Duquesne Light Company Beaver Valley Power Station
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GEORGE S. THOMAS
Division Vice President
Nuclear Services
Nuclear Power Division

April 29, 1994

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Response to Generic Letter 89-10, Supplement 6

References: 1. Duquesne Light Company letter to the NRC, "Generic Letter 89-10, Request for Schedule Extension," dated August 24, 1993

2. Duquesne Light Company letter to the NRC, Response to Generic Letter 89-10, "Safety Related Motor-Operated Valve Testing and Surveillance," dated December 28, 1989

3. Generic Letter 89-10, Supplement 6, "Information on Schedule and Grouping, and Staff Responses to Additional Public Questions," dated March 8, 1994

In Reference 1, Duquesne Light Company (DLC) submitted information for the Beaver Valley Power Station (BVPS) Unit No. 2, Motor-Operated Valve (MOV) Program in support of proposed changes to the original schedule commitments provided in Reference 2. This letter provides updated and additional information for BVPS Unit No. 2 in accordance with Supplement 6 of Generic Letter (GL) 89-10, (Reference 3).

Attachment 1, Table 1, provides the completion status of the BVPS Unit No. 2 GL 89-10 Program as requested in Supplement 6. Table 1 indicates that the verification of MOV capability by in situ testing under dynamic system conditions and any needed corrective actions will be completed during the BVPS Unit No. 2 Fifth Refueling Outage currently scheduled to begin March 24, 1995. This is an improved schedule over the one provided by Reference 1 and reflects increased MOV outage testing efforts.

Attachment 2, Table 2, lists the MOVs determined to not be practicable to test in situ under dynamic system conditions.

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Attachment 3 provides valve-specific information for the evaluation of GL 89-10 MOVs that will be dynamically tested during the Fifth Refueling Outage.

The MOV prioritization criteria developed at the beginning of the BVPS program have been integrated with the results of the IPE/PRA for BVPS Unit No. 2. The integration provides additional assurance that highly safety significant in situ testable MOVs in the GL 89-10 program will be dynamically tested on a priority basis. The MOVs included in this category are the IE Bulletin 85-03 MOVs and the high risk MOVs as determined by their contribution to the core damage frequency. All the in situ testable IE Bulletin 85-03 MOVs and high risk MOVs having a risk importance based on a core damage frequency cutoff of $1x10^{-6}$ have been dynamically tested. As a conservative measure, one half of the in situ testable high risk MOVs having a risk importance based on a core damage frequency of between $1x10^{-6}$ and $1x10^{-7}$ were dynamically tested under the grouping approach. The remaining MOVs in these groups will be dynamically tested during the BVPS Unit No. 2 Fifth Refueling Outage.

All of the BVPS Unit No. 2 MOVs in the GL 89-10 Program will be set up using the best available data by the current commitment date. Dynamic test data available for MOV(s) within a group of valves (similar valves with similar service) was applied to the MOV(s) in the group which will be dynamically tested according to the extended schedule. The MOVs which have not been dynamically tested or evaluated by comparison to grouped valves have been justified by validation of BVPS methodology which establishes the target settings. The steps that BVPS follows to validate the methodology are summarized below:

- Compile BVPS dynamic test data into a database;
- Review the test data for measured valve factors, stem friction, load sensitive behavior, running load, etc.;
- Perform a qualitative comparison of the factors, considering the range of measured values and the effects on target thrust or torque.

From the reviews that DLC has conducted, we conclude that the static target settings that have been applied to the BVPS MOVs provide a high confidence of reliable MOV performance under design basis conditions for GL 89-10 valves. This judgment is based on the review of the available test data within the context of our design basis flows and pressures which are conservatively derived. DLC will continue to accumulate dynamic test data throughout completion of baseline testing and revise our methodology as appropriate.

Other sources of MOV dynamic test data include the work performed by the Electric Power Research Institute (EPRI) (i.e., the Performance Prediction Program), data from a limited number of MOV tests funded by EPRI at operating plants, and testing performed by valve vendors to develop specific design valve factors. (Where vendor valve factors are more conservative than standard assumptions, they have been applied to target setting calculations.) DLC has been active in the MOV Users Group and have evaluated the findings in EPRI's work which would be applicable to BVPS. However, when considering a basis to validate our methodology, DLC believes that the BVPS dynamic test data is more applicable because the BVPS MOVs have been operated, maintained and tested to a more common baseline than valves tested by EPRI in a non-plant environment.

In conclusion, the BVPS switch settings for any individual MOV are confirmed by using one of the following three methods:

(1) Direct evaluation of data obtained by testing the MOV under dynamic system conditions;

(2) Comparison and application of MOV test data that was obtained at BVPS by testing similar valves with similar service;

(3) Application of switch settings that were calculated by using conservative assumptions.

The best available data and information is reviewed and applied within the above methodology where it is determined to be applicable and appropriate.

Should you have any questions regarding this submittal, please contact Ed Coholich at (412) 393-5224.

