

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4500

V. S. BOYER

SR. VICE PRESIDENT
NUCLEAR POWER

May 16, 1984

Docket Nos. 50-277
50-278

Mr. Darrell G. Eisenhut
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Peach Bottom Atomic Power Station
Fire Protection Modifications Progress Report

REFERENCES: (1) Letter from J. W. Gallagher to
D. G. Eisenhut, dated February 25, 1983
(2) Letter from V. S. Boyer to D. G. Eisenhut
dated December 2, 1983

Dear Mr. Eisenhut:

Philadelphia Electric Company, in the reference (1) letter, proposed to submit Peach Bottom's Fire Protection Modifications Progress Report every four months, starting in May, 1983. In the reference (2) letter, the Licensee discussed the final penetration seal test reports received from Factory Mutual Research.

This letter includes: (I) the Fourth Modifications Progress Report issued to you (Attachment 1); (II) a copy of each final Penetration Seal Test Report forwarded to us by Factory Mutual Research (Attachment 2); (III) an update on the penetration sealing program; (IV) a schedule exemption request for certain dampers in our HVAC damper upgrade program; (V) a schedule commitment for alternative shutdown; and (VI) a discussion of our safe shutdown instrumentation program.

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I. Modifications Progress Report (Attachment 1)

A comparison of the attached Modification Status Report and the previous Modification Status Report, dated January 16, 1984, reveals that twelve (12) estimated commitment dates of March 15, 1984, as established in the reference (2) letter, have been changed. Six (6) were changed to "2-EOO" and six (6) were changed to "next system outage of sufficient duration". These changes were forced by outage requirements or design delays for cable encapsulation and rerouting work (as indicated in the previous Modification Status Report, dated January 16, 1984.) Most of the completion date slippage involves only short lengths of conduit leading to and including terminal boxes.

II. Factory Mutual Research Penetration Seal Test Reports (Attachment 2)

1. Wall Test - May 23, 1984
2. Wall Test - November 3, 1983
3. Floor Test - November 4, 1983

III. Penetration Seal Upgrade Program - III.M

A. No. 2 Unit Control Room Floor Penetration Seals

The Alternative Shutdown Proposal submitted to the Commission and approved in a Safety Evaluation Report dated January 26, 1984, uses a safe shutdown method bypassing the Control Room and Cable Spreading Room. These rooms were previously separate fire areas. We have now combined these fire areas into one area with different zone identifications. Therefore, since we have redefined these fire areas as being common, we do not plan to upgrade the control room floor penetration seals based on the following:

1. The Cable Spreading Room is protected by area smoke detection and an automatic carbon dioxide system.
2. The Control Room is continuously manned. Although approximately 335 existing seals have material of thicknesses which have not been tested to qualify for a 3-hour fire rating, all these seals provide a gas-tight seal. In addition, in many of these cases, some minimum depth of grout is included. The limited fire resistance of the existing floor

penetration seals will allow time for operator action.

3. Safe Shutdown would be accomplished from the same alternative shutdown panels, whether a fire caused evacuation of the Control Room or cable damage in the Cable Spreading Room.
4. Removal of existing material, such as grout from inside conduit, could jeopardize the integrity of the cable. (Most of the material removed on Unit 3 was polyurethane foam which was not as severe a removal problem as grout).

B. No. 3 Unit Seal Upgrade Schedule

On June 1, 1984, we expect approximately 3492 of 3545 penetration seals to be completed. The projected 53 incomplete seals are located in 31 barriers in 23 different rooms and have the following restraints:

1. Penetrations containing 4kv and 13kv cable

The voltage is sufficiently high to prevent a safe work environment while the unit is operating. The cable in the unsealed penetrations cannot be de-energized while the unit is operating.

2. Penetrations contain circuitry associated with safety-related equipment which if disturbed could interrupt plant operation. The equipment associated with the circuitry in these penetrations cannot be taken out of service without affecting plant operation.

