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NUCLEAR ENGINEERING & SERVICES DEPARTMENT

February 20, 1992

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

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

SUBJECT: Peach Bottom Atomic Power Station, Units 2 and 3
Inservice Testing Program

REFERENCES: (1) Letter from J. W. Gallagher (PECo) to W. R. Butler (NRC) dated June 29, 1988.

(2) Letter from W. R. Butler (NRC) to G. J. Beck (PECo) dated January 17, 1991.

(3) Letter from G. J. Beck (PECo) to NRC dated dated October 8, 1991.

Dear Sir:

In Reference (1), Philadelphia Electric Company (PECo) submitted a revised second 10-year interval Inservice Testing (IST) Program for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. In Reference (2), the NRC transmitted a Safety Evaluation of the IST Program. In Reference (3), PECo provided an updated, uncontrolled copy of Revision 2 to the IST Program which included changes recommended by the NRC in the Safety Evaluation.

The purpose of this letter is to submit revisions to two previously approved Relief Requests, GPRR-1 which contains administrative changes only and is provided for information, and GPRR-2 which is being submitted for NRC review and approval prior to implementation. The associated pages from the Pump Tables are also enclosed.

Relief Request GPRR-1 allows pump vibration to be measured in units of velocity instead of displacement amplitude, as required by ASME Code Section XI, IWP-4500. This Relief Request currently applies to all pumps in the IST Program. Implementation of Modification 5344 will add proximeters to the High Pressure

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Coolant Injection (HPCI) pumps which will then permit pump vibration to be measured in units of displacement amplitude. Consequently, once this modification is completed, Relief Request GPRR-1 will no longer be needed for the HPCI pumps. Relief Request GPRR-1 will still be needed for the HPCI booster pumps. The enclosed revised GPRR-1 replaces the phrase "All pumps in the IST Program" with a list of each pump by number, with the exception of the HPCI pumps. In addition, an editorial change has been made to the "Basis for Relief" section of GPRR-1. Both of these changes are considered to be administrative and therefore do not require prior NRC approval.

Relief Request GPRR-2 grants relief from measuring pump bearing temperature on the basis that pump/bearing mechanical condition is being determined using the vibration monitoring program, and that vibration is measured in units of velocity. This Relief Request also applies to all pumps in the IST Program. In the enclosed revision to GPRR-2 we propose to delete the specific reference to velocity measurement. The reason for this proposed deletion is that velocity measurement will no longer be necessary for the HPCI pumps once a modification is completed which will allow measurement of displacement amplitude. This proposed Relief Request will not be implemented until it is approved by the NRC. Once Modification 5344 is complete, we will continue to measure HPCI pump vibration velocity in addition to measuring displacement amplitude until the proposed revision to GPRR-2 is approved.

If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

G. J. Beck, Manager
Licensing Section

Enclosures

cc: T. T. Martin, Administrator, Region I, USNRC
J. J. Lyash, USNRC Senior Resident Inspector, PBAPS

RELIEF REQUEST NO. GPRR-1, REVISION 1

Pump(s):

0A(B,C,D)P060
00P186
0A(B)P057
0A(B)P163

20P033	30P033
20P036	30P036
2A(B,C,D)P035	3A(B,C,D)P035
2A(B,C,D)P037	3A(B,C,D)P037
2A(B)P040	3A(B)040
2A(B,C,D)P042	3A(B,C,D)P042

Testing Requirement(s): Measure vibration amplitude displacement quarterly (IWP-4500)

Basis for Relief: ASME Section XI requires pump vibration measurement in displacement amplitude, (peak-to-peak composite), to be taken during each inservice test. Although not identified by Section XI, vibration can also be accurately measured using vibration velocity measurements. The criteria for vibration measurement is not sensitive to or dependent on pump speed and provides an absolute value for acceptable limits on vibration. In addition, this technique is an industry accepted method which is sensitive to vibrational changes that are indicative of developing mechanical problems. Velocity measurements provide an acceptable predictive tool to detect changes in the vibration that indicate a mechanical problem.

Since Section XI does not address vibration velocity measurement, methods for testing and acceptance criteria will be in accordance with ANSI/ASME OM, Part 6 - 1987/1987A.

Alternate Testing: Pump vibration measurements will be in vibration velocity (in/sec). Acceptance criteria from ANSI/ASME OM, Part 6 - 1987/1987A is summarized in Table 1 below.

Table 1: Vibration, Velocity (in/sec), Acceptance Criteria*

	Acceptable Range	Alert Range	Required Action
Vertical and Horizontal Centrifugal Pumps (≥600 RPM)	0-2.5V_r or 0-.325 in/sec	>2.5V_r, -6V_r or >.325-.7 in/sec	>6V_r or >.7 in/sec

*Note: The most limiting of the two ranges given is applicable.