Sincerely,

George S. Thomas

Attachments

cc: Mr. L. W. Rossbach, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. G. E. Edison, Project Manager

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF BEAVER)

Subject: Beaver Valley Power Station, Unit No. 2
BV-2 Docket No. 50-412, License No. NPF-73
Response to Generic Letter 89-10, Supplement 6

Before me, the undersigned notary public, in and for the County and Commonwealth aforesaid, this day personally appeared George S. Thomas, to me known, who being duly sworn according to law, deposes and says that he is Division Vice President, Nuclear Services of the Nuclear Power Division, Duquesne Light Company, he is duly authorized to execute and file the foregoing submittal on behalf of said Company, and the statements set forth in the submittal are true and correct to the best of his knowledge, information and belief.

George S. Thomas

Subscribed and sworn to before me
on this 29th day of April, 1994

Tracey A. Baczek
Notary Public

Notarial Seal
Tracey A. Baczek, Notary Public
Shippingport Boro, Beaver County
My Commission Expires Aug. 16, 1997
Member, Pennsylvania Association of Notaries

ATTACHMENT 1

TABLE 1

Status of the BVPS Unit No. 2 GL 89-10 Program

The following is the MOV switch setting status of the BVPS Unit No. 2 GL 89-10 Program as of the current commitment date of June 28, 1994:

• Number of MOVs in the BVPS Unit No. 2 GL 89-10 Program Scope.	127
• Number of MOVs whose switches have been set under static system conditions using the best available data.	127
• Number of MOVs determined to not be practicable to test in situ under dynamic system conditions.	48
• Number of MOVs determined to be practicable to test in situ under dynamic system conditions.	79
• Number of MOVs whose capability has been verified by in situ testing under dynamic system conditions.	42
• Number of MOVs whose capability will be verified by in situ testing under dynamic system conditions after the current commitment date. (This testing and any needed corrective actions will be completed during the next scheduled BVPS Unit No. 2 refueling outage.)	37

ATTACHMENT 2

TABLE 2

Beaver Valley Power Station Unit No. 2
GL 89-10 Motor Operated Valves
Determined to not be Practicable to be Dynamically Tested In Situ

Mark No.	Description
2CHS-LCV115B	Charging Pump Suction from RWST
2CHS-LCV115C	Charging Pump Suction from Volume Control Tank
2CHS-MOV115D	Charging Pump Suction from RWST
2CHS-MOV115E	Charging Pump Suction from Volume Control Tank
2CHS-MOV303A	Reactor Coolant Pump 21A Seal Water Leakoff Valve
2CHS-MOV303B	Reactor Coolant Pump 21B Seal Water Leakoff Valve
2CHS-MOV303C	Reactor Coolant Pump 21C Seal Water Leakoff Valve
2CHS-MOV308A	RCP 21A Seal Water Injection Isolation
2CHS-MOV308B	RCP 21B Seal Water Injection Isolation
2CHS-MOV308C	RCP 21C Seal Water Injection Isolation
2CHS-MOV378	Reactor Coolant Pumps Seal Water Return Isolation
2CHS-MOV381	Seal Water Return Containment Isolation Valve
2CHS-MOV8130A	Charging Pump Suction Isolation Valve
2CHS-MOV8130B	Charging Pump Suction Isolation Valve
2CHS-MOV8131A	Charging Pump Suction Isolation Valve
2CHS-MOV8131B	Charging Pump Suction Isolation Valve
2CHS-MOV8132A	Charging Pump Discharge Isolation Valve
2CHS-MOV8132B	Charging Pump Discharge Isolation Valve
2CHS-MOV8133A	Charging Pump Discharge Isolation Valve
2CHS-MOV8133B	Charging Pump Discharge Isolation Valve
2HCS-MOV116	Hydrogen Recombiner 21A Return to Containment Isol.
2HCS-MOV117	Hydrogen Recombiner 21B Return to Containment Isol.
2HVR-MOD23A	Containment Purge Exhaust Isolation Damper
2HVR-MOD23B	Containment Purge Exhaust Isolation Damper
2HVR-MOD25A	Containment Purge Supply Isolation Damper
2HVR-MOD25B	Containment Purge Supply Isolation Damper
2QSS-MOV101A	Quench Spray Pump 21A Discharge Isolation
2QSS-MOV101B	Quench Spray Pump 21B Discharge Isolation
2QSS-MOV102A	QSS Chem Add Tank to Chem Injection Pump 24A
2QSS-MOV102B	QSS Chem Add Tank to Chem Injection Pump 24B
2RCS-MOV535	PORV 2RCS-PCV455C Inlet Isolation
2RCS-MOV536	PORV 2RCS-PCV456 Inlet Isolation
2RCS-MOV537	PORV 2RCS-MOV455D Inlet Isolation
2RHS-MOV701A	Residual Heat Removal System Train-A Supply Isol.
2RHS-MOV701B	Residual Heat Removal System Train-B Supply Isol.
2RHS-MOV702A	Residual Heat Removal System Train-A Supply Isol.
2RHS-MOV702B	Residual Heat Removal System Train-B Supply Isol.
2RSS-MOV155A	Recirc Spray Pump 21A Outside Cont. Suction Isol.
2RSS-MOV155B	Recirc Spray Pump 21B Outside Cont. Suction Isol.
2RSS-MOV155C	Recirc Spray Pump 21C Outside Cont. Suction Isol.
2RSS-MOV155D	Recirc Spray Pump 21D Outside Cont. Suction Isol.
2SIS-MOV842	SI Accumulator Test Line Isolation to RWST
2SIS-MOV869A	High Head Safety Injection to Hot Leg Isolation
2SIS-MOV869B	High Head Safety Injection to Hot Leg Isolation
2SIS-MOV8809A	Low Head Safety Injection Pump 21A Suction Isolation
2SIS-MOV8809B	Low Head Safety Injection Pump 21B Suction Isolation
2SIS-MOV8811A	RSS Pump 21C Disch Crossover to LHSI 21A Discharge
2SIS-MOV8811B	RSS Pump 21D Disch Crossover to LHSI 21B Discharge

