Duquesne Light Company

Beaver Valley Power Station P.O. Box 4 Shippingport, PA 15077-0004 (412) 393-5206 (412) 643-8069 FAX

April 29, 1994

GEORGE S. THOMAS Division Vice President Nuclear Services Nuclear Power Division

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

- 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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Beaver Valley Power Station, Unit No. 2 Response to Generic Letter 89-10, Supplement 6 Page 2

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 value 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.

Beaver Valley Power Station, Unit No. 2 Response to Generic Letter 89-10, Supplement 6 Page 3

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:

- 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) COUNTY OF BEAVER) SS:

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.

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Subscribed and sworn to before me on this 29^{40} day of april 1994

Notary Public

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

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 89-10 127 Program Scope.
- Number of MOVs whose switches have been set under 127 static system conditions using the best available data.
- Number of MOVs determined to not be practicable 48 to test in situ under dynamic system conditions.
- Number of MOVs determined to be practicable to 79 test in situ under dynamic system conditions.
- Number of MOVs whose capability has been verified by in situ testing under dynamic system conditions.
- 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.)

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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 Teolstion Valve
2CHS-MOV8132R	Charging Pump Discharge Teolation Valve
2CHS-MOV8133A	Charging Pump Discharge Teolation Valve
2CHS-MOVEL33R	Charging Dump Discharge Isolation Valve
2HCS-MOVI16	Hydrogen Recombiner 21A Return to Containment Icol
2HCS-MOV117	Hydrogen Recombiner 218 Return to Containment Isol.
2HVR-MOD23A	Containment Purge Exhaust Isolation Damper
2HVR-MOD23B	Containment Purge Exhaust Teolation Damper
2HVR-MOD25A	Containment Purge Supply Icolation Damper
2HVR-MOD25R	Containment Purge Supply Isolation Damper
2055-MOV101A	Quench Spray Pump 214 Discharge Teolation
2055-MOV101R	Quench Spray Pump 218 Discharge Isolation
2055 MOV1015	OSS Chem Add Tank to Chem Injection Dump 24A
2055 MOV102R	OSS Chem Add Tank to Chem Injection Pump 24R
2005-MOV102D	PORV 2RCS=PCV455C Inlet Isolation
2RCS-MOV535	PORV 2RCS-PCV456 Inlet Isolation
2RCS-MOV537	PORV 2RCS-MOV455D Inlet Isolation
2PHS-MOUTOIA	Recidual Heat Removal System Train-1 Supply Icol
2PHS-MOV701R	Residual Heat Removal System Train-B Supply ISOL
2RHS-MOV702A	Residual Heat Removal System Train-1 Supply Isol.
2RHS-MOUTO2R	Residual Heat Removal System Train-B Supply Isol.
2RIS MOVIESA	Residual heat Removal System Hain-D Supply 1501.
2DSS-MOV155B	Recirc Spray Pump 218 Outside Cont. Suction Isol.
2R55-MOV1550	Recirc Spray Pump 210 Outside Cont. Suction Isol.
2000-MOV155D	Recirc Spray Pump 210 Outside Cont. Suction Isol.
2CTS-MOV199D	ST Accumulator Test Line Isolation to DWST
2515-MOV842	High Head Safety Injection to Hot Log Icolation
2STS=MOV260R	High Head Safety Injection to Hot Leg Isolation
2515-MOV2809D	Low Head Safety Injection Pump 21A Suction Teolation
2STS-MOV2200R	Low Head Safety Injection Pump 218 Suction Isolation
2515-MOV2811A	RSS Pump 21C Disch Crossover to IHST 21A Discharge
2010-MOV0011A	Des Dump 210 Disch Crossover to INST 218 Discharge
2010-M0V00110	top ramp are proof crossover to mor are precuarde

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CALCULATIONAL ASSUMPTIONS

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

ASSUMPTIONS BASED ON:

OPENING DIRECTION

STANDARD CALC METHODOLOGY X

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.

TEST OF SISTER VALVE

MARGIN MEASURED ABOVE TARGET : 304 ft-lbs.

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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 NED for design transit values
NEW (for designitarget values) wiewe for asment values and marging
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.

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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 nonsafety related Containment Instrument Air compressors; it automatically closes on a Containment Isolation phase A signal or upon Io-Io 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.

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ADD 25 1001 Steven a Frehlein	M. Vettigrew- 4/26/94
NED (for design/target values)	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 psi	9
CALCULATIONAL ASSUMPTIONS	
VALVE FACTOR: N/A LOAD SENSITIVE BE	HAVIOR: N/A MARGIN FOR DEGRADATION: N/A
	processing processing
ASSUMPTIONS BASED ON: STANDARD CA	ALC METHODOLOGY X TEST OF SISTER VALVE
OPENIN	IG DIRECTION
SETTINGS	
TARGET TORQUE = 17 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) = 305 ft-lbs.
	205 6 16
# MARGIN MEASURED ABOVE TARGET :	200 H-Ibs.
CLOSIN	IG DIRECTION
SETTINGS	
	070
TARGET TORQUE = 17 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) = Z/b ft-lbs.
# MARGIN MEASURED ABOVE TARGET	256 ft-lbs
WANGIN WEASONED ADOVE TANGET.	LOU 11103.
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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 Abellen M. Pettignen 4/29/94 NED (for design/target values) 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			
CETTINICS			
TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 300 ft-lbs.			
# MARGIN MEASURED ABOVE TARGET : 116 ft-lbs.			

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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.

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VENIFIED DT.	1. Alter	no All'
Algalar	Steven a Hehlem	11. Jettigrew 4/29/94
17-174	NED (for design/target values)	MEAD (for as-left values and margin)
MAN	UFACTURER : HENRY PRATT	SIZE: 10.0 inch TYPE: BUTTERFLY
DESIG	N BASIS DIFF. PRESSURE: 140 ps	DESIGN BASIS FLOW: 3300 GPM
	DESIGN LINE PRESSURE : 140 ps	ig
CALCULATIONAL	ASSUMPTIONS	Weighter the first the second second second
VALVE FACTO	R: N/A LOAD SENSITIVE BE	HAVIOR: N/A MARGIN FOR DEGRADATION: N/A
ASSUMPTION	IS BASED ON: STANDARD C	ALC METHODOLOGY X TEST OF SISTER VALVE
	OPENI	NG DIRECTION
CETTINICS		
SET TINGS		
TARGE	TTTOROUE = 172 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) = 263 ft-lbs.
# 1\	ARGIN MEASURED ABOVE TARGET :	79 ft-lbs.
	CLOSI	IG DIRECTION
SETTINGS		
<u>AFTINGS</u>		
TARGE	T TORQUE = 172 ft-lbs.	AS-LEFT STATIC TOROUE (meas.) = 241 ft-lbs.
# N	ARGIN MEASURED ABOVE TARGET :	57 ft-lbs.

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EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV VALVELD - 2CCP-MOV176-1 BVPS-2 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: Alph Sein 4/29/94 (for as-left values and margin NED (for design/target values) MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY 3300 GPM DESIGN BASIS DIFF. PRESSURE: 140 psi DESIGN BASIS FLOW: DESIGN LINE PRESSURE : 140 psig CALCULATIONAL ASSUMPTIONS VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A STANDARD CALC METHODOLOGY X TEST OF SISTER VALVE ASSUMPTIONS BASED ON: **OPENING DIRECTION** SETTINGS 172 ft-lbs. 202 ft-lbs. TARGET TORQUE = AS-LEFT STATIC TORQUE (meas.) = # MARGIN MEASURED ABOVE TARGET : 18 ft-lbs. CLOSING DIRECTION SETTINGS TARGET TORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 199 ft-lbs. 15 ft-lbs. # MARGIN MEASURED ABOVE TARGET :

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EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV VALVEI.D. - 2CCP-MOV176-2 **BVPS-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: 1/29/94 NED (for design/target values) MEAD (for as-left values and margin MANUFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY DESIGN BASIS FLOW: 3300 GPM DESIGN BASIS DIFF. PRESSURE: 140 psi DESIGN LINE PRESSURE : 140 psig CALCULATIONAL ASSUMPTIONS VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A TEST OF SISTER VALVE ASSUMPTIONS BASED ON: STANDARD CALC METHODOLOGY X **OPENING DIRECTION** SETTINGS 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 250 ft-lbs. TARGET TORQUE = # MARGIN MEASURED ABOVE TARGET : 66 ft-lbs. CLOSING DIRECTION SETTINGS AS-LEFT STATIC TORQUE (meas.) = 249 ft-lbs. TARGET TORQUE = 172 ft-lbs. 65 ft-lbs. # MARGIN MEASURED ABOVE TARGET :

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EVALUATION	OF	STATIC	SETTINGS	FOR
NON-DYNAMIC	ALL	Y TESTE	D 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 nonsafety 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.

Steven a Frehlen NED (for design/target values)	MEAD (for as set values and margin)
ACTURER : HENRY PRATT	SIZE: 10.0 inch TYPE: BUTTERFLY
BASIS DIFF. PRESSURE: 135 p ESIGN LINE PRESSURE : 135 p	si DESIGN BASIS FLOW: 3300 GPM sig
SSUMPTIONS	
N/A LOAD SENSITIVE B	EHAVIOR: N/A MARGIN FOR DEGRADATION: N/A
BASED ON: STANDARD (CALC METHODOLOGY X TEST OF SISTER VALVE
OPEN	NG DIRECTION
TORQUE = 172 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) = 226 ft-lbs.
RGIN MEASURED ABOVE TARGET :	42 ft-lbs.
CLOSI	NG DIRECTION
TORQUE = 172 ft 'bs.	AS-LEFT STATIC TORQUE (meas.) = 219 ft-lbs.
IN MEASURED ABOVE TARGET	35 ft-lbs.
	State Bellew NED (for design/target values) FACTURER : HENRY PRATT BASIS DIFF. PRESSURE : 135 p ESIGN LINE PRESSURE : 135 p SSUMPTIONS N/A LOAD SENSITIVE B BASED ON: STANDARD C OPENI TORQUE = 172 ft-lbs. RGIN MEASURED ABOVE TARGET : TORQUE = 172 ft 'bs. RGIN MEASURED ABOVE TARGET :

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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 Behlew M. Pettigrew 4/29/94 NED (for design/target values) 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.

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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 nonsafety 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.

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Alaphan	Steven a Tochlein M. Fetligren 4/29/94		
+127/74	NED (for design/target values) MEAD (for as-left values and margin)		
MAN	UFACTURER : HENRY PRATT SIZE: 10.0 inch TYPE: BUTTERFLY		
DESIG	N BASIS DIFF. PRESSURE: 135 psi DESIGN BASIS FLOW: 3300 GPM DESIGN LINE PRESSURE : 135 psig		
CALCULATIONAL	ASSUMPTIONS		
VALVE FACTO	R: N/A LOAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A		
ASSUMPTION	IS BASED ON: STANDARD CALC METHODOLOGY X TEST OF SISTER VALVE		
	OPENING DIRECTION		
SETTINGS			
TARGE	TTORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 206 ft-lbs.		
# MARGIN MEASURED ABOVE TARGET : 22 ft-lbs.			
CLOSING DIRECTION			
SETTINGS			
TARGE	TTORQUE = 172 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 214 ft-lbs.		
# MARGIN MEASURED ABOVE TARGET : 30 ft-lbs.			
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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 nonsafety 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 BT:	1. 1.1.1	11 ~	all all	la la s
Alastan	Steven a Oblh	lein)	M. Tettigrew	4/29/24
4121194	NED (for design/target va	ues)	MEAD (for as-left values an	d margin)
MANU	FACTURER : HENRY PRAT	T SIZE:	10.0 inch TYPE:	BUTTERFLY
DESIGN	I BASIS DIFF. PRESSURE: DESIGN LINE PRESSURE :	135 psi 135 psig	DESIGN BASIS FLOW:	3300 GPM
CALCULATIONAL	ASSUMPTIONS	andran and any normalization (normalization and a second		
VALVE FACTOR	N/A LOAD SE	SITIVE BEHAVIOR: 1	N/A MARGIN FO	R DEGRADATION: N/A
ASSUMPTION	S BASED ON: STA	NDARD CALC METH	ODOLOGY X TEST	OF SISTER VALVE
		OPENING DIREC	TION	
SETTINGS	n a la construction de la construct			
TARGE	T TORQUE = 172 ft-lb	s. AS-LEF	STATIC TORQUE (meas.) =	251 ft-lbs.
# MARGIN MEASURED ABOVE TARGET : 67 ft-lbs.				
		CLOSING DIREC	CTION	
SETTINGS	lan onder som en det av en staten i verstage som en som en staten som en som en som en som en som en som en so			
TARGE	T TORQUE = 172 ft-lb	s. AS-LEFT	STATIC TORQUE (meas.) =	284 ft-lbs.
# M	ARGIN MEASURED ABOVE TA	RGET : 100	t-lbs.	

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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:	
1. 0 1 10 -	an n.11. 1 1
APR 2 5 1994 Steven a Fachleen	M. Pethorew 4/26/94
NED (for design/target values) ME	AD (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	
COAD SENSITIVE BEHAVIOR: N/A	MARGIN FOR DEGRADATION: N/A
ASSUMPTIONS BASED ON: STANDARD CALC METHODOL	
OPENING DIRECTION	N
<u>SETTINGS</u>	
TARGET TORQUE = 200 ft-lbs. AS-LEFT STA	TIC TOROUF (mass) - 268 ft lbs
# MARGIN MEASURED ABOVE TARGET : 44 ft-lbs.	
CLOSING DIRECTION	V
SETTINGS	
TARGET TORQUE = 200 ft-lbs. AS-LEFT STA	TIC TORQUE (meas.) = 269 ft-lbs.
# MARGIN MEASURED ABOVE TARGET : 45 ft-lbs.	

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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.

An an experiment of the second s	
VERIFIED BY:	
le A	find matt daily
APR 2 5 1991 Steven U	Bellew M. Vellyrew 416/94
NED (for design)	(target values) MEAD (for as-left values and margin)
MANUFACTURER : XOM	DX (A&M) SIZE: 4.0 inch TYPE: PLUG
DESIGN BASIS DIFF. PRESS	URE: 60 psi DESIGN BASIS FLOW: N/A
DESIGN LINE PRESSU	IRE 45 nsia
Debron Enternicose	nic. Ho parg
CALCULATIONAL ASSUMPTIONS	
STRUCE THE SOUTH FROM	
VALVE FACTOR: N/A	OAD SENSITIVE BEHAVIOR: N/A MARGIN FOR DEGRADATION: N/A
ACCUMUTIONS DACED ON	
ASSUMPTIONS BASED ON:	STANDARD CALC METHODOLOGY _ TEST OF SISTER VALVE
	OPENING DIRECTION
OCTINICO.	
SETTINGS	
	400
TARGET TORQUE =	400 tt-lbs. AS-LEFT STATIC TORQUE (meas.) = 453 tt-lbs.
a second s	
# MARGIN MEASURED A	ABOVE TARGET : To ft-lbs.
	CLOSING DIRECTION
SETTINGS	
TARGET TORQUE =	400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 474 ft-lbs.
# MARGIN MEASURED A	ABOVE TARGET : 37 ft-lbs.

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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:
1000 - the actual MP. Hine - 1/26/21
APR 2 5 1994 Steven a Joch Lew MEAD Hornes latt values and margin
NED (for design/target values) MEAD (for design/target)
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
수가 하는 것이 같은 것은 것은 것이 같은 것이 같은 것이 같은 것이 있는 것이 같은 것이 같은 것이 같은 것이 같이 없는 것이 같이 없다.
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
행사 이번 것이 같은 것이 같은 것이 같은 것이 같은 것이 같은 것이 같이 많이
TARGET TORQUE = 400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 510 ft-ll s.
승규는 것 같은 것 같
MARGIN MEASURED ABOVE TARGET : 73 ft-lbs.
CLOSING DIRECTION
SETTINGS
방법적 이 것 같은 것 같은 것이 많은 것이 같이 가지 않는 것 같이 많이
TARGET TORQUE = 400 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 499 ft-lbs.
MARGIN MEASURED ABOVE TARGET : 62 ft-lbs.

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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 identified 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.

ADD 25 1001 Steven a Seeklein	M. Pettines 4/26/94
NED (for design/target values)	MEAD (for as left values and margin)
MANUFACTURER : WESTINGHOUSE	SIZE: 10.0 inch TYPE: GATE
DESIGN BASIS DIFF. PRESSURE: 455 ps DESIGN LINE PRESSURE: 450 ps	i DESIGN BASIS FLOW: N/A
ALCULATIONAL ASSUMPTIONS	
VALVE FACTOR: 0.50 LOAD SENSITIVE BE	HAVIOR: 10% MARGIN FOR DEGRADATION: 5%
ASSUMPTIONS BASED ON: STANDARD C	ALC METHODOLOGY X TEST OF SISTER VALVE
OPENI	NG DIRECTION
ETTINGS	
TARGET THRUST = 18749 lbs.	AS-LEFT STATIC THRUST (meas.) = * Ibs.
# MARGIN MEASURED ABOVE TARGET :	* Ibs.
* Torque switch is bypassed for	r the first 90% of valve travel.
CLOSI	NG DIRECTION
ETTINGS	
TARGET THRUST = 18749 lbs.	AS-LEFT STATIC THRUST (meas.) = 41686 lbs.
# MARGIN MEASURED ABOVE TARGET :	20840 lbs.

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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 value is interlocked with RCS transmitters which will cause the value to automatically close on high RCS pressure. The value is considered a low priority value when ranked by the PRA. The value 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 value is also identified 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.

ADD 2 5 1001 Steven a Jochlem	M. Pettiger 4/26/94
NED (for design/target values)	MEAD (for as-left values and margin)
MANUFACTURER : WESTINGHOUSE	SIZE: 10.0 inch TYPE: GATE
DESIGN BASIS DIFF. PRESSURE: 455 psi DESIGN LINE PRESSURE : 450 psi	DESIGN BASIS FLOW: N/A
CALCULATIONAL ASSUMPTIONS	
VALVE FACTOR: 0.50 LOAD SENSITIVE BEI	HAVIOR: 10% MARGIN FOR DEGRADATION: 5%
ASSUMPTIONS BASED ON: STANDARD CA	ALC METHODOLOGY X TEST OF SISTER VALVE
OPENIN	IG DIRECTION
SETTINGS	
TARGET THRUST = 18749 lbs.	AS-LEFT STATIC THRUST (meas.) = * Ibs.
# MARGIN MEASURED ABOVE TARGET :	lbs.
* Torque switch is bypassed for	the first 90% of valve travel.
CLOSIN	IG DIRECTION
SETTINGS	
TARGET THRUST = 18749 lbs.	AS-LEFT STATIC THRUST (meas.) = 30508 lbs.
# MARGIN MEASURED ABOVE TARGET :	9662 lbs.

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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.

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A CONTRACTOR OF THE	St. Al	10. 7		an anti	11-	a las
4/29/94	Sleven a Ool	neen	2	1. Tellegrew	4/6	<u>7/7</u> 4 .
	NED (for design/targe	et values)		MEAD (for Missient val	ues and mar	(In the
MAN	IUFACTURER : VELAN		SIZE:	2.0 inch	TYPE: GLO	BE
DESIG	N BASIS DIFF. PRESSURE:	605 psi		DESIGN BASIS F	LOW:	N/A
	DESIGN LINE PRESSURE :	600 psig				
CALCULATIONAL	ASSUMPTIONS		a overske mediser i se sa		en en el font e autorization da	n ann an samhanna ann an San an San Ann an S
VALVE FACTO	R: 1.10 LOAD	SENSITIVE BEH	iavior: 10	% MAR	GIN FOR DEC	GRADATION: 5%
ASSUMPTION	S BASED ON:	STANDARD CA	LC METHOD	DOLOGY	TEST OF SI	STER VALVE
	ana pang kanang kana	OPENIN	G DIRECT	ION		
SETTINGS						ana aliy tanan da aliyo yana taliyo ya dalar Waldani in ka
TARG	ET THRUST = 2266	lbs.	AS-LEFT S	STATIC THRUST (me	as.) =	* Ibs.
# N	MARGIN MEASURED ABOV	E TARGET :	* Ibs			
	* Torque switch is	bypassed for	the first 9	0% of valve trav	el.	
		CLUSIN	G DIRECT	ION		
SETTINGS			Andre in a state of the state			
TARG	ET THRUST = 2266	lbs.	AS-LEFT S	STATIC THRUST (me	as.) =	9573 ibs.
# 1	ARGIN MEASURED ABOV	E TARGET :	6745 lbs			

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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:
Ateren A Freklein M. Pettigien 4/29/94
4/29/94 NED (for design/target values) 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 : * Ibs.
* 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.

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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.
APR 2 5 1994 NED (for design/target values) MEAD (for a 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 : * Ibs.
* Torque switch is bypassed for the first 90% of valve travel.
CLOSING DIRECTION
ISETTINGS
TARGET THRUST = 2660 lbs. AS-LEFT STATIC THRUST (meas.) = 3552 lbs.
MARGIN MEASURED ABOVE TARGET : 291 lbs.

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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 Atres A the flow	m Petting Azelan
NED (for design/target values)	MEAD (for as left values and margin)
	na pané ana mananana kana kandanana ina kanana na kana kanana kanana kanana kanana kanana kanana kanana kana ka Kanana
MANUFACTURER : WESTINGHOUSE	SIZE: 3.0 inch TYPE: GATE
DESIGN BASIS DIEF, PRESSURE: 2650 psi	DESIGN BASIS FLOW: N/A
DESIGN LINE PRESSURE : 2650 psi	
CALCULATIONAL ASSUMPTIONS	
VALVE FACTOR: 0.50 LOAD SENSITIVE BEI	HAVIOR: 10% MARGIN FOR DEGRADATION: 5%
ASSUMPTIONS BASED ON: STANDARD CA	ALC METHODOLOGY X TEST OF SISTER VALVE
OPENIN	IG DIRECTION
SETTINGS	
TARGET THRUST = 11448 lbs.	AS-LEFT STATIC THRUST (meas.) = * Ibs.
# MARGIN MEASURED ABOVE TARGET :	* Ibs.
* Torque switch is bypassed for	the first 90% of valve travel.
CLOSIN	IG DIRECTION
SETTINGS	
TARGET THRUST = 11448 lbs.	AS-LEFT STATIC THRUST (meas.) = 13867 lbs.
# MARGIN MEASURED ABOVE TARGET	1354 lbs.
그는 그는 것은 것을 잘 하는 것을 수가 있다. 말하는 것을 하는 것을 수가 있다. 것을 하는 것을 수가 있는 것을 수가 있다. 것을 수가 있는 것을 수가 있다. 것을 것을 것을 것을 것을 것을 것을 수가 있는 것을 것을 것을 것을 수가 있는 것을 것을 수가 있다. 것을	그가지 하고 한 것 같은 것 같은 것 않는 것 같은 것 같아?

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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:		
	Steven a Focklern	M. Pettignew 4/29/91
4/29/94	NED (for design/target values)	MEAD (for as feft values and margin)
MANU	JFACTURER : WESTINGHOUSE	SIZE: 10.0 inch TYPE: GATE
DESIGN	BASIS DIFF. PRESSURE: 175 psi DESIGN LINE PRESSURE : 170 psi	DESIGN BASIS FLOW: N/A
CALCULATIONAL	ASSUMPTIONS	
VALVE FACTOR	0.50 LOAD SENSITIVE BE	HAVIOR: 13% MARGIN FOR DEGRADATION: 5%
ASSUMPTION	S BASED ON: STANDARD C	ALC METHODOLOGY TEST OF SISTER VALVE X
	OPENIN	IG DIRECTION
SETTINGS	une in the anti-angle in the annual sector and a transmission of the sector in the sector in the sector and the sector is a sector of the sector in the sector is a sector of the sector in the sector is a sector is a sector in the sector is a sector is a sector in the sector is a sector is a sector in the sector is a sector is a sector is a sector is a sector in the sector is a sector is a sector in the sector is a sector in the sector is a s	
TARGE	T THRUST = 7842 lbs.	AS-LEFT S. ATIC THRUST (meas.) = * Ibs.
# M	ARGIN MEASURED ABOVE TARGET :	* Ibs.
1. A.	* Torque switch is bypassed for	the first 90% of valve travel.
	CLOSIN	IG DIRECTION
SETTINGS		
TARGE	T THRUST = 7842 lbs.	AS-LEFT STATIC THRUST (meas.) = 01391 lbs.
# M	ARGIN MEASURED ABOVE TARGET :	32647 lbs.

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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:	\mathcal{O}
11. 1.	Steven a Joeklein M. Settignew 4/27/94
4/26/94	NED (for design/target values) MEAD (for as-left values and margin)
M	ANUFACTURER : WESTINGHOUSE SIZE: 4.0 inch TYPE: GATE
DE	SIGN BASIS DIFF. PRESSURE: 145 psi DESIGN BASIS FLOW: N/A DESIGN LINE PRESSURE : 145 psig
CALCULATION	IAL ASSUMPTIONS
VALVE FAC	TOR: 0.78 LOAD SENSITIVE BEHAVIOR: 10% MARGIN FOR DEGRADATION: 5%
ASSUMPT	IONS BASED ON: STANDARD CALC METHODOLOGY TEST OF SISTER VALVE X
PARTICULAR DESCRIPTION OF THE PARTY OF	OPENING DIRECTION
SETTINGS	
TA	RGET THRUST = 1796 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.
#	MARGIN MEASURED ABOVE TARGET : * Ibs.
	* Torque switch is bypassed for the first 90% of valve travel.
	CLOSING DIRECTION
SETTINGS	
TA	RGET THRUST = 1796 lbs. AS-LEFT STATIC THRUST (meas.) = 3445 lbs.
#	MARGIN MEASURED ABOVE TARGET : 1075 lbs.

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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 Joeklen	M. Pettignew 4/20/94
NED (for design/target values)	MEAD (for as left values and margin)
MANUFACTURER : HENRY PRATT	SIZE: 30.0 inch TYPE: BUTTERFLY
DESIGN BASIS DIFF. PRESSURE: 150 p DESIGN LINE PRESSURE : 150 p	si DESIGN BASIS FLOW: 15000 GPM
CALCULATIONAL ASSUMPTIONS	
VALVE FACTOR: N/A LOAD SENSITIVE B	EHAVIOR: N/A MARGIN FOR DEGRADATION: N/A
ASSUMPTIONS BASED ON: STANDARD (CALC METHODOLOGY TEST OF SISTER VALVE
OPENI	NG DIRECTION
SETTINGS	
TARGET TORQUE = 5714 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) = 8069 ft-lbs.
# MARGIN MEASURED ABOVE TARGET :	1974 ft-lbs.
CLOSI	NG 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)

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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.

le ne sa an san' il i
Alacha Steven a Joekleen M. Pettigrew 4/29/94
4/29/94 NED (for design/target values) 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 BEHAVIOH: N/A MARGIN FOR DEGRADATION: N/A
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.

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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 Behlein M. Pe	thegrew 4/29/24
MED (for design/target values) MEAD (for as	-left values and margin)
MANUFACTURER : XOMOX(TUFLINE) SIZE: 3.0 inch	TYPE: PLUG
DESIGN BASIS DIFF. PRESSURE: 155 psi DESIGN E DESIGN LINE PRESSURE : 155 psig	BASIS FLOW: N/A
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 TORO	UE (meas.) = 308 ft-lbs.
# MARGIN MEASURED ABOVE TARGET : 85 ft-lbs.	
CLOSING DIRECTION	
OCOUNTS DIRECTION	
SETTINGS	
TARGET TORQUE = 200 ft-lbs. AS-LEFT STATIC TORQU	UE (meas.) = 322 ft-lbs.
# MARGIN MEASURED ABOVE TARGET : 99 ft-lbs.	

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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.

VERIEIED BY			
TENTILO OT	1. 1 1 11-	AN Dett.	apla .
1/29/92	Steven a Tehlem	M. Vellignens 41	1194
7121119	NED (for design/target values)	MEAD (for as-left values and m	argin)
MAI	NUFACTURER : XOMOX(TUFLINE)	SIZE: 3.0 inch TYPE: PL	UG
DESIC	GN BASIS DIFF. PRESSURE: 155 ps DESIGN LINE PRESSURE : 155 ps	i DESIGN BASIS FLOW:	N/A
CALCULATIONA	LASSUMPTIONS		
VALVE FACTO	DR: N/A LOAD SENSITIVE BE NS BASED ON: STANDARD C.	HAVIOR: N/A MARGIN FOR D	EGRADATION: N/A
	OPENI	NG DIRECTION	
SETTINGS			
TARG	ET TORQUE = 200 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) =	342 ft-lbs.
#	MARGIN MEASURED ABOVE TARGET :	119 ft-lbs.	
CLOSING DIRECTION			
SETTINGS			
TARG	ET TORQUE = 200 ft-lbs.	AS-LEFT STATIC TORQUE (meas.) =	358 ft-lbs.
#	MARGIN MEASURED ABOVE TARGET :	135 ft-lbs.	

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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:
shalar Steven a Joeklem M. Pettinew 4/29/94
4/2-1/94 NED (for design/target values) 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.

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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 <u>Ateven a Freklein</u> <u>M. Pettgiew 420/94</u> NED (for design/target values) <u>MEAD (for as-lett values and margin)</u> 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 METHUROLOGY 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.

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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:	
daalas Ateres a treklein	M Pattinger 1/29/91
4/21/94 NED (for design/target values)	MEAD (topas-left values and margin)
	mente fregers iere valees and marging exclosion and an
MANUFACTURER : HENRY PRATT S	IZE: 30.0 inch TYPE: BUTTERFLY
DESIGN BASIS DIFF. PRESSURE: 145 psi	DESIGN BASIS FLOW: 15000 GPM
DESIGN LINE PRESSURE : 150 psig	
CALCULATIONAL ASSUMPTIONS	
COAD SENSITIVE BEHAVI	OH: N/A MARGIN FOR DEGRADATION: N/A
ASSUMPTIONS BASED ON STANDARD CALC	
ACCOUNT HOUS DAGED ON. STANDARD CALC N	TEST OF SISTER VALVE
OPENING D	IRECTION
SETTINGS	
TARGET TORQUE = 5676 ft-lbs. AS	LEFT STATIC TORQUE (meas.) = 7960 ft-lbs.
# MANGIN MEASURED ABOVE TANGET : 19	US ft-lbs.
CLOSING DIRECTION	
SETTINGS	
TARGET TORQUE = 5676 ft-lbs. AS	-LEFT STATIC TORQUE (meas.) = 7960 ft-lbs.
	02 (1)
WANGIN WEASURED ABOVE TARGET : 19	US IT-IDS.

Page 30 of 37

EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV VALVEI.D. - 2SWS-MOV102C2 **BVPS-2** 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: a Joekkin M. Pettigiew 4/29/94 NED (for design/target values) TYPE: BUTTERFLY MANUFACTURER : HENRY PRATT SIZE: 30.0 inch DESIGN BASIS DIFF. PRESSURE: 145 psi DESIGN BASIS FLOW: 15000 GPM DESIGN LINE PRESSURE : 150 psig CALCULATIONAL ASSUMPTIONS MARGIN FOR DEGRADATION: N/A VALVE FACTOR: N/A LOAD SENSITIVE BEHAVIOR: N/A STANDARD CALC METHODOLOGY TEST OF SISTER VALVE X ASSUMPTIONS BASED ON: **OPENING DIRECTION** SETTINGS 5676 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 7391 ft-lbs. TARGET TORQUE = # MARGIN MEASURED ABOVE TARGET : 1334 ft-lbs. CLOSING DIRECTION SETTINGS AS-LEFT STATIC TORQUE (meas.) = 7391 ft-lbs. TARGET TORQUE = 5676 ft-lbs. # MARGIN MEASURED ABOVE TARGET : 1334 ft-lbs.

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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.

APR 2 5 1994 Steven a Joekley M. Pethgiew 4/26/94 NED (for design/target values) MEAD (for all-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 : * Ibs.
* 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.

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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 25 1991 Store A tolland M Patting shilly	
NED Has design (a Opention The Other and margin)	
NED (for design/target values) MEAD (for agreet 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	
방법이 집에 잘 잘 들었다. 그는 것은 것은 것은 것은 것은 것은 것은 것을 가지 않는 것을 가지 않는 것을 수 있는 것을 하는 것을 하는 것을 수 있다. 것을 가지 않는 것을 가지 않는 것을 가지 않는 것을 하는 것을 하는 것을 수 있다. 것을 가지 않는 것을 가지 않는 것을 수 있다. 가지 않는 것을 수 있다. 가지 않는 것을 가지 않는 것을 수 있다. 가지 않는 것을 가지 않는 것을 수 있다. 귀에서 있다. 가지 않는 것을 수 있다. 귀에서 있다. 가지 않는 것을 수 있다. 것을 것을 것을 수 있다. 것을 것을 것을 수 있다. 것을 것을 것을 것을 수 있다. 것을 것을 것을 수 있다. 것을 것을 것을 것을 수 있다. 것을 것을 것을 것을 것을 것을 수 있다. 가지 않는 것을 것을 것을 수 있다. 것을 것 같이 않다. 것을	
TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = * lbs.	
# MARGIN MEASURED ABOVE TARGET : * Ibs.	
* Torque ewitch is hunassed for the first 00% of value travel	
CLOSING DIRECTION	
CLOSING DIRECTION	
SETTINGS	
TARGET THRUST = 8168 lbs. AS-LEFT STATIC THRUST (meas.) = 9286 lbs.	
# MARGIN MEASURED ABOVE TARGET : 233 lbs.	

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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 Behlan M. Pethoner 4/26/94
NED (for design/target values) MEAD (for as left values and margin)
MANUFACTURER : WALWORTH SIZE: 16.0 inch TYPE: GATE
DESIGN BASIS DIFF. PRESSURE: 130 osi 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 : * Ibs.
* 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.
MARCIN MEASURED AROVE TARGET . 510 the
MANGIN MEASURED ABOVE LANGET . 010 lbs.

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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 Behlein M. Pethgies 4/26/94 NED (for design/target values) MEAD (for as seft 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 : * Ibs. * 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.

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EVALUATION OF STATIC SETTINGS FOR NON-DYNAMICALLY TESTED GL89-10 MOV VALVELD - 2SWS-MOV107C **BVPS-2** 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 Tochlein MEAD (for as-left values and margin NED (for design/target values) MANUFACTURER : POSI-SEAL 24.0 inch TYPE: BUTTERFLY SIZE: 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 TEST OF SISTER VALVE X STANDARD CALC METHODOLOGY ASSUMPTIONS BASED ON: OPENING DIRECTION SETTINGS TARGET TOROUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1972 ft-lbs. # MARGIN MEASURED ABOVE TARGET : 655 ft-lbs. CLOSING DIRECTION SETTINGS TARGET TOROUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1894 ft-lbs. # MARGIN MEASURED ABOVE TARGET : 577 ft-lbs.

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NON-DYNAMICALLY TESTED GL89-10 MOV BYPS-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 Scendary 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. Sitter valves 2SWS-MOV107D. The valve is in series with and redundant to 2SWS-MOV107C. The valve is identified in Emergency 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	EVALUATION OF STATIC SETTINGS FOR
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. Siter valves 2SWS-MOV107D. The valve is in series with and redundant to 2SWS-MOV107C. The valve is identified in Emergency 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 Maching Mathematical Secure Advises and Mathematical Secure Advises and margin MANUFACTURER : POSI-SEAL NED for design/target values) MANUFACTURER : POSI-SEAL NED for design/target values) MANUFACTURER : POSI-SEAL DESIGN BASIS DIFF. PRESSURE: 150 psi VALVE FACTOR: N/A ADAD SENSITIVE BEHAVIOR: N/A MAR	NON-DYNAMICALLY TESTED GL89-10 MOV
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-MOV107D. The valve is identified in Emergency 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: March 2 1994 March 4000000000000000000000000000000000000	BVPS-2 VALVE I.D 2SWS-MOV107D
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-MOV107D. The valve is in 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 <u>Junean Abulleon</u> NED (for design/target values) MANUFACTURER : POSI-SEAL DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS SIFF. PRESSURE: 150 psi CALCULATIONAL ASSUMPTIONS VALVE FACTOR: 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. SETTINGS	DESCRIPTION : SWS SUPPLY TO CCS HEAT EXCHANGER ISOLATION VALVE
APR 2 5 1994 Junch & Julian M. Rettigue 4/26/24 MANUFACTURER : POSI-SEAL SIZE: 24.0 inch TYPE: BUTTERFLY DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 11000 GPM DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 11000 GPM CALCULATIONAL ASSUMPTIONS VALVE FACTOR: N/A MARGIN FOR DEGRADATION: N/A 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-ibs. AS-LEFT STATIC TORQUE (meas.) = 1957 ft-ibs. # MARGIN MEASURED ABOVE TARGET : 640 ft-ibs. CLOSING DIRECTION	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.
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 DESIGN BASIS FLOW: 11000 GPM 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	APR 2 5 1994 Steven a Behlein M. Pettypew 4/26/94 NED (for design/target values) MEAD (for assert values and margin)
DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 11000 GPM DESIGN LINE PRESSURE: 150 psig DESIGN BASIS FLOW: 11000 GPM 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. ELOSING DIRECTION SETTINGS	MANUFACTURER : POSI-SEAL SIZE: 24.0 inch TYPE: BUTTERFLY
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	DESIGN BASIS DIFF. PRESSURE: 150 psi DESIGN BASIS FLOW: 11000 GPM DESIGN LINE PRESSURE : 150 psig
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	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
SETTINGS TARGET TORQUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1957 ft-lbs. # MARGIN MEASURED ABOVE TARGET : 640 ft-lbs. CLOSING DIRECTION SETTINGS	OPENING DIRECTION
CLOSING DIRECTION	SETTINGS TARGET TORQUE = 1215 ft-lbs. AS-LEFT STATIC TORQUE (meas.) = 1957 ft-lbs. # MARGIN MEASURED ABOVE TARGET : 640 ft-lbs.
SETTINGS	CLOSING DIRECTION
	SETTINGS
TARGET TORQUE =1215 ft-lbs.AS-LEFT STATIC TORQUE (meas.) =1922 ft-lbs.# MARGIN MEASURED ABOVE TARGET :605 ft-lbs.	TARGET TORQUE =1215 ft-lbs.AS-LEFT STATIC TORQUE (meas.) =1922 ft-lbs.# MARGIN MEASURED ABOVE TARGET :605 ft-lbs.

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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 Speklein M. Pettigieus 4/29/84 MEAD (for designificanet values) MEAD (for as left values and margin)
MANUEACTURED WALWORTH SIZE 6.0 inch TVDE CATE
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 : * Ibs.
 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.