	Acceptable Range	Alert Range	Required Action
Positive Displacement Pumps	0-2.5V_r	>2.5V_r	>6V_r

V_r = Vibration Reference Value

RELIEF REQUEST NO. GPRR-2, REVISION 1

Pump(s): All pumps in the IST Program

Testing Requirement(s): Measure bearing temperature annually (IWP-3300)

Basis for Relief: The measuring of bearing temperatures along with vibration monitoring are both means of determining the mechanical condition of a pump. However, in order for bearing temperature measurements to be useful, continuous monitoring would be required. The rise in temperature due to bearing degradation is a very sudden occurrence which is much more detectable in its early stages by utilizing vibration monitoring. Serious degradation would have to occur to cause a detectable rise of temperature on the bearing housing. Vibration monitoring is a more logical means of detecting bearing degradation prior to an increase in temperature.

Alternate Testing: Pump/bearing mechanical condition will be determined using the vibration monitoring program. Bearing temperature will not be measured.

IST TABLE - PUMPS
PEACH BOTTOM ATOMIC POWER STATION - UNIT 2 & COMMON

PUMP NAME OR DESCRIPTION	PUMP ID. NO.	P&ID	COORD.	TEST PARAMETERS	RELIEF REQUEST	REMARKS
EMERGENCY SERVICE WATER BOOSTER	0AP163	M-330(SHT 1)	E-6	Pi, D/P, V, Q, L/P	GPRR-1, GPRR-2, GPRR-3	
EMERGENCY SERVICE WATER BOOSTER	0BP163	M-330(SHT 1)	D-6	Pi, D/P, V, Q, L/P	GPRR-1, GPRR-2, GPRR-3	
HIGH PRESSUE COOLANT INJECTION (HPCI) MAIN PUMP	2[illegible]038	M-366(SHT 1)	F-6, 7	N, Pi, D/P, Q, V, L/P	GPRR-2	
HIGH PRESSURE COOLANT INJECTION (HPCI) BOOSTER PUMP	2DP033	M-366(SHT 1)	F-6, 7	N, Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
HIGH PRESSURE SERVICE WATER (HPSW)	2AP042	M-315(SHT 1)	A-7	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
HIGH PRESSURE SERVICE WATER (HPSW)	2BP042	M-315(SHT 1)	A-5	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
HIGH PRESSURE SERVICE WATER (HPSW)	2CP042	M-315(SHT 1)	A-6	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
HIGH PRESSURE SERVICE WATER (HPSW)	2DP042	M-315(SHT 1)	A-4	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
REACTOR CORE ISOLATION COOLING (RCIC)	2DP036	M-360(SHT 1)	E-7	N, Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
RESIDUAL HEAT REMOVAL (RHR)	2AP035	M-361(SHT 1)	A-5	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
RESIDUAL HEAT REMOVAL (RHR)	2BP035	M-361(SHT 2)	C-5	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
RESIDUAL HEAT REMOVAL (RHR)	2CP035	M-361(SHT 1)	B-5	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	

IST TABLE - PUMPS
PEACH BOTTOM ATOMIC POWER STATION - UNIT 3

PUMP NAME OR DESCRIPTION	PUMP ID. NO.	P&ID	COORD.	TEST PARAMETERS	RELIEF REQUEST	REMARKS
CORE SPRAY (CS)	3AP037	M-362(SHT 2)	D-6	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
CORE SPRAY (CS)	3BP037	M-362(SHT 2)	D-3	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
CORE SPRAY (CS)	3CP037	M-362(SHT 2)	D-4	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
CORE SPRAY (CS)	3DP037	M-362(SHT 2)	D-2	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
HIGH PRESSURE COOLANT INJECTION (HPCI) MAIN PUMP	3DP038	M-366(SHT 4)	F-7	N, Pi, D/P, Q, V, L/P	GPRR-2	
HIGH PRESSURE COOLANT INJECTION (HPCI) BOOSTER PUMP	3DP033	M-366(SHT 4)	F-7	N, Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
HIGH PRESSURE SERVICE WATER (HPSW)	3AP042	M-315(SHT 3)	B-7	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
HIGH PRESSURE SERVICE WATER (HPSW)	3BP042	M-315(SHT 3)	B-5	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
HIGH PRESSURE SERVICE WATER (HPSW)	3CP042	M-315(SHT 3)	B-6	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
HIGH PRESSURE SERV CE WATER (HPSW)	3DP042	M-315(SHT 3)	B-4	Pi*, D/P, Q, V, L/P	GPRR-1, GPRR-2	*CALCULATED INLET PRESS. (TEXT 5.1.1).
REACTOR CORE ISOLATION COOLING (RCIC)	3DP036	M-360(SHT 2)	E-7	N, Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	
RESIDUAL HEAT REMO (RHR)	3AP035	M-361(SHT 3)	A-5	Pi, D/P, Q, V, L/P	GPRR-1, GPRR-2	