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV118**

DESCRIPTION : CONTMT INST AIR HEAT EXCHANGER INLET ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV118 is a safety class break and isolates cooling water to the non-safety related Containment Instrument Air compressors; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered low priority when ranked by the PRA. The valve is in series with and redundant to 2CCP-MOV119. It is used in a related procedure to the Emergency Operating Procedures to recover from an inadvertent Safety Injection.

VERIFIED BY:

APR 2 5 1994 Steven A Bethke
NED (for design/target values)

M Pottigrew 4/26/94
MEAD (for as-left values and margin)

MANUFACTURER : CONTROMATIC SIZE: 2.0 inch TYPE: BALL

DESIGN BASIS DIFF. PRESSURE: 115 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 115 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 17 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 327 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 307 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 17 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 324 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 304 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV119**

DESCRIPTION : CONTMT INST AIR HEAT EXCHANGER INLET ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV119 is a safety class break and isolates cooling water to the non-safety related Containment Instrument Air compressors; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered low priority when ranked by the PRA. The valve is in series with and redundant to 2CCP-MOV118. It is used in a related procedure to the Emergency Operating Procedures to recover from an inadvertent Safety Injection.

VERIFIED BY:

APR 2 5 1994 Steven A Sochlew
NED (for design/target values)

M Pethgian 4/26/94
MEAD (for as-left values and margin)

MANUFACTURER : CONTROMATIC SIZE: 2.0 inch TYPE: BALL

DESIGN BASIS DIFF. PRESSURE: 115 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 115 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 17 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 273 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **253 ft-lbs.**

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 17 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 178 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **158 ft-lbs.**

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV120**

DESCRIPTION : CONTMT INST AIR HEAT EXCHANGER OUTLET ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV120 is a safety class break and isolates cooling water from the non-safety related Containment Instrument Air compressors; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered low priority when ranked by the PRA. The valve is in line with 2CCP-MOV118 and 119. It is used in a related procedure to the Emergency Operating Procedures to recover from an inadvertent Safety Injection.

VERIFIED BY:

APR 2 5 1994 Steven A Soehlen — NED (for design/target values)

M. Pettigrew 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : CONTROMATIC SIZE: 2.0 inch TYPE: BALL

DESIGN BASIS DIFF. PRESSURE: 115 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 115 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 17 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 305 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 285 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 17 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 276 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 256 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV175-1**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV175-1 is a safety class break and isolates cooling water to non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV175-2. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Loehlein
NED (for design/target values)

M. Bettigner 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 140 psi DESIGN BASIS FLOW: 3300 GPM
DESIGN LINE PRESSURE : 140 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 217 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 33 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 300 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 116 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV175-2**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV175-2 is a safety class break and isolates cooling water to non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV175-1. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Sehlen
NED (for design/target values)

M Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 140 psi DESIGN BASIS FLOW: 3300 GPM
DESIGN LINE PRESSURE : 140 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 263 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 79 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 241 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 57 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV176-1**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV176-1 is a safety class break and isolates cooling water to non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV176-2. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Foehlem
NED (for design/target values)

M. Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 140 psi DESIGN BASIS FLOW: 3300 GPM
DESIGN LINE PRESSURE : 140 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 202 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 18 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 199 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 15 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV176-2**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV176-2 is a safety class break and isolates cooling water to non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV176-1. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Loehlein NED (for design/target values)

M. Pettigrew 4/29/94 MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 140 psi DESIGN BASIS FLOW: 3300 GPM

DESIGN LINE PRESSURE : 140 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 250 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 66 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 249 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 65 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV177-1**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV177-1 is a safety class break and isolates cooling water from non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV177-2. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Jochlew NED (for design/target values) M. Pettigrew 4/29/94 MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 135 psi DESIGN BASIS FLOW: 3300 GPM

DESIGN LINE PRESSURE : 135 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 226 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 42 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 219 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 35 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV177-2**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV177-2 is a safety class break and isolates cooling water from non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV177-1. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Soehlau
NED (for design/target values)

M. Pottigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 135 psi DESIGN BASIS FLOW: 3300 GPM

DESIGN LINE PRESSURE : 135 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 225 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 41 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 246 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 62 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV178-1**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV178-1 is a safety class break and isolates cooling water from non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV178-2. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Sobhlem
NED (for design/target values)

M. Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 135 psi DESIGN BASIS FLOW: 3300 GPM
DESIGN LINE PRESSURE : 135 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 206 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 22 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 214 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 30 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2CCP-MOV178-2**

DESCRIPTION : AUXILIARY BUILDING HEADER SC-3/NSS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2CCP-MOV178-2 is a safety class break and isolates cooling water from non-safety related equipment; it automatically closes on a Containment Isolation phase A signal or upon lo-lo level alarm in the cooling water surge tank. The valve is considered to have low risk significance. The valve is in series with and redundant to 2CCP-MOV178-1. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Soehlen
NED (for design/target values)

M. Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 135 psi DESIGN BASIS FLOW: 3300 GPM

DESIGN LINE PRESSURE : 135 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 251 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 67 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 284 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 100 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2IAC-MOV130**

DESCRIPTION : CONTAINMENT INSTRUMENT AIR ISOLATION VALVE

SAFETY SIGNIFICANCE: 2IAC-MOV130 is in the supply line which provides instrument air to containment, it is the outside containment isolation valve, and it closes on a Containment Isolation Phase A signal. The valve is considered a low priority when ranked by the PRA. The valve is in series with and redundant to inside containment isolation check valve 2IAC-22. The valve is used in the Emergency Operating Procedures to reestablish Instrument Air to the Containment after a Reactor Trip or Safety Injection.

VERIFIED BY:

APR 2 5 1994 Steven A Loehlein — NED (for design/target values)

M. Pettigrew 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : XOMOX (A&M) SIZE: 3.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 135 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 125 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 268 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **44 ft-lbs.**

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 269 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **45 ft-lbs.**

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2IAC-MOV133**

DESCRIPTION : CONTAINMENT INSTRUMENT AIR ISOLATION VALVE

SAFETY SIGNIFICANCE: 2IAC-MOV133 is in the instrument air return line from containment, it is the inside containment isolation valve, and it closes on a Containment Isolation Phase A signal. The valve is considered a low priority when ranked by the PRA. The valve is in series with and redundant to outside containment isolation valve 2IAC-MOV134. The valve is used in the Emergency Operating Procedures to reestablish Instrument Air to the Containment after a Reactor Trip or Safety Injection.

VERIFIED BY:

APR 2 5 1994 Steven A Sucklew
NED (for design/target values)

M. Pettigrew 4/26/94
MEAD (for as-left values and margin)

MANUFACTURER : XOMOX (A&M) SIZE: 4.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 60 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 45 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 453 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 16 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 474 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 37 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2IAC-MOV134**

DESCRIPTION : CONTAINMENT INSTRUMENT AIR ISOLATION VALVE

SAFETY SIGNIFICANCE: 2IAC-MOV134 is in the instrument air return line from containment, it is the outside containment isolation valve, and it closes on a Containment Isolation Phase A signal. The valve is considered a low priority when ranked by the PRA. The valve is in series with and redundant to inside containment isolation valve 2IAC-MOV133. The valve is used in the Emergency Operating Procedures to reestablish Instrument Air to the Containment after a Reactor Trip or Safety Injection.

VERIFIED BY:

APR 2 5 1994 Steven A Foehlein
NED (for design/target values)

M Pettigrew 4/26/94
MEAD (for as-left values and margin)

MANUFACTURER : XOMOX (A&M) SIZE: 4.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 60 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 45 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 510 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 73 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 499 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 62 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2RHS-MOV720A**

DESCRIPTION : RHS TO SIS RETURN LINE ISOLATION VALVE

SAFETY SIGNIFICANCE:2RHS-MOV720A is the Residual Heat Removal System (RHS) return line to the Reactor Coolant System (RCS) and is normally closed except when the RHS is in operation. This valve is interlocked with RCS transmitters which will cause the valve to automatically close on high RCS pressure. The valve is considered a low priority valve when ranked by the PRA. The valve is addressed in the Abnormal Operating Procedures associated with a Loss of Cooling Accident while the plant is in Mode 3 (with SI Accumulators isolated) or in Mode 4. Procedures instruct to isolate RHS and provide makeup through Charging and Volume Control or Safety Injection systems. This valve is also identifed in AOP's associated with a Loss of Residual Heat Removal system while in service. If the RHS system cannot be restored immediately, there are alternative methods to cooling the core until it can be returned to service.

VERIFIED BY:

APR 2 5 1994 Steven A Jackson
NED (for design/target values)

M. Pettigrew 4/26/94
MEAD (for as-left values and margin)

MANUFACTURER : WESTINGHOUSE SIZE: 10.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 455 psi DESIGN BASIS FLOW: N/A
DESIGN LINE PRESSURE : 450 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.50 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 18749 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 18749 lbs. AS-LEFT STATIC THRUST (meas.) = 41686 lbs.

