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June 11, 1982

Docket Nos. 50-277
50-278

Mr. John F. Stolz, Chief
U.S. Nuclear Regulatory Commission
Operating Reactors Branch #4
Division of Licensing
Washington, DC 20555

SUBJECT: Peach Bottom Atomic Power Station, Unit 2 and 3 NRC Request for Additional Information on the Peach Bottom ISI Program

Ref.: Letter from J. F. Stolz (NRC) to E. G. Bauer, Jr., (PECo.), dated March 5, 1982

Dear Mr. Stolz:

In response to the referenced letter requesting additional ISI information unique to the Peach Bottom Atomic Power Station, Philadelphia Electric Company (PECo.) submits the following:

Item #1. Section 1.1, Page 1-1 (Ref. 4)

NRC Question

(a) "Is it intended that Reference 4 (Revised Inservice Inspection Program Unit 2 and Common Plant November 22, 1978) also serve as the revised ISI program for Unit 3."

(b) If not, does PECo. plan to respond to Reference 3 (NRC Request for Additional ISI Information for PBAPS Units 2

A001

and 3, August 10, 1978) in the form of a revised ISI program for Unit 3."

PECo. Response

It is Philadelphia Electric Company's intent that the proposed revisions to the ISI program submitted on November 22, 1978 apply to both Unit 2 and Unit 3. The applicability of these proposed revisions to both units was formally requested in a September 26, 1979 letter (J. W. Gallagher, PECo., to T. A. Ippolito, NRC). The suggested wording of the requested revisions is identical for both units. The only differences involve the unit prefix to the pump identification numbers in Table 5.2-1, and several variations in paragraph identification numbers. These differences apply only to the inservice testing of pumps and valves which we understand is still pending NRC staff review and is not addressed in you March 5, 1982 letter. It is our suggestion that we submit revised pages to correct these minor deviations following NRC acceptance of the proposed revisions, or during the 10 year ISI program update due to be submitted in early 1984.

Item #2. Section 2.1, Paragraph 2-1 (Ref. 4); Item 1, Paragraph 2 (Ref. 3)

NRC Question

(a) "Pursuant to IWB-1220(b), show that under postulated conditions. . .and the make up system is using onsite power."

(b) "Please identify the components and lines and the number of welds involved in this exemption."

PECo. Response

(a) The Peach Bottom Inservice Inspection Program exempted from examination components and piping containing water, two inches in diameter and smaller, and components and piping containing steam, three inches in diameter and smaller. This program was written to comply with ASME Section XI, 1974 edition up to and including the Summer, 1974 addenda. The exemption sizes were based on the

ability to make up reactor coolant with normal make up systems and coolant inventory. The exemption sizes are also consistenc with those specified in earlier editions of ASME Section XI. Our submittal to the NRC of November 22, 1978 explained the exemption size on the same basis. Both the program and the latter submittal assumed the use of the feedwater system; this is not consistent with ASME Section XI Article IWB-1000, footnote 5 of the 1974 edition which calls for the make up systems to use onsite power.

The only systems which could be considered as normal make up using onsite power are RCIC and CRD. The combined flow to the RPV from these systems is in excess of 800 gpm. With this flow available, a failure of a 3 inch steam line or a 1 1/2 inch water line could be accommodated with the plant at normal operating pressure of 1005 psig. This is based on a critical flow for saturated water of 8000 lbm/sec ft2 and 2000 lbm/sec ft2 for saturated steam both at operating conditions. We will revise our inservice inspection program to exempt from inspection, water piping 1 1/2 inches in diameter and less. The exemption diameter for steam will remain at 3 inches.

In our program revision, we will itemize the piping lines which will now be inspected using the new exemption size for water lines. Below the 1 1/2" size, the preponderance of piping consists of 1" instrument lines servicing a large number of instruments.

(b) Attachment "A" to this letter identifies the Class I exempt components, description of the lines and the number of welds involved.

Item 3. Paragraph 2-10 (Ref. 4), Relief Request re. Reactor Circulation Pumps

NRC Question

(a) "Has ultrasonic wall thickness been considered as an alternate examination?"

(b) "What are the manufacturer's recommendations regarding the disassembly of the pumps for regular maintenance?"

(c) "Based on the industry experience with the pumps, what is the likelihood that the Peach Bottom Plant will operate ten years without at least one pump being disassembled in each unit for maintenance?"

PECo. Response

(a) To date ultrasonic (UT) wall thickness measurements have not been considered. This may be a practical alternative approach of monitoring the pumps pressure retaining boundary integrity. However, consideration must be given to high radiation levels at the pump and the great amount of time expended removing and installing the Mirror insulation.

