdown. |
| 2CV-0789-1 Anchor Darling, Gate 2552-3 8", 150 lb. | Limiterque SMB-00 1700 RPM 24.0 RPM | EFW 2P-7B Supply Cross Connect | 188 psi 188 psi | Not DP Tested | 2/2 | <2/1 | Operable Operable | MOVATs Tested. DP Testing would require violating NPSH of EFW pump to establish DP. HYDRO alternative not considered practical in lieu of MOVATs Testing. |
| 2CV-0795-2 Anchor Darling, Gate 2552-3 8", 150 lb. | Limiterque SMB-00 1900 RPM 25.0 RPM | EFW 2P-7A Supply Cross Connect | 188 psi 188 psi | Not DP Tested | 1.5/1.5 | 1.75/1.5 | Operable Inoperable | MOVATs Tested. DP Testing would require violating NPSH of EFW pump to establish DP. HYDRO alternative not considered practical in lieu of MOVATs Testing. |
| 2CV-1000-1 Anchor Darling, Gate 2557-3 4", 600 lb. | Limiterque SMB-00 1700 RPM 29.0 RPM | Main Steam to EFW Pump Isolation Valve | 1195 psi 1195 psi | 1027 psi 1027 psi | 2/2 | 1.5/1.25 | Operable Operable | MOVATs Tested and DP Tested to maximum attainable DP due to interactions between the Trip and Throttle Valve. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 2
EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|---|---|--|----------------------|----------------------|---|---------------------------------------|----------------------------|--|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-1025-1 Copes-Vulcan, Globe E-169461 4", 900 lb. | Limitorque SMB-000 1700 RPM 17.0 RPM | EFW 2P-7B Discharge to Steam Generator A | 1565 psi 1565 psi | 1400 psi 1400 psi | 1/2 | 4/3 | Operable Operable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1026-2 Anchor Darling, Gate 2554-3 4", 900 lb. | Limitorque SMB-00 1900 RPM 26.0 RPM | EFW 2P-7A Discharge to Steam Generator A | 1565 psi 1400 psi | 1400 psi 1400 psi | 2.75/2.5 | 2.25/2.25 | Operable Operable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1036-2 Anchor Darling, Gate W8321823 4", 900 lb. | Limitorque SMB-00 1700 RPM 60.0 RPM | EFW 2P-7B Discharge to Steam Generator B | 1565 psi 1565 psi | 1400 psi 1400 psi | 1/1 | 2/2 | Operable Inoperable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1037-1 Anchor Darling, Gate W8321824 4", 900 lb. | Limitorque SMB-00 1900 RPM 67.0 RPM | EFW 2P-7A Discharge to Steam Generator A | 1565 psi 1565 psi | 1400 psi 1400 psi | 1.5/1.5 | 2.5/2 | Operable Operable | DP Tested within 10% of Design Based DP and MOVATs Tested. |
| 2CV-1038-2 Anchor Darling, Gate W8321823 4", 900 lb. | Limitorque SMB-00 1700 RPM 60.0 RPM | EFW 2P-7B Discharge to Steam Generator A | 1565 psi 1565 psi | 1400 psi 1400 psi | 1.5/1.5 | 2/2 | Operable Operable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1039-1 Anchor Darling, Gate W8321824 4", 900 lb. | Limitorque SMB-00 1900 RPM 67.0 RPM | EFW 2P-7A Discharge to Steam Generator B | 1565 psi 1565 psi | 1400 psi 1400 psi | 2.5/1.5 | 2.75/2.25 | Operable Operable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |

MOV DATA SUMMARY
ARKANSAS NUCLEAR ONE - UNIT 2
EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|---|--|----------------------|----------------------|---|---------------------------------------|-----------------------------|---|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-1050-2 Anchor Darling, Gate 2557-3 4", 600 lb. | Limiterque SMB-00 1700 RPM 29.6 RPM | Main Steam to EFW Pump Isolation Valve | 1195 psi 1195 psi | 1040 psi 1040 psi | 1.5/1.5 | 1.75/1.5 | Operable Operable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1075-1 Copes-Vulcan, Globe E-169461 4", 900 lb. | Limiterque SMB-000 1700 RPM 17.0 RPM | EFW 2P-7B Discharge to Steam Generator B | 1565 psi 1565 psi | 1400 psi 1400 psi | 2/1 | 3/3 | Operable Inoperable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1076-2 Anchor Darling, Gate 2554-3 4", 900 lb. | Limiterque SMB-00 1900 RPM 26.0 RPM | EFW 2P-7A Discharge to Steam Generator B | 1565 psi 1400 psi | 1400 psi 1400 psi | 2.5/2 | 2.25/2.25 | Operable Operable | DP Tested within 10% of Design Bases DP and MOVATs Tested. |
| 2CV-1418-1 Clow Corp., Butterfly 20" Tricentric 20", 150 lb. | Limiterque SMB-000 1700 RPM 50.0 RPM | Service Water Pumps Cross Connect | 152 psi 152 psi | Not DP Tested | 1.5/2 | 2/2 | Operable Operable | MOVATs Tested. DP Testing would involve placing the system in a condition that would impact Reactor Shutdown Cooling Require- ments. Thus MOVATs Testing was utilized in lieu of DP Testing. |
| 2CV-1419-1 Clow Corp., Butterfly 20" Tricentric 20", 150 lb. | Limiterque SMB-000 1700 RPM 50.0 RPM | Service Water Pumps Cross Connect | 152 psi 152 psi | Not DP Tested | 2/1.5 | 2.25/1.75 | Operable Inoperable | MOVATs Tested. DP Testing would involve placing the system in a condition that would impact Reactor Shutdown Cooling Require- ments. Thus MOVATs Testing was utilized in lieu of DP Testing. |
| 2CV-1421-2 Clow Corp., Butterfly 20" Tricentric 20", 150 lb. | Limiterque SMB-000 1700 RPM 50.0 RPM | Service Water Pumps Cross Connect | 152 psi 152 psi | Not DP Tested | 1.5/1.5 | 2/2.25 | Indeterminate Inoperable | MOVATs Tested. DP Testing would involve placing the system in a condition that would impact Reactor Shutdown Cooling Require- ments. Thus MOVATs Testing was utilized in lieu of DP Testing. |

MOV DATA SUMMARY

ARKANSAS NUCLEAR ONE - UNIT 2

EMERGENCY FEEDWATER SYSTEM

| VALVE | VALVE OPERATOR | VALVE FUNCTION | DESIGN BASIS DP | TEST DP | SWITCH SETTINGS PRIOR TO ADJUSTMENT (TORQUE SWITCH) | FINAL SWITCH SETTINGS (TORQUE SWITCH) | AS FOUND VALVE OPERABILITY | TEST METHOD DESCRIPTION/ JUSTIFICATION |
|--|--|---|--------------------|------------------|--|---|----------------------------------|--|
| Component ID, Manufacturer, Type, Model, Size, Rating | Manufacturer Model, Motor RPM, Output Speed (RPM) | | Open Close | Open Close | Open/Close | Open/Close | Open Close | |
| 2CV-1422-2 Clow Corp., Butterfly 20" Tricentric 20", 150 lb. | Limitorque SMB-000 1700 RPM 50.0 RPM | Service Water Pumps Cross Connect | 152 psi 152 psi | Not DP Tested | 1.5/1.5 | 2/2 | Indeterminate Inoperable | MOVATs Testing. DP Testing would involve placing the system in a condition that would impact Reactor Shutdown Cooling Require- ments. Thus MOVATs Testing was utilized in lieu of DP Testing. |