MARGIN MEASURED ABOVE TARGET : 20840 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2RHS-MOV720B**

DESCRIPTION : RHS TO SIS RETURN LINE ISOLATION VALVE

SAFETY SIGNIFICANCE:2RHS-MOV720B is the Residual Heat Removal System (RHS) return line to the Reactor Coolant System (RCS) and is normally closed except when the RHS is in operation. This valve is interlocked with RCS transmitters which will cause the valve to automatically close on high RCS pressure. The valve is considered a low priority valve when ranked by the PRA. The valve is addressed in the Abnormal Operating Procedures associated with a Loss of Cooling Accident while the plant is in Mode 3 (with SI Accumulators isolated) or in Mode 4. Procedures instruct to isolate RHS and provide makeup through Charging and Volume Control or Safety Injection systems. This valve is also identifed in AOP's associated with a Loss of Residual Heat Removal system while in service. If the RHS system cannot be restored immediately, there are alternative methods to cooling the core until it can be returned to service.

VERIFIED BY:

APR 2 5 1994 Steven A Jochlem — NED (for design/target values)

M Pettigrew 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : WESTINGHOUSE SIZE: 10.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 455 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 450 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.50 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 18749 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 18749 lbs. AS-LEFT STATIC THRUST (meas.) = 30508 lbs.

MARGIN MEASURED ABOVE TARGET : 9662 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2RHS-MOV750A**

DESCRIPTION : RHS CROSS CONNECT ISOLATION VALVE

SAFETY SIGNIFICANCE:2RHS-MOV750A is located in the Residual Heat Release System (RHS) cross connect line which may return letdown flow to the Chemical and Volume Control System (CHS) for cleanup and pressure control while RHS is in operation. The position of the valve is administratively controlled and there are no automatic interlocks. The valve is considered to have low risk significance. The valve is addressed in the Abnormal Operating Procedures associated with a Loss of Cooling Accident while the plant is in Mode 3 (with SI Accumulators isolated) or in Mode 4. Procedures instruct to isolate RHS and provide makeup through Charging and Volume Control or Safety Injection systems.

VERIFIED BY:

4/29/94 Steven A Sochleen
NED (for design/target values)

M Pottinger 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : VELAN SIZE: 2.0 inch TYPE: GLOBE

DESIGN BASIS DIFF. PRESSURE: 605 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 600 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 1.10 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 2266 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 2266 lbs. AS-LEFT STATIC THRUST (meas.) = 9573 lbs.

MARGIN MEASURED ABOVE TARGET : 6745 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2RHS-MOV750B**

DESCRIPTION : RHS CROSS CONNECT ISOLATION VALVE

SAFETY SIGNIFICANCE:2RHS-MOV750B is located in the Residual Heat Release System (RHS) cross connect line which may return letdown flow to the Chemical and Volume Control System (CHS) for cleanup and pressure control while RHS is in operation. The position of the valve is administratively controlled and there are no automatic interlocks. The valve is considered to have low risk significance. The valve is addressed in the Abnormal Operating Procedures associated with a Loss of Cooling Accident while the plant is in Mode 3 (with SI Accumulators isolated) or in Mode 4. Procedures instruct to isolate RHS and provide makeup through Charging and Volume Control or Safety Injection systems.

VERIFIED BY:

4/29/94 Steven A Sochleen
NED (for design/target values)

M. Pottinger 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : VELAN SIZE: 2.0 inch TYPE: GLOBE

DESIGN BASIS DIFF. PRESSURE: 605 psi DESIGN BASIS FLOW: N/A
DESIGN LINE PRESSURE : 600 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 1.10 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 2266 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 2266 lbs. AS-LEFT STATIC THRUST (meas.) = 7318 lbs.

MARGIN MEASURED ABOVE TARGET : 4490 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2RSS-MOV154D**

DESCRIPTION : RSS PUMP MINIMUM FLOW ISOLATION VALVE

SAFETY SIGNIFICANCE: 2RSS-MOV154D is located in the minimum flow protection line for the "D" Recirculation Spray Pump. The valve automatically opens and closes based on whether a low discharge flow signal is present or not. The valve is considered high priority when ranked by the PRA. The sister valve 2RSS-MOV154C has been dynamically tested and the results applied the static setup of 2RSS-MOV154D. This valve is not identified in any Emergency or Abnormal Operating Procedures.

VERIFIED BY:

APR 2 5 1994 Steven A Sochlew NED (for design/target values)

M. Pethjes 4/26/94 MEAD (for as-left values and margin)

MANUFACTURER : ANCHOR/DARLING SIZE: 6.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 195 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 195 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.48 LOAD SENSITIVE BEHAVIOR: 0% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 2660 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 2660 lbs. AS-LEFT STATIC THRUST (meas.) = 3552 lbs.

MARGIN MEASURED ABOVE TARGET : **291 lbs.**

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SIS-MOV841**

DESCRIPTION : CHS TO RCS COLD LEG INJECTION ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SIS-MOV841 is in the High Head Safety Injection line to the Reactor Coolant System (RCS) and it is normally open during plant operation. The valve is considered low priority when ranked by the PRA. The MOV is required to be open and is normally in position to fulfill its intended function. The valve is not identified in any Emergency or Abnormal Operating Procedures.

VERIFIED BY:

APR 2 5 1994 Steven A Jecklin — NED (for design/target values)

M Pettigrew 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : WESTINGHOUSE SIZE: 3.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 2650 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 2650 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.50 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 11448 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 11448 lbs. AS-LEFT STATIC THRUST (meas.) = 13867 lbs.