3. Penetrations located in areas of extremely high radiation

The upgrading of penetrations in these areas while the unit is operating would create a significant ALARA concern for the individuals involved. Therefore, station Health Physics personnel have prohibited work in these areas until the unit is not operating.

4. Penetrations associated with fire dampers as described in Section IV of this letter. The

annular regions external to the HVAC ducts in question will be sealed after the installation of the fire dampers.

The above uncompleted penetrations will be upgraded as soon as safe access to the penetrations is possible. These penetrations will be sealed during outages of sufficient duration to encompass the access, blocking and installation requirements. As fire dampers are installed, the associated penetration seals will also be completed.

- C. The balance of uncompleted seals on No. 2 Unit will be finished by the end of the refueling outage.

IV. HVAC Damper Program - III.M

The procurement and installation program to install 3-hour qualified dampers in ventilation ducts penetrating safe shutdown fire barriers is continuing. As a result of resurveys of existing ductwork and dampers the number of dampers to be installed is now approximately 90; 24 in No. 2 Unit, 22 in No. 3 Unit, and 44 in common systems. Sixty-five have been purchased. Damper installation has been very difficult. Several reasons for the damper installation difficulties are:

1. Unforeseen problems with contamination of ductwork has almost doubled installation time. Ductwork which serviced very low level radiation areas has become slightly contaminated over the years. Work in some of these ducts now requires not only Anti-C clothing but also the use of portable HEPA filter units and enclosures around the work area.
2. The increase in damper installation time has necessitated reevaluation of critical equipment HVAC outages to verify that sufficient cooling is provided to assure continued equipment operation/availability. In some cases, portable ventilation equipment is necessary.

3. Similarly, our evaluations have revealed that outages are required for several areas because we can not assure critical equipment availability during operation without ventilation to that equipment. Two unit outages are necessary in some common areas.

We expect 5 dampers to be installed by the end of this month and are proceeding as quickly as station operating conditions allow. We expect increased productivity as installers become more familiar with the specific damper installation practices required.

Therefore, we hereby request, pursuant to the requirements of 10CFR50.12 an exemption from our previously transmitted completion schedule of June 1, 1984. Our proposed schedule would be to complete No. 3 unit damper installations by September 15, 1984. No. 2 Unit and Common damper installations will be complete by the end of the ongoing No. 2 unit refueling outage. Those Unit 3 and common dampers requiring an outage will be completed during outages of sufficient duration to allow access, blocking and installation.

V. Alternative Shutdown - III.L

A number of alternative shutdown modifications have been defined for each unit as well as for common plant systems. These modifications have not yet been itemized on the attached PBAPS Fire Protection Modification Progress Report because PECO is still awaiting the issuance by the NRC of a revised Safety Evaluation Report on the September, 1983, submittal. Unit 3 alternative shutdown modifications are scheduled to be completed by the end of the 1985 Unit 3 refueling outage. Unit 2 alternative shutdown modifications are scheduled to be completed by the end of 1986 Unit 2 refueling outage. The common plant systems (Diesel Generator Controls and Emergency Service Water System Controls) will be completed on the 1986 Unit 2 refueling outage. Consequently, alternative shutdown capability will not be available on either unit until the conclusion of the 1986 Unit 2 refueling outage.

VI. Safe Shutdown - III.G

The June 1982 submittal provided design criteria to protect instrumentation cables for the process parameters. When the

decision was made to install an alternative shutdown system, the work on the instrumentation rerouting was deferred due to different readout locations required for alternative shutdown. The work has now been re-initiated to provide sufficient information at both the alternative control stations and in the Main Control Room to safely shutdown the plant. We are presently planning to include the applicable process parameters as defined in Attachment 1 to Information Notice 84-09. For Peach Bottom, these process parameters are:

