GL 88-01, Supplement 1

PECO ENERGY

PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

August 9, 1995

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

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

Subject: Peach Bottom Atomic Power Station, Units 2 and 3
Generic Letter 88-01, Supplement 1, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping"

Reference: 1) Letter from G. A. Hunger, Jr. (PECO Energy Company) to U. S. Nuclear Regulatory Commission (USNRC), dated May 24, 1995

Dear Sir:

In the Reference 1 letter, PECO Energy Company requested approval to reduce our Generic Letter (GL) 88-01, Supplement 1 ("NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping") actions by eliminating inspections of the RWCU System welds outboard of the primary containment isolation valves.

The following Motor Operated Valve (MOV) information is provided in response to USNRC additional questions relative to the Reference 1 submittal.

We understand that this information will be used to provide a confidence level on the ability of the subject valves to isolate under a high energy line break scenario and mitigate the consequences of such a break. Please note that a modification is planned during refueling outage 3R10, currently scheduled for this fall, for valve MO-3-12-018 to install a larger actuator and increase its capability.

A018 1/1

USNRC question Number 1:

For the 12-15, 12-18 and 12-68, please include the valve number, type of valve, valve factors and basis for use of those valve factors, the torque switch settings and basis for the settings (if applicable), and the type of actuator (size/capability).

PECO Energy Response:

The attached table provides valve specific data in response to this question. The basis for the valve factors and torque switch settings are addressed below.

Basis of Valve Factors Used for Anchor Darling Valves

Because the Peach Bottom Atomic Power Station (PBAPS) has no plant specific dynamic test data for the few Anchor Darling valves in the plant, an alternate source of valve factor information was used. For gate valves, in the absence of useful plant specific dynamic test data, PECO Energy established a bounding valve factor based on a statistical analysis of the preconditioned wedge gate valve test data available from the EPRI Performance Prediction Program testing. The analysis included Anchor Darling and Velan wedge gate valve test data because these valves are most representative of the Generic Letter 89-10 gate valve population at our Limerick Generating Station (LGS) and the few Anchor Darling gate valves at PBAPS. This analysis concluded that a bounding gate valve factor of 0.62, established with a 95% confidence level, was applicable to Anchor Darling gate valves smaller than 10 inches without valve specific dynamic test data.

For non-Rockwell Edward globe valves, dynamic testing at LGS, as well as the EPRI testing of Anchor Darling globe valves, has validated the PECO Energy seat based valve factor assumption of 1.1 for rising, non-rotating stem globe valves. Therefore, if no valve specific dynamic test data is available, a bounding valve factor of 1.1 is used for rising, non-rotating stem globe valves.

Basis of Valve Factors Used for Walworth Gate Valves

To supplement PBAPS gate valve dynamic test data, Walworth gate valve dynamic test data from valves sufficiently similar to PBAPS valves was obtained from two other utilities and the EPRI Performance Prediction Program testing. The applicable collected industry data and the PBAPS specific dynamic test valve factor data were statistically analyzed to

determine a bounding valve factor. This analysis determined that a bounding gate valve factor of 0.50, established with a 95% confidence level, was applicable to Walworth gate valves. Because the collection of dynamic test data is continuing, PECO Energy is using a 0.60 valve factor to bound PBAPS Walworth wedge gate valves without valve specific dynamic test data until additional applicable dynamic test data has been collected and analyzed.

Basis for Torque Switch Settings

Valve thrust and torque requirements are based on licensing design basis requirements and system operating conditions using a standard industry sizing methodology. Motor operator capability is evaluated considering Limitorque guidance and accounts for operation under degraded voltage conditions and temperature effects.

Individual MOV torque switch setting adequacy is verified through static diagnostic testing with the following acceptance criteria including allowances for applicable diagnostic equipment error and torque switch repeatability:

- Thrust at torque switch trip is greater than minimum required including margins for rate of loading, and a safety factor for degradation effects.
- Total thrust after inertia is less than valve or actuator structural limits.
- Torque at torque switch trip is less than minimum degraded voltage operator torque capability.
- Total torque after inertia is less than valve or actuator structural limits.

USNRC question Number 2:

In addition, for the 12-15 and 12-68 valves, please provide us with the % margin for torque switch settings. Also include how much of the % accounted for torque switch repeatability, rate of loading, and degraded voltage.

PECO Energy Response:

The attached table provides valve specific data in response to this question.

USNRC question Number 3:

Please provide any information on your weak link analysis for the 3 valves indicated above.

PECO Energy Response:

The attached table provides valve specific data in response to this comment.

USNRC question Number 4:

How do you plan to address the EPRI information on potential damage on blowdown valves concerning rounded sharp edges and clearances for gate valves. For globe valves, we would like you to address EPRI's information on very high thrust requirements for blowdown valves.