MARGIN MEASURED ABOVE TARGET : 1354 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SIS-MOV8889**

DESCRIPTION : SIS PUMP DISCHARGE ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SIS-MOV8889 is in the line from the Low Head Safety Injection pumps to the Reactor Coolant System (RCS) Hot Legs. The valve is normally closed and is administratively opened per Emergency Operating Procedures which transfer from RCS Cold Leg injection to Hot Leg Injection 13 hours after Event Initiation. This valve is considered to have low risk significance. A valve within the same grouping, 2SIS-MOV8888B, has been dynamically tested and the results applied to the static setup of 2SIS-MOV8889.

VERIFIED BY:

4/29/94 Steven A Sochlem NED (for design/target values)

M. Pettigrew 4/29/94 MEAD (for as-left values and margin)

MANUFACTURER : WESTINGHOUSE SIZE: 10.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 175 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 170 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.50 LOAD SENSITIVE BEHAVIOR: 13% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 7842 lbs. AS-LEFT S. ATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 7842 lbs. AS-LEFT STATIC THRUST (meas.) = 41391 lbs.

MARGIN MEASURED ABOVE TARGET : 32647 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SIS-MOV8890B**

DESCRIPTION : SIS PUMP MINIMUM FLOW ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SIS-MOV8890B is located in the minimum flow recirculation line for the B Low Head Safety Injection Pump. The valve automatically opens and closes based on whether a low discharge flow signal is present or not. The valve is considered high priority when ranked by the PRA. The sister valve 2SIS-MOV8890A has been dynamically tested and the results applied to the static setup of 2SIS-MOV8890B. The valve is not identified in any Emergency or Abnormal Operating Procedures.

VERIFIED BY:

4/26/94 Steven A Jocklein
NED (for design/target values)

M. Bethgew 4/27/94
MEAD (for as-left values and margin)

MANUFACTURER : WESTINGHOUSE SIZE: 4.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 145 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 145 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.78 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 1796 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 1796 lbs. AS-LEFT STATIC THRUST (meas.) = 3445 lbs.

MARGIN MEASURED ABOVE TARGET : 1075 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWE-MOV116B**

DESCRIPTION : AUXILIARY SERVICE WATER PUMP DISCHARGE ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWE-MOV116B is located in the line from the Standby Service Water System (SWE) to the Service Water System (SWS). It is administratively opened when the SWE system is placed in service to supply cooling water to the SWS system. It is identified in Emergency and Abnormal Operating Procedures associated with a loss of normal Service Water. The valve is considered high priority when ranked by the PRA. The sister valve, 2SWE-MOV116A has been dynamically tested and the results applied to the static setup of 2SWE-MOV116B.

VERIFIED BY:

APR 2 5 1994 Steven A Soehlen
NED (for design/target values)

M. Pottgiesser 4/26/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 30.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 15000 GPM
DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 5714 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 8069 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **1974 ft-lbs.**

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 5714 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 8069 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **1974 ft-lbs.**

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWM-MOV562**

DESCRIPTION : CHLORINE INJECTION TO SERVICE WATER SYS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWM-MOV562 is in the chlorine injection lines to the Service Water System (SWS). It is normally closed and is administratively opened for chlorine injection. It receives a signal to automatically close upon a Safety Injection Signal (SIS) in order to isolate non-essential flow. This valve is considered to have low risk significance. This valve is in series with and redundant to valve 2SWM-MOV565. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Soehlow NED (for design/target values) M Pettigrew 4/29/94 MEAD (for as-left values and margin)

MANUFACTURER : XOMOX(TUFLINE) SIZE: 3.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 155 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 155 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 290 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 67 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 339 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 116 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWM-MOV563**

DESCRIPTION : CHLORINE INJECTION TO SERVICE WATER SYS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWM-MOV563 is in the chlorine injection lines to the Service Water System (SWS). It is normally closed and is administratively opened for chlorine injection. It receives a signal to automatically close upon a Safety Injection Signal (SIS) in order to isolate non-essential flow. This valve is considered to have low risk significance. This valve is in series with and redundant to valve 2SWM-MOV564. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Fehlen
NED (for design/target values)

M. Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : XOMOX(TUFLINE) SIZE: 3.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 155 psi DESIGN BASIS FLOW: N/A
DESIGN LINE PRESSURE : 155 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 308 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 85 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 322 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 99 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWM-MOV564**

DESCRIPTION : CHLORINE INJECTION TO SETVICE WATER SYS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWM-MOV564 is in the chlorine injection lines to the Service Water System (SWS). It is normally closed and is administratively opened for chlorine injection. It receives a signal to automatically close upon a Safety Injection Signal (SIS) in order to isolate non-essential flow. This valve is considered to have low risk significance. This valve is in series with and redundant to valve 2SWM-MOV563. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Sehlen
NED (for design/target values)

M Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : XOMOX(TUFLINE) SIZE: 3.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 155 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 155 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 342 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **119** ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 358 ft-lbs.