- a) Reactor water level
- b) Reactor pressure
- c) Suppression pool water level
- d) Suppression pool temperature
- e) Containment pressure
- f) Condensate storage tank water level
- g) In addition, diagnostic instrumentation (i.e., pressure or flow) will indicate the status of the following systems in the control room:
 - 1) Reactor Core Isolation Coolant (RCIC)
 - 2) High Pressure Coolant Injection (HPIC)
 - 3) Core Spray (CS)
 - 4) Residual Heat Removal (RHR)
 - 5) High Pressure Service Water (HPSW)
 - 6) Emergency Service Water (ESW)

Diagnostic instrumentation will indicate the status of the HPCI, RHR, HPSW, and ESW at the alternative control facility. The diagnostic instrumentation will be available at the appropriate local control panel location whenever its respective system is required for safe shutdown.

The identification of system and process parameter cables and the location of those cables has been completed. To protect cables associated with the instrumentation necessary for safe shutdown, rerouting and/or encapsulation of a portion of these cables will be necessary. Modifications (MODs 1029E, 1352B&H, 1353B&H) have been initiated to identify exactly which cables will be rerouted or encapsulated and modify them as necessary. Status of rerouting and/or encapsulation of these cables will be provided in the next submittal of the Peach Bottom Fire Protection Modification Progress Report planned to be submitted by September 17, 1984.

Mr. Darrell G. Eisenhut

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If you have any questions, please do not hesitate to
call.

Very truly yours,

V. L. Boyer

Attachments

cc: A. R. Blough, Site Inspector

PBAPS Fire Protection Mod Progress Report

Revised to Account for Proposed Alternative Shutdown System
(Does not Include Alt. SD Mods)

(This Report Supersedes the January, 1984, Report)

Key: 2-EOO means "Unit 2 - End of Next Refueling Outage"
N/A - Not Applicable

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Reroute ZD2Q1024K and ZD2Q1027B then encapsulate in Fire Zone 4-4C.	Design complete for reroutes. Outage work. No encapsulation necessary.	2-EOO	1029B
Encapsulate 4 raceways in Fire Zone 4B.	Raceways are now defined for ADS/CS and no encapsulation is necessary.	N/A	
Encapsulate 3 raceways in Fire Zone 4-4C - ZA2D855 ZA2M001, ZA2D417	Encapsulation complete except for a short section of ZA2M417 delayed due to design difficulties and short sections of ZA2M001 and ZA2D855 associated with Junction Boxes. Encapsulation of Junction Boxes is outage work due to blocking requirements.	2-EOO	1029A
Reroute ZD2Q1024K in Fire Zones 6-5E and 6-5G.	Design complete. Outage work.	2-EOO	1029B
One tray and 3 conduits need to be encapsulated in Fire Zone 11-12B.	Raceways are now defined for ADS/CS and no encapsulation is necessary.	N/A	

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Fix ZA3Q1827A (reroute in Fire Zone 11-12C).	Complete	Completed	1029B
Encapsulate ZB3M002 in Fire Zone 11-12C.	Complete	Completed	1029A
Encapsulate ZB3Q1794A, B in Fire Zones 13-13D and 13-13G.	Encapsulation of cable not necessary due to alternative shutdown system and exemption request for torus area.	N/A	
Encapsulate 7 cables in Fire Zones 11-60 and 11-63.	Raceways are now defined for ADS/CS and no encapsulation is necessary.	N/A	
Encapsulate cables ZA3Q1018B, C in Fire Zone 2-62.	Raceways are now defined for ADS/CS - and no encapsulation is necessary.	N/A	
Encapsulate 4 cables in Fire Zones 11-65A, B, C and 72D.	Raceways are now defined for ADS/CS and no encapsulation is necessary.	N/A	
Encapsulate ZA2M417; ZB3D002 in Fire Zone 11-75.	Complete	Completed	1029A
Encapsulate several 4kV power feeds in Fire Zones 78A, B, E and Fire zone 114.	Conduits are installed within permanent plant walls in this area. No encapsulation is necessary.	N/A	