(b) Our review of the manufacturer's (Byron Jackson) pump manual revealed there is no suggested disassembly program.

(c) Peach Bottom is approaching the end of its first ten years of commercial operation (Unit 2 - 7/5/84) and (Unit 3 - 12/24/84) and the continued reliable operations of our pumps deem it unlikely that any one will have to be disassembled, other than that amount of disassembly required for pump seal maintenance.

Item #4. Paragraph 2-11 (Ref. 4), Item 3, Paragraph 2 (Ref. 3), Relief Request re. Class 1 Valves Exceeding 4 Inches

NRC Question

(a) "Has ultrasonic wall thickness measurement been considered as an alternate examination?"

PECo. Response

Our November, 1977 revised ISI Program submittal stated, "A volumetric examination of the valve body will be considered as an alternate." We suggest that this statement be clarified by the following proposed program:

An alternative examination program would consist of UT wall thickness readings on selected valves. The number of valves to be examined will be based on Section XI requirements.

Item #5. Paragraph 3-7 (Ref. 4), Relief Request re. Classification of Main Steam Lines Outside the Outermost Containment Isolation Valves

NRC Question

(a) "Please identify the lines, and list sizes and number of welds involved in the relief request."

(b) "Give a more detailed justification for not performing the examination which would be required if lines remained classified as ASME Class 2."

PECo. Response

(a) Attachment B to this letter identifies the main steam lines outside the outermost containment isolation valves, the line size and the number of welds involved.

(b) In our original and revised program submittals (specifically Paragraph 3.4.1.3), we state that "there is no need to classify the Peach Bottom main steam lines as Class 2 (equivalent) for purposes of ISI".

Conclusive justification for the position was also included.

Additionally, the following provides a more detailed justification for not performing the type of inspection required of ASME Class II piping:

(1) Physical access to welds in subject lines is not readily available. Scaffolds and platforms of significant size would have to be erected. Both dollar costs and radiation exposure would be significant.

(2) The as-built weld configuration in subject lines are not conducive to a UT examination (our presently employed volumetric inspection technique). Weld crowns would have to be extensively re-worked, again at a significant dollar and radiation exposure cost, to facilitiate UT examinations. In addition, the alternative radiographic technique for volumetric examination could not be employed because of the vast amount of routine maintenance work that is performed in the surrounding areas.

(3) The piping material is mild steel and our records show that the same Class 1 piping at Peach Bottom has experienced no reportable indications during past inservice inspections. We know of no structural integrity problems or reports of failure in mild steel (main steam line) piping throughout the BWR Industry.

(4) The main steam lines at Peach Bottom were not designed to withstand the loading resulting from the hydrostatic pressure test that would be subjected to for Section XI purposes.

Item #6. Program Interval, Paragraph 2-2 to 2-9 (Ref. 4), Examinations Planned

NRC Question

(a) "Does this result in any changes PECo. wishes to make in the relief requests?"

(b) "Does PECo. require other ISI relief?"

PECo. Response

The PECo. submittal dated November 22, 1978 requested adjustments in the Inservice Testing of Pumps and Valves Program. Additionally, adjustments were requested in correspondence dated September 26, 1979, (J. W. Gallagher, PECo. to T. A. Ippolito, NRC) and dated February 19, 1980, (S. L. Daltroff, PECo. to T. A. Ippolito, NRC). Resolution

of these requests would avoid possible confusion regarding the implementation requirements of the ISI Program.

Based on our recent review of the PBAPS ISI Program, no further changes assuming approval of the above requests have been identified.

If any further information is required to complete your review, please do not hesitate to contact us.

Very truly yours,

Enclosure

ATTACHMENT A

Identification of Class I Exempt Components

System 2: Main Recirculation

2 DCN-3/4" (Recirc. Sample Line) from SE2717 through Valve #306 to D/W Penetration #N-41 to Valve #AO-2-2-40

(25 welds)

System 3: Control Rod Drive

3-Sch. 80SS-1", 3/4" (42-1" diameter insertion lines and 42-3/4" diameter withdraw lines) D/W, from CRD housings to sub-pile room through D/W Penetration #N-37A and #N-38A, north isolation valve room to individual hydraulic control units

(588)

System 4: Reactor Vent and Drain

4 DCN-1" (RPV Flange Leak Off) from RPV Penetration #N-13 to Mark 984.

(52)

System 6: Feedwater

6 DDNL-1" (2-6-28A check valve test connection) from Valve #28A through Valve #94A to Valve #95A

(4)

6 DDNL-1" (MO-2-6-29A drain) from Valve #29A through 2-1" MK-111 valves

(4)

6 DDNL-1" (2-6-28B check valve test connection) from Valve #28B through Valve #94B to #95B.

6-DDNL-1" (MO-2-6-29B drain) from Valve #29B through 2-1" MK-111 valves.