MARGIN MEASURED ABOVE TARGET : **135** ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWM-MOV565**

DESCRIPTION : CHOLRINE INJECTION TO SERVICE WATER SYS ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWM-MOV565 is in the chlorine injection lines to the Service Water System (SWS). It is normally closed and is administratively opened for chlorine injection. It receives a signal to automatically close upon a Safety Injection Signal (SIS) in order to isolate non-essential flow. This valve is considered to have low risk significance. This valve is in series with and redundant to valve 2SWM-MOV562. It is used in the EOP's to recover from an inadvertent Safety Injection.

VERIFIED BY:

4/29/94 Steven A Soehlen NED (for design/target values) M Pettigrew 4/29/94 MEAD (for as-left values and margin)

MANUFACTURER : XOMOX(TUFLINE) SIZE: 3.0 inch TYPE: PLUG

DESIGN BASIS DIFF. PRESSURE: 155 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 155 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 386 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 163 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 465 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 242 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV102B**

DESCRIPTION : SWS PUMP DISCHARGE ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV102B automatically opens and closes upon starting and stopping of the "B" Service Water Pump. The valve is considered high priority when ranked by the PRA. The sister valve 2SWS-MOV102A has been dynamically tested and the results applied to the static setup of 2SWS-MOV102B. The valve is identified in Emergency Operating related procedures which start up a Service Water Pump when required.

VERIFIED BY:

APR 2 5 1994 Steven A Jackson — NED (for design/target values)

M. Pettigrew 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 30.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 145 psi DESIGN BASIS FLOW: 15000 GPM

DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7061 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 1004 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7061 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 1004 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV102C1**

DESCRIPTION : SWS PUMP DISCHARGE ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV102C1 automatically opens and closes upon starting and stopping of the "C" Service Water Pump when the pump is aligned to the "A" SWS header and train. Because of this valve's redundancy to the "A" SWS train, the MOV is not considered high priority. The sister valve 2SWS-MOV102A has been dynamically tested and the results applied to the static setup of 2SWS-MOV102C1. The valve is identified in Emergency Operating related procedures which start up a Service Water Pump when required.

VERIFIED BY:

4/29/94 Steven A Soehlein — NED (for design/target values)

M Pettigrew 4/29/94 — MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 30.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 145 psi DESIGN BASIS FLOW: 15000 GPM

DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7960 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 1903 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7960 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 1903 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV102C2**

DESCRIPTION : SWS PUMP DISCHARGE ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV102C2 automatically opens and closes upon starting and stopping of the "C" Service Water Pump when the pump is aligned to the "B" SWS header and train. Because of this valve's redundancy to the "B" SWS train, the MOV is not considered high priority. The sister valve 2SWS-MOV102A has been dynamically tested and the results applied to the static setup of 2SWS-MOV102C2. The valve is identified in Emergency Operating related procedures which start up a Service Water Pump when required.

VERIFIED BY:

4/29/94 Steven A Jochlein
NED (for design/target values)

M Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : HENRY PRATT SIZE: 30.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 145 psi DESIGN BASIS FLOW: 15000 GPM
DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7391 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 1334 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7391 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 1334 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV105A**

DESCRIPTION : SWS DISCHARGE FROM RSS HEAT EXCHANGER A ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV105A is in the Service Water (SWS) outlet line from the "A" Recirculation Spray Heat Exchanger and it is normally open during plant operation. The valve is considered low priority when ranked by the PRA. The MOV is required to be open and is normally in position to fulfill its intended function. The valve is identified in Emergency Operating Procedure for Loss of All AC Power and is verified to be open.

VERIFIED BY:

APR 2 5 1994 Steven A Loehlein — NED (for design/target values)

M Pethgien 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : WALWORTH SIZE: 16.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 130 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 130 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.40 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = 11289 lbs.

MARGIN MEASURED ABOVE TARGET : 2236 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV105B**

DESCRIPTION : SWS DISCHARGE FROM RSS HEAT EXCHANGER B ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV105B is in the Service Water (SWS) outlet line from the "B" Recirculation Spray Heat Exchanger and it is normally open during plant operation. The valve is considered low priority when ranked by the PRA. The MOV is required to be open and is normally in position to fulfill its intended function. The valve is identified in Emergency Operating Procedure for Loss of All AC Power and is verified to be open.

VERIFIED BY:

APR 2 5 1994 Steven A Jochlein NED (for design/target values) M. Pettigrew 4/26/94 MEAD (for as-left values and margin)

MANUFACTURER : WALWORTH SIZE: 16.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 130 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 130 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.40 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = 9286 lbs.

MARGIN MEASURED ABOVE TARGET : 233 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV105C**

DESCRIPTION : SWS DISCHARGE FROM RSS HEAT EXCHANGER C ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV105C is in the Service Water (SWS) outlet line from the "C" Recirculation Spray Heat Exchanger and it is normally open during plant operation. The valve is considered low priority when ranked by the PRA. The MOV is required to be open and is normally in position to fulfill its intended function. The valve is identified in Emergency Operating Procedure for Loss of All AC Power and is verified to be open.