PECO Energy Response:

PECO Energy has addressed the EPRI information for potential damage to blowdown gate valves by reviewing EPRI Topical Report TR-103255 "Gate Valve Design Effects Testing Results" and developing recommendations to improve gate valve predictability during blowdown. These recommendations, which include disc, disc guide, and seat ring edge treatments, and disc to guide clearances, were discussed with EPRI and presented to the original equipment manufacturer for concurrence For PBAPS, Unit 2 the recommended disc and disc guide edge treatments, and disc to guide clearances were implemented on MO-2-12-015 and MO-2-12-018 during 2R10 last fall. The recommended enhancements for PBAPS, Unit 3 MO-3-12-018 are planned for 3R10 this fall.

The EPRI information regarding globe valves under blowdown conditions has been reviewed,and it does not apply to the PECO Energy Anchor Darling globe valves described above for the following reasons:

1) The EPRI tested valve (#48) is a small (2") Rockwell Uni-Valve design which is significantly different from the Anchor Darling globe valves in several critical design features.

Rockwell Uni-Valve	Anchor Darling Globe
Rising/Rotating Stem	Rising/Non-Rotating Stem
Piston Type Disc/Guide	Conventional Guided Plug

2) The EPRI data is based on a single valve test that is uncharacteristic of the globe valves that PECO Energy utilizes in blowdown applications. In addition, PECO Energy's experience with Rockwell Uni-Valves indicates that their characteristic thrust signatures are prone to cyclic loading making valve factor performance predictions unreliable.

If you have any questions, please contact us.

Very truly yours,

G. A. Hunger, Jr.

G. A. Hunger, Jr.
Director - Licensing

cc: T. T. Martin, Administrator, Region I, USNRC
W. L. Schmidt, USNRC Senior Resident Inspector, PBAPS

RESPONSE TO NRC QUESTIONS REGARDING RWCU MOTOR OPERATED ISOLATION VALVES

MOV#/ MANUFACTURER	TYPE/SIZE	ACTUATOR/ VALVE FACTOR	AS-LEFT TSS THRUST/ TORQUE	ROL/TSR (TSS)	TOTAL DESIGN UNCERTAINTY SAFETY FACTOR	VALVE WEAK LINK/THRUST	AS-LEFT % THRUST MARGIN	AS-LEFT % MOTOR MARGIN @ DEG. VOLTAGE
UNIT 3					(NOTE 2)		(NOTE 3)	(NOTE 4)
MO-3-12-015	GLOBE	SB-2-60	50,777#	15%	37.7%	STEMCLAMP KEY	28.2%	95.5%
ANCHOR DARLING	6"	1.1	1,038'-"	5% (1.25)		65,780#		
MO-3-12-018	GATE	SMB-1-40	MOD PENDING (NOTE 5)	15%	32.0% W/ SMARTSTEM	YOKE LEGS	MOD PENDING (NOTE 5)	MOD PENDING (NOTE 5)
ANCHOR DARLING	6"	0.62		5% (>1.0)		86,410#		
MO-3-12-068	GLOBE	SMB-0-15	13,061#	15%	42.7%	DISC	172%	279%
ANCHOR DARLING	4"	N/A (NOTE 1)	114'-"	10% (1.0)		31,310		
UNIT 2								
MO-2-12-015	FW GATE	SMB-0-25	28,610#	15%	32.0% W/ SMARTSTEM	YOKE LEGS	14.1%	55.5%
WALWORTH	6"	0.6	374'-"	5% (3.0)		43,400#		
MO-2-12-018	FW GATE	SMB-0-25	28,483#	15%	32.0% W/ SMARTSTEM	YOKE LEGS	9.3%	18.8%
WALWORTH	6"	0.6	418'-"	5% (3.0)		43,200#		
MO-2-12-068	GLOBE	SMB-0-15	26,279#	15%	37.7%	DISC	394%	47.9%
ANCHOR DARLING	4"	N/A (NOTE 1)	313'-"	5% (2.25)		31,310#		

NOTES 1. For these valves HELB flow is over disc assisting valve closure and significantly reduces thrust required to close. In addition, a check valve in this line prevents HELB flow scenarios for these valves.

2. Factor combines measurement error, TSR, ROL and safety factor.

3. As-left thrust margin over minimum required thrust. This margin is above the inherent design margin provided by the NOTE 2 factor.

4. Indicates motor limited torque margin above measured torque @ TST. Motor limited torque is based on design basis degraded voltage and elevated temperature.

5. MO-3-12-018 is scheduled for modification during 3R10 for margin improvement. Data represents the modified MOV.