(4)

System 10: Residual Heat Removal

10 DE-1" (AO-2-10-46A test connection) around AO-2-10-46A, includes Valves #78A and #79A.

(8)

10 DE-1" (AO-2-10-46B test connection) around AO-2-10-46B, includes Valves #78B and #79B.

(8)

10 DCN-3/4" (pump supply line test connection) in Rx building from line 10 DCN-20" through Valves #84 and #85.

(4)

System 11: Standby Liquid Control

11 DCN-1 1/2" (invection line to RPV) from RPV Nozzle #N-10 to Valve #18, check valve #17 through D/W Penetration #N-42 to and including check valve #16.

(20)

11 DCN-3/4" (test connection of isolation valves) Rx building, west side of Valve #16 from 11 DCN-1 1/2" through Valves #36 and #37.

(4)

System 12: Reactor Water Clean-up

12 DCN-1" (instrument line) in D/W, from 12 DCN-6" through RO-2-12-125A, D/W Penetration #50D, Valves #67A and #66A

(36)

12 DCN-1" (instrument line) in D/W, from 12-DCN-6" through RO-2-12-125B, D/W Penetration #50E, Valves #67B, and #66B

(30)

System 13: Reactor Core Isolation Cooling

13 DBN-1" (steam supply drain) from 13 DBN-3" line (near MO-2-13-15) in D/W to 1 DBN-3" line (near MO-2-1-74)

(11)

13 DBN-1" (steam supply to turbine test connection) outboard MSIV room, from 13 DBN-3", includes Valves #46A and #47A

(5)

13 DCN-1" (instrument line) from 13 DBN-3" to condensing chamber includes RO/MK-1 through D/W Penetration #50B in Rx building, southeast corner of torus compartment, through Valve #54A to Valve #55A

(32)

13 DCN-1" (instrument line) sames as above except D/W Penetration #50C, Valves #54B and #55B.

(32)

13 DCN-3/4" (AO-2-13-22 test connection) outboard MSIV room, around AO-2-13-22 includes Valves #43 and #44, 3/4" MK-111 valve

(4)

System 14: Core Spray

14 DCN-1" (AO-2-14-13A test connection) D/W around AO-2-14-13A, includes Valves #74A and #75A

(6)

14 DCN-1" (AO-2-14-13B test connection) ditto above A --- B

(6)

14 DCN-1" (instrument line) D/W, from 1¢ DCN-12", includes RO/MK-1, through D/W Penetration #N-32F in Rx building, southeast corner of torus compartment, through Valves #30A and #31A

(28)

14 DCN-1" (instrument line) ditto above except #N-32E, Valves #30B and #31B

(24)

System 23: High Pressure Coolant Injection (HPCI)

23 DBN-1 1/2" (steam supply drain) from 23 DBN-10" in D/W to 1 DBN-3" line

(16)

23 DBN-3/4" (MO-2-23-15 drain) D/W, from Valve #15 to 23 DBN-1 1/2"line

(4)

23 DBN-3/4" (steam supply to turbine test connection) north isolation valve room, includes Valves #27A and #28A

(4)

23 DBN-3/4" (AO-2-23-18 test connection) ditto except Valves #26 and #29

(4)

23 DCN-1" (instrument line) D/W, from 23 DBN-10" to condensing chamber, includes RO/MK-1, through Valve #35A to #37A

(30)

23 DCN-1" (instrument line) ditto except Penetration #N-34F, Valves #35B to #37B

(30)

NOTE: Number of welds in each classification are shown in parentheses.

ATTACHMENT B

Identification of Main Steam Lines Outside the Outermost Containment Isolation Valves (Sizes and Numbers of Welds)

| | | | | |
|---|---|---|---|---|
| 1 DB 26"A | Valve | AO/86A | MSV-1 | (22) |
| 1 DB 26"B | Valve | AO/86B | MSV-2 | (21) |
| 1 DB 26"C | Valve | AO/86C | MSV-3 | (20) |
| 1 DB 26"D | Valve | AO/86D | MSV-4 | (22) |

7 DB 18" Turbine steam by-pass lines from
7 DB-14" 1 DB26, A, B, C, D (23)

1 DB-6" RFP turbine HP steam supply from
1 DB 26A, B, C, D (10)

NOTE: Number of welds in each classification are shown in parentheses