REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8801200370 DOC. DATE: 88/01/14 NOTARIZED: YES. DOCKET #
FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
AUTH. NAME AUTHOR AFFILIATION
WOODY, C. O. Florida Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
GRACE, J. N. Region 2, Ofc of the Director

SUBJECT: Forwards summary rept satisfying requirements of Item F of IE Bulletin 85-03, "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings."

DISTRIBUTION CODE: IE11D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 16
TITLE: Bulletin Response (50 DKT)

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-2 LA		1	0	PD2-2 PD	1	1
	McDONALD, D		1	1			
INTERNAL:	AEOD/DOA		1	1	AEOD/DSP	1	1
	AEOD/DSP/TPAB		1	1	NRR/DEST/ADE	1	1
	NRR/DEST/ADS		1	1	NRR/DEST/MEB	1	1
	NRR/DOEA/EAB		1	1	NRR/DOEA/GCB	1	1
	NRR/DREP/EPB		1	1	NRR/PMAS/ILRB	1	1
	REG FILE	02	1	1	RES/DE/EIB	1	1
	RGN2 FILE	01	1	1			
EXTERNAL:	LPDR		1	1	NRC PDR	1	1
	NSIC		1	1			

TOTAL NUMBER OF COPIES REQUIRED: LTTR 19 ENCL 18

P. O. BOX 14000, JUNO BEACH, FL 33408-0420

FPL

JANUARY 14 1988

L-88-18

Dr. J. Nelson Grace
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta St., N.W., Suite 2900
Atlanta, GA 30323

Dear Dr. Grace:

Re: Turkey Point Unit 3
Docket No. 50-250
IE Bulletin 85-03

The purpose of this letter is to provide a summary report satisfying the requirements of Item f. of NRC IE Bulletin 85-03, "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings." The report provides (1) a verification of completion of the requested program, (2) a summary of the findings as to valve operability prior to any adjustments as a result of this bulletin, and (3) a summary of data in accordance with the NRC suggested Data Summary Format. Completion of each specific requirement of IE Bulletin 85-03 is addressed individually for Turkey Point Unit 3.

A similar report will be submitted for Turkey Point Unit 4 upon completion of the remaining testing required. This testing is scheduled to occur during the next refueling outage.

Should there be questions, please contact us.

Very truly yours,

C. O. Woody
for Executive Vice President

COW/SDF/gp

Attachment

cc: Document Control Desk, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

SDF/014.IEB

IE11

STATE OF FLORIDA)
) ss.
COUNTY OF PALM BEACH)

J. K. Hays being first duly sworn, deposes and says:

That he is Director Nuclear Licensing of Florida Power & Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said Licensee.

J. K. Hays

Subscribed and sworn to before me this
14th day of January, 1988.

NOTARY PUBLIC, in and for the County
of Palm Beach, State of Florida

My Commission expires: NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP SEPT 18,1989
BONDED THRU GENERAL INS. UND.

NRC IE BULLETIN NO. 85-03
MOTOR-OPERATED VALVE COMMON MODE FAILURES
DURING PLANT TRANSIENTS DUE TO IMPROPER SWITCH SETTINGS
TURKEY POINT UNIT 3
SUMMARY REPORT

This summary report is submitted to satisfy the requirements of Item f. of NRC IE Bulletin 85-03. This report provides (1) a verification of completion of the requested program, (2) a summary of the findings as to valve operability prior to any adjustments as a result of this bulletin, and (3) a summary of data in accordance with the NRC Suggested Data Summary Format. Completion of each specific requirement of IE Bulletin 85-03 will be addressed individually.

Item a.

Item a. of NRC IE Bulletin 85-03 required that the design basis for the operation of each motor-operated valve in the high pressure coolant injection and emergency feedwater systems that are required to be tested for operational readiness in accordance with 10CFR50.55a(g) be reviewed and documented. This documentation was to include the maximum differential pressure expected during both opening and closing the valve for both normal and abnormal events.