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate conduits ZA2B1249, ZC2B1247 and ZA2B143 in Fire Zone 50-78A	Encapsulation complete for ZA2B143. ZA2B1249 and ZC2B1247 must be rerouted before encapsulation. This is outage work.	2-EOO	1029A
Encapsulate conduits ZC3B137, ZC3B150 and Junction Box J17 in Fire Zone 50-78A.	Complete	Completed	1029A
Encapsulation 1/2 SSA raceways in Fire Zone 50-78B.	Complete except for short sections associated with Junction Boxes. Encapsulation of Junction Boxes is outage work due to blocking requirements.	2-EOO	1029A
Encapsulate several 4kV conduits in Fire Zone 50-82	No longer necessary due to safe shutdown strategy change.	N/A	
Encapsulate conduit ZA3D001 in Fire Zone 30-117.	No longer necessary due to safe shutdown progress.	N/A	
Encapsulate ZB3D1802A, B and ZD3DD01E in Fire Zone 31-118.	Complete	Completed	1029A
Encapsulate ZD3DD01E in Fire Zone 32-119.	Complete	Completed	1029A
Relocate battery chargers 3BD03 & 3DD03, then encapsulate ZB3BD01E in Fire Zone 32-120.	Complete	Completed	1029C 1029A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate ZB3B1114A and ZD3DD01E in Fire Zone 33-120.	Encapsulation of cables not required due to new safe shutdown strategy and field survey results.	N/A	
Encapsulate cable OG05H in Fire Zone 11-147.	Encapsulation no longer necessary due to safe shutdown strategy change.	N/A	
Encapsulate OG03H and ZA2AG121B in Fire Zone 35-122.	Encapsulation in progress for ZA2AG121B. Complete for OG03H.	2-EOO	1029A
Redesign 2A1706R - encapsulate OG03H and ZA2AG121B in Fire Zone 37-124.	Outage work complete. Encapsulation in progress for ZA2AG121B. Complete for OG03H.	2-EOO Outage work completed.	1029A
Redesign 2A1603R - encapsulate ZB2BD01E in Fire Zone 32-125.	Complete	Completed	1029D 1029A
Relocate battery charger 2DD03, then encapsulate related cables in Fire Zone 39-126.	Design complete. Outage work. Field survey in progress for encapsulation.	2-EOO	1029C 1029A
Encapsulate ZB2BD01E, ZB0B6143C and ZB2B1122A in Fire Zone 39-126.	Encapsulation unnecessary due to new safe shutdown strategy and field survey results.	N/A	
Encapsulate ZA2A1505A in Fire Zone 40-127.	Complete	Completed	1029A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate ZB2D1802A, B and ZB2BD01E in Fire Zone 41-128.	Complete	Completed	1029A
Encapsulate ZA2B1249, ZA2B143 and ZC2B1247 in Fire Zone 50-130.	To be rerouted to allow encapsulation.	2-EOO (Due to the high level of radiation during operation in Fire Zone 130 and the length of the runs of ZA2B1249 and ZC2B1247 (250 feet), this modification must be done during an outage.)	1029A
Redesign cables 2A1603J, K, L, 2A1706J, K, L - in Fire Zones 43-132, 44-133, 45-134 and 46-135 as required.	Complete	Completed	1029D
Encapsulate ADS/CS raceways in Fire Zone 11-147.	Complete	Completed	1029A
Upgrade penetration seals to required ratings as previously committed in correspondence from J. W. Gallagher to D. G. Eisenhut, dated 10/14/81.	Approximately 5500 seals are complete of an estimated 7200 total. 55 seals will remain on Unit #3 (see body of letter). Remainder are No. 2 Unit to be complete by end of outage.	6/1/84 for Unit #3 except for outage seals. 2-EOO	1110
Change the settings on the following 4kV circuit breakers: Unit 2-152-1505, 152-1705, 152-1806; Unit 3-152-1505 ... 152-1806.	Complete in Unit 3. Unit 2 design complete.	3-Completed 2-EOO	2-1029