VERIFIED BY:

APR 2 5 1994 Steven A Sehlen — NED (for design/target values)

M. Pettyjohn 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : WALWORTH SIZE: 16.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 130 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 130 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.40 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = 9601 lbs.

MARGIN MEASURED ABOVE TARGET : 519 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV105D**

DESCRIPTION : SWS DISCHARGE FROM RSS HEAT EXCHANGER D ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV105D is in the Service Water (SWS) outlet line from the "D" Recirculation Spray Heat Exchanger and it is normally open during plant operation. The valve is considered low priority when ranked by the PRA. The MOV is required to be open and is normally in position to fulfill its intended function. The valve is identified in Emergency Operating Procedure for Loss of All AC Power and is verified to be open.

VERIFIED BY:

APR 2 5 1994 Steven A Bohlen — NED (for design/target values)

M. Pethgiar 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : WALWORTH SIZE: 16.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 130 psi DESIGN BASIS FLOW: N/A

DESIGN LINE PRESSURE : 130 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.40 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [X] TEST OF SISTER VALVE [ ]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = 9826 lbs.

MARGIN MEASURED ABOVE TARGET : 773 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV107C**

DESCRIPTION : SWS SUPPLY TO CCS HEAT EXCHANGER ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV107C is a safety class break and isolates the non-safety related Secondary Component Cooling Water heat exchangers upon a Containment Isolation Phase A signal or low pressure is sensed on the Service Water header for a given period of time. This valve is considered high priority when ranked by PRA. Sister valves 2SWS-MOV107A and 107B have been dynamically tested and the results applied to the static setup of 2SWS-MOV107C. The valve is in series with and redundant to 2SWS-MOV107D. The valve is identified in Emergency Operating Procedures associated with a Steam Generator Tube Rupture and Abnormal Operating Procedures associated with Loss of Service Water. In both procedures, the valve is administratively stroked open as part of the plant recovery process.

VERIFIED BY:

APR 2 5 1994 Steven A Foehlein — NED (for design/target values)

M. Pettigrew 4/26/94 — MEAD (for as-left values and margin)

MANUFACTURER : POSI-SEAL SIZE: 24.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 11000 GPM

DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1972 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 655 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1894 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 577 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV107D**

DESCRIPTION : SWS SUPPLY TO CCS HEAT EXCHANGER ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV107D is a safety class break and isolates the non-safety related Secondary Component Cooling Water heat exchangers upon a Containment Isolation Phase A signal or low pressure is sensed on the Service Water header for a given period of time. This valve is considered high priority when ranked by PRA. Sister valves 2SWS-MOV107A and 107B have been dynamically tested and the results applied to the static setup of 2SWS-MOV107D. The valve is in series with and redundant to 2SWS-MOV107C. The valve is identified in Emergency Operating Procedures associated with a Steam Generator Tube Rupture and Abnormal Operating Procedures associated with Loss of Service Water. In both procedures, the valve is administratively stroked open as part of the plant recovery process.

VERIFIED BY:

APR 2 5 1994 Steven A Soehlau NED (for design/target values)

M. Pettigrew 4/26/94 MEAD (for as-left values and margin)

MANUFACTURER : POSI-SEAL SIZE: 24.0 inch TYPE: BUTTERFLY

DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 11000 GPM

DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET TORQUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1957 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 640 ft-lbs.

CLOSING DIRECTION

SETTINGS

TARGET TORQUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1922 ft-lbs.

MARGIN MEASURED ABOVE TARGET : 605 ft-lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV

BVPS-2 VALVE I.D. - **2SWS-MOV113A**

DESCRIPTION : SWS SUPPLY TO DIESEL GEN HEAT EXCHANGER ISOLATION VALVE

SAFETY SIGNIFICANCE: 2SWS-MOV113A is in the line supplying cooling water from the Service Water System (SWS) to the No. 1 Emergency Diesel Generator (EDG). It automatically opens upon a Safety Injection Signal or whenever the EDG is started. The valve is considered to have high risk significance. Sister valve 2SWS-MOV113D has been dynamically tested and the results applied to the static setup of 2SWS-MOV113A. The valve is identified in the Emergency Operating Procedure for Loss of All AC Power and is verified to be open.

VERIFIED BY:

4/29/94 Steven A Sochlein
NED (for design/target values)

M Pettigrew 4/29/94
MEAD (for as-left values and margin)

MANUFACTURER : WALWORTH SIZE: 6.0 inch TYPE: GATE

DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: N/A
DESIGN LINE PRESSURE : 150 psig

CALCULATIONAL ASSUMPTIONS

VALVE FACTOR: 0.53 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%

ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY [ ] TEST OF SISTER VALVE [X]

OPENING DIRECTION

SETTINGS

TARGET THRUST = 3326 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.

MARGIN MEASURED ABOVE TARGET : * lbs.

* Torque switch is bypassed for the first 90% of valve travel.

CLOSING DIRECTION

SETTINGS

TARGET THRUST = 3326 lbs. AS-LEFT STATIC THRUST (meas.) = 4032 lbs.

MARGIN MEASURED ABOVE TARGET : 284 lbs.

Defined as: (measured static as-left) - (equipment error at target) - (target value)