The motor-operated valve design basis information to satisfy Item a. for Turkey Point Units 3 and 4 had been previously transmitted to the NRC via FPL letter L-86-226 dated May 28, 1986. Also, included in this transmittal was a description of the proposed program and the associated schedule to complete Items b., c., and d. of IE Bulletin 85-03.

Subsequent to the original FPL transmittal, the NRC submitted two Requests for Additional Information (RAI) concerning the proposed FPL program. These two RAI's were formally addressed via FPL letters L-86-471 dated November 18, 1986 and L-87-386 dated September 17, 1987.

Note that two additional valves, 3-856A and 3-856B (safety injection pump recirculation to refueling water storage tank) were added to the scope of IE Bulletin 85-03. These valves were originally air-operated valves but were modified to motor-operated valves to address the concerns of NRC IE Bulletin 86-03, "Potential Failure of Multiple ECCS Pumps Due to Single Failure of Air Operated Valves in Minimum Flow Recirculation Line". These valves are included in the attached Suggested Data Summary Format table (Attachment 1) and associated notes.

Item b.

Item b. of IE Bulletin 85-03 required that correct switch settings be established for each motor-operated valve identified in Item a. Also, if a valve was determined to be inoperable, an appropriate justification for continued operation in accordance with the applicable technical specifications was to be prepared. FPL letter L-86-226 dated May 28, 1986 originally scheduled the completion of Item b. for October 17, 1986. However, due to late valve vendor responses, FPL letter L-86-408 dated October 10, 1986 subsequently rescheduled the completion of Item b. to January 30, 1987.

In order to address Item b. of IE Bulletin 85-03, FPL first transmitted the maximum differential pressures calculated in Item a. to the appropriate valve vendors. Each valve vendor was requested to provide the following information associated with each valve:

a. Stem thrust required for operation.
b. Stem torque required for operation.
c. Maximum allowable stem thrust.
d. Maximum allowable stem torque.
e. Recommended motor-operator control logic
f. Recommended torque bypass switch settings.

The information provided by each valve vendor was then transmitted to Limitorque for evaluation of each valve actuator. Limitorque provided the maximum thrust and torque capability of each actuator along with any recommended hardware changes.

A review of all the vendor supplied information was then performed by FPL to determine the correct motor-operated valve (MOV) switch settings. While some of the MOV switch settings were adjusted, the overall MOV control logic requirements (limit switch to open, torque switch to close, limit switch to close, etc.) were not changed as a result of IE Bulletin 85-03.

For simplicity, only one MOV switch setting policy was established for gate and globe valves. The switch setting policy for IE Bulletin 85-03 gate and globe valves is as follows for each control switch.

a. Open Torque Switch

All IE Bulletin 85-03 MOV's utilize limit switch to open control logic. Therefore, the purpose of the open torque switch is to provide backup in case the open limit switch fails to actuate. The open torque switch will provide protection to ensure that the allowable thrust ratings for both the valve and actuator are not exceeded if the valve backseats or if mechanical binding occurs while the valve is in mid-stroke. The open torque switches were set utilizing MOVATS signature analysis equipment. The stem thrust at the open torque switch trip was measured using standard MOVATS stem thrust measurement techniques.

A range of acceptable thrust values for the open torque switch has been developed for each MOV. The minimum thrust required to open the valve against maximum differential pressure has been calculated by the appropriate valve vendor. The maximum allowable thrust value is based upon the limiting component, either the valve or the actuator. Again the valve vendor has determined the maximum allowable thrust for his valve while Limitorque has provided the maximum allowable thrust rating for the actuator. Setting the open torque switch to trip at a value between the minimum and maximum allowable thrust values ensures both valve operability and eliminates the potential for overstressing either the valve or actuator components. Note that the final target thrust values have considered published measurement equipment uncertainties.

b. Close Torque Switch

For those MOV's utilizing torque switch to close control logic, the close torque switch was again set utilizing MOVATS stem thrust measurement techniques. A range of acceptable thrust values for the closing stroke has been developed for each MOV. The minimum thrust value required to close the valve under maximum differential pressure conditions has been determined by the appropriate valve vendor. The maximum allowable thrust values were again determined to ensure that neither the valve nor the actuator's allowable thrust rating is exceeded. Setting the close torque switch to trip at a value between the minimum and maximum thrust value will ensure that leak-tight closure of the valve has been achieved and neither the valve nor actuator components are overstressed. As for the open torque switch, the final target thrust values have considered published measurement equipment uncertainties.

c. Open Limit Switch

The open limit switches were set to trip the actuator at a point which ensures the valve is fully open and to also prevent inadvertent backseating of the valve. Due to the physical differences between the valves included in the IE Bulletin 85-03 program, a specific setpoint for the open limit switches was difficult to establish. However, if a valve did inadvertently backseat during opening due to contactor dropout time and/or inertia, MOVATS signature analysis techniques were utilized to ensure the maximum thrust limit of the valve and actuator was not exceeded.

d. Close Limit Switch

For those MOV's utilizing limit switch to close control logic, in lieu of a torque switch, MOVATS stem thrust measurement techniques were again utilized to ensure that the thrust developed at limit switch trip fell within an acceptable thrust range. This target thrust range was developed using the same methodology as for the close torque switch described above. Verification of the thrust achieved during close limit switch trip again ensures that tight shut-off of the valve has been achieved and valve or actuator thrust ratings have not been exceeded.

e. Close-to-Open Torque Bypass Limit Switch

The close-to-open torque bypass limit switch is utilized to prevent inadvertent open torque switch actuation during the high loading condition present when the valve disc is lifted from the seat. The close-to-open bypass switch, if selected and set properly, will ensure that the valve will perform its intended safety function even if the open torque switch is improperly set.

Each valve vendor was contacted to provide recommendations for setting of the close-to-open torque bypass switch. Although several ranges of acceptable switch settings were provided, it was desirable to select one bypass switch setting that conservatively enveloped those recommended.

Therefore, the close-to-open torque bypass limit switch was set to open during 20-25% of the valve opening stroke. Industry testing performed by MOVATS has shown that a 20-25% torque bypass switch setting ensures that the open torque switch is adequately bypassed during the high loading condition experienced under high differential pressure conditions for both gate and glove valves.

Note that a 20-25% close-to-open torque bypass switch setting could impact the closed position indicating lights. Therefore, each Bulletin 85-03 MOV was reviewed to determine the impact of an increased bypass switch setting on position indication. As a result, all IE Bulletin 85-03 MOV's have been modified as necessary, to include a four-rotor limit switch and wire the close-to-open torque bypass switch and closed indicating light on separate rotors.

Note that this method for setting the close-to-open torque bypass switch and closed indicating lights eliminates the inaccurate position indication condition identified in NRC IE Information Notice 86-29 and INPO SOER 86-2.

f. Open-to-Close Torque Bypass Limit Switch

High loading conditions are normally not experienced during the initial portion of the valve closing stroke. Therefore, no specific requirements are specified for the open-to-close torque bypass limit switch. Normally, the open-to-close torque bypass switch shares the same rotor as the open limit switch and open indicating light. As a result, this switch was set to actuate at the same point as the open limit switch.

g. Open Indicating Light

As stated above for item f., the open indicating light normally shares the same limit switch rotor as the open limit switch and open-to-close torque bypass switch. This switch was therefore set to actuate at the same point as the open limit switch.

h. Closed Indicating Light

If the MOV utilizes limit switch to close control logic then the closed indicating light was set to actuate at the same point as the close limit switch. If the MOV utilizes torque switch to close control logic, hardware modifications were required to wire the close-to-open torque bypass switch and closed indicating light on separate rotors. For these cases the closed indicating light limit switch was set to actuate at approximately 2-5% of valve travel from the fully closed position.

A procedure for sizing and selecting thermal overload heaters was also developed. This procedure took into consideration vendor and industry recommendations to establish overload trip setpoints that avoid premature thermal overload trips. Thermal overload heaters were subsequently specified for each IE Bulletin 85-03 MOV.

The controlled document containing all the above switch setting information was completed and issued on January 23, 1987.

Item c.

Item c. of IE Bulletin 85-03 required that individual valve settings be changed, as appropriate, to those values established in Item b. Item c. also required that each valve be demonstrated to be operable by testing the valve at the maximum differential pressure determined in Item a. with the exception that testing motor-operated valves under conditions simulating a break in the line containing the valve would not be required. Justifications were to be provided for any cases where testing with the maximum differential pressure cannot be practicably performed.

In order to implement Item c. of IE Bulletin 85-03, a comprehensive MOV training program was first established. Plant maintenance personnel received "hands-on" training on the design, operation, maintenance and troubleshooting of Limitorque actuators. Next, electrical maintenance personnel were formally trained on the use of the MOVATS 2100 MOV signature analysis system. This training program was scheduled and completed prior to the start of the IE Bulletin 85-03 test program. Additionally, MOVATS field representatives assisted plant maintenance personnel in the implementation of the switch settings on several Turkey Point Unit 3 IE Bulletin 85-03 MOV's.

The MOVATS 2100 System was utilized to implement all of the specified MOV switch settings for each IE Bulletin 85-03 valve. Signature traces of spring pack displacement, limit switch and torque switch actuations, and motor current were obtained for each MOV to verify accurate limit switch settings. The MOV torque switches were also set using MOVATS equipment to obtain the target thrusts determined in Item b.

In order to accomplish the differential pressure testing requirements of Item c., FPL established the following program. First, all IE Bulletin 85-03 MOV's were grouped to envelope all valve/actuator configurations and test conditions. At least one valve out of each test group was then required to be differential pressure stroke tested. MOVATS equipment was utilized to ensure that the remaining valves in each test group developed more thrust at torque switch trip than the test valve.

The actual stroke testing was performed under dynamic conditions (differential pressure plus flow) utilizing existing process pumps. In order to maximize the differential pressures obtained during stroke testing, plant refueling outage conditions were required. Note that the proposed FPL testing program to satisfy Item c. of IE Bulletin 85-03 had been informally discussed with the NRC staff via telecon and deemed adequate.

The attached Suggested Data Summary Format table (Attachment 1) provides the results of the differential pressure stroke testing program. Also included as notes to the table are the appropriate justifications for partial differential pressure testing. Note that if test pressures in excess of 95% of the design differential pressure were obtained, no justification is deemed necessary.

All MOV's that were differential pressure stroke tested operated satisfactorily. The valves were verified to fully open and close by both local observation and remote position indicating lights. No MOV failures were experienced at Turkey Point Unit 3.

Item f. of IE Bulletin 85-03 also required that a summary of the findings as to valve operability prior to any MOV switch adjustments as a result of the bulletin be provided. All IE Bulletin 85-03 MOV's at Turkey Point Unit 3 met the operability requirements of Section XI of the ASME Code as required by plant technical specifications prior to the issue of the bulletin. FPL developed what is considered a conservative MOV switch setting policy for IE Bulletin 85-03 MOV's to further enhance valve operability. As a result of this conservative MOV switch setting policy, several MOV switch settings were adjusted. However, these MOV switch adjustments should not be interpreted to mean that an MOV was inoperable prior to the implementation of the bulletin switch setting policy. Full differential pressure testing of the MOV's prior to implementation of any Bulletin 85-03 switch adjustments is the only absolute method of determining whether a valve is inoperable. This testing was not performed at Turkey Point Unit 3 as it was not a requirement of NRC IE Bulletin 85-03.

Item d.

Item d. of IE Bulletin 85-03 required that procedures be prepared or revised to ensure that correct switch settings are determined and maintained throughout the life of the plant.

Procedures for performing MOV testing on each bulletin valve have been developed. All setpoints for 85-03 valves have been established and are contained in a controlled document. To ensure that correct switch settings are maintained in the future following maintenance, existing maintenance procedures are being modified to require an electrical department retest evaluation when maintenance is performed on motor operated valves. Additionally, an MCC load device has been purchased and is being evaluated for future use in determining the effects of maintenance on valve operability. FP&L will continue to evaluate industry methods for maintaining MOV operability and will modify existing methods when deemed beneficial.

TURKEY POINT UNITS 3 & 4
AUXILIARY FEEDWATER SYSTEM

Data Summary

Valve Component ID, Manufacturer, Type, Model, Size, Rating	Valve Operator Manufacturer, Model, Motor RPM, Output Speed (RPM)	Valve Function	Design Basis ΔP Open/Close	Test ΔP Open/Close	Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Response to Bulletin Open/Close
MOV-3-1403** Velan Globe P3-8472-N4* 4 inch 900#	Limitorque SMB-00 1900 rpm	Steam Generator 3A Steam Isolation	1118 psid/ 1118 psid	See MOV-3-1404 & MOV-3-1405	1 1/2 / 1 1/2	2 1/2 / 2 1/2
MOV-3-1404** Velan Globe P3-8472-N4* 4 inch 900#	Limitorque SMB-500 1750 rpm	Steam Generator 3B Steam Isolation	1118 psid/ 1118 psid	1000 psid/ 890 psid (89%/80% of design) See Note 1	1 1/2 / 1	1 3/4 / 1 3/4
MOV-3-1405** Velan Globe P3-8472-N4* 4 inch 900#	Limitorque SMB-00 1900 rpm	Steam Generator 3C Steam Isolation	1118 psid/ 1118 psid	1000 psid/ 875 psid (89%/78% of design) See Note 1	1 1/2 / 1 1/2	3 / 2 1/2
Mov-4-1403 Velan Globe P3-8472-N4* 4 inch 900#	Limitorque SMB-00 1900 rpm	Steam Generator 4A Steam Isolation	1118 psid/ 1118 psid		See Note 2	

TURKEY POINT UNITS 3 & 4
AUXILIARY FEEDWATER SYSTEM

Data Summary

Valve Component ID, Manufacturer, Type, Model, Size, Rating	Valve Operator Manufacturer, Model, Motor RPM, Output Speed (RPM)	Valve Function	Design Basis AP Open/Close	Test AP Open/Close	Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Response to Bulletin Open/Close
MOV-4-1404 Velan Globe P3-8472-N4* 4 inch 900#	Limitorque SMB-500 1750 rpm	Steam Generator 4B Steam Isolation	1118 psid/ 1118 psid		See Note 2	
MOV-4-1405 Velan Globe P3-8472-N4* 4 inch 900#	Limitorque SMB-00 1900 rpm	Steam Generator 4C Steam Isolation	1118 psid/ 1118 psid		See Note 2	
MOV-6459A Gimpel Corp. Globe NP-1794* 3" 900#	Limitorque SMB-000 1900 rpm	A-AFW Pump Trip and Throttle Valve	1118 psid/ 1118 psid	See MOV-6459C	1 1/2 / 2 1/2	1 / 1 1/3
MOV-6459B Gimpel Corp. Globe NP-1794* 3" 900#	Limitorque SMB-000 1900 rpm	B-AFW Pump Trip and Throttle Valve	1118 psid/ 1118 psid	See MOV-6459C	1 3/5 / 1 1/2	1 / 1

TURKEY POINT UNITS 3 & 4
AUXILIARY FEEDWATER SYSTEM

Data Summary

Valve Component ID, Manufacturer, Type, Model, Size, Rating	Valve Operator Manufacturer, Model, Motor RPM, Output Speed (RPM)	Valve Function	Design Basis ΔP Open/Close	Test ΔP Open/Close	Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Response to Bull Open/Close
MOV-6459C Gimpel Corp. Globe NP-1794* 3" 900#	Limitorque SMB-000 1900 rpm	C-AFW Pump Trip and Throttle Valve	1118 psid/ 1118 psid	1000 psid 1000 psid (89% of design) See Note 1	2 / 2 3/4	2 / 1 1/2

* - Denotes drawing number

** - As stated in the original FPL submittal, these valves were changed out during the last Turkey Point Unit 3 refueling outage. Motor operators and differential pressures have not changed.

TURKEY POINT UNITS 3 & 4
SAFETY INJECTION SYSTEM

Data Summary

Valve Component ID, Manufacturer, Type, Model, Size, Rating	Valve Operator Manufacturer, Model, Motor RPM, Output Speed (RPM)	Valve Function	Design Basis ΔP Open/Close	Test ΔP Open/Close	Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Response to Bullet Open/Close
3-864A Anchor/Darling Gate 16x14x16-S70 300#	Limitorque SMB-0 1750 rpm	Unit 3 RWST To HHSI Pump Suction	25 psid/ 25 psid	0 psid/ 0 psid Static Test Only See Note 3	3 / 2 1/2	1 3/8 / 1 3/8
3-864B Anchor/Darling Gate 16x14x16-S70 300#	Limitorque SMB-0 1750 rpm	Unit 3 RWST To HHSI Pump Suction	25 psid/ 25 psid	0 psid/ 0 psid Static Test Only See Note 3	1 1/2 / 1 1/2	1 1/4 / 1 3/8
4-864A Anchor/Darling Gate 16x14x16-S70 300#	Limitorque SMB-0 1750 rpm	Unit 4 RWST To HHSI Pump Suction	25 psid/ 25 psid		See Note 2	
4-864B Anchor/Darling Gate 16x14x16-S70 300#	Limitorque SMB-0 1750 rpm	Unit 4 RWST To HHSI Pump Suction	25 psid/ 25 psid		See Note 2	

TURKEY POINT UNITS 3 & 4
SAFETY INJECTION SYSTEM
Data Summary

Valve Component ID, Manufacturer, Type, Model, Size, Rating	Valve Operator Manufacturer, Model, Motor RPM, Output Speed (RPM)	Valve Function	Design Basis ΔP Open/Close	Test ΔP Open/Close	Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Response to Bulletin Open/Close
878 A Anchor/Darling Gate 4". No. S 200 900#	Limitorque SMB-00 1700 rpm	Safety Injection Pump Cross-Connect	1452 psid/ 1452 psid	See 878 B	1/1	1 3/4 / 1 3/4
878 B Anchor/Darling Gate 4" No. S 200 900#	Limitorque SMB-00 1750 rpm	Safety Injection Pump Cross-Connect	1452 psid/ 1452 psid	1505 psid/ 1505 psid (104% of design)	1/1	1 3/4 / 1 3/4
3-843 A Anchor/Darling Gate 4" No. S350 1500#	Limitorque SMB-0 3400 rpm	Safety Injection Pump Discharge Isolation to Unit 3 Cold Legs	2485 psid/ 1548 psid	See 3-843B	2 1/2 / 2	2 1/4 / 2
3-843 B Anchor/Darling Gate 4" No. S350 1500#	Limitorque SMB-0 3400 rpm	Safety Injection Pump Discharge Isolation to Unit 3 Cold Legs	2485 psid/ 1548 psid	1585 psid/ 1585 psid (64% / 102% of design) See Note 4	2 1/2 / 2	3 / 2 5/8

TURKEY POINT UNITS 3 & 4
SAFETY INJECTION SYSTEM

Data Summary

Valve Component ID, Manufacturer, Type, Model, Size, Rating	Valve Operator Manufacturer, Model, Motor RPM, Output Speed (RPM)	Valve Function	Design Basis AP Open/Close	Test AP Open/Close	Switch Settings Prior to Adjustments as a Result of Bulletin Open/Close	Final Switch Settings in Response to Bullet Open/Close
4-843 A Anchor/Darling Gate 4" No. S350 1500#	Limitorque SMB-0 3400 rpm	Safety Injection Pump Discharge Isolation to Unit 4 Cold Legs	2485 psid/ 1548 psid		See Note 2	
4-843 B Anchor/Darling Gate 4" No. S350 1500#	Limitorque SMB-0 3400 rpm	Safety Injection Pump Discharge Isolation to Unit 4 Cold Legs	2485 psid/ 1548 psid		See Note 2	
3-856A Copes Vulcan 2" Globe 02-404-0223-24* See Note 5	Limitorque SMB-000	Safety Injection Pump Recirculation to RWST	1548 psid/ 1548 psid	1301 psid/ 1301 psid (84% of design) See Note 6	2 3/4 / 2 1/2	1 1/4 / 2 1/2
3-856B Copes Vulcan 2" Globe 02-404-0223-24* See Note 5	Limitorque SMB-000	Safety Injection Pump Recirculation to RWST	1548 psid/ 1548 psid	See 3-856A	2 / 3	1 / 3 1/8

TURKEY POINT UNITS 3 AND 4
NRC IE BULLETIN NO. 85-03
DATA SUMMARY TABLE

Notes:

1. The test differential pressure indicated represents the maximum steam pressure achievable during hot standby conditions. Steam pressures in excess of this test value can only be achieved by placing the plant in an abnormal condition.

2. This valve is located on Turkey Point Unit 4. Completion of Item c. of IE Bulletin 85-03 for this valve is currently scheduled for the upcoming Turkey Point Unit 4 refueling outage. The data summary table will be completed at that time.

3. Valves 3-864A and 3-864B are the refueling water storage tank (RWST) isolation valves. The piping and pump arrangement at Turkey Point is such that static differential pressure testing is only possible if the downstream piping is empty or a pipe break is simulated. It would not be practical to drain the downstream portion of piping due to the large amount of water contained. Also, Item c. of IE Bulletin 85-03 does not require valve testing under conditions simulating a pipe break.

   Valves 3-864A and 3-864B have a very low design basis differential pressure (25 psid) as compared to the remaining IE Bulletin 85-03 MOV's. However, the same conservative switch setting policy was established for these valves as for the high differential pressure MOV's to ensure valve operability.

4. The opening design basis differential pressure of 2485 psig for this valve assumes the buildup of RCS backpressure on the downstream side of the valve due to backleakage through the safety injection check valves. This condition is not possible to simulate as RCS backleakage would have to occur through two check valves in series. The MOV switch setting policy at Turkey Point has been established such that the open torque switch is bypassed up to 20-25% of the valve opening stroke to prevent inadvertent open torque switch actuation. Also, the open torque switch was set to actuate at a thrust value in excess of the minimum opening thrust specified by the valve vendor. Note also that the valve did close satisfactorily when exposed to a differential pressure slightly in excess of the design basis closing differential pressure.

5. Valve 3-856A and 3-856B were added to the scope of IE Bulletin 85-03. These valves were originally air-operated valves. However, in order to address NRC IE Bulletin 86-03 "Potential Failure of Multiple ECCS Pumps Due to Single Failure of Air Operated Valves in Minimum Flow Recirculation Line", these valves were modified to motor-operated valves during the last Turkey Point Unit 3 refueling outage. As these valves were originally air operated, they were not included in the scope of IE Bulletin 85-03. However, the program was expanded to include these valves prior to implementation of the modification. Note that a similar modification is planned for Turkey Point Unit 4 during the upcoming refueling outage and those valves will be included in the IE Bulletin 85-03 program at that time.

6. The design basis differential pressure cannot be achieved without dead-heading the safety injection pumps. An alternate minimum recirculation flow path was established during valve stroke testing to avoid the potential for damaging the safety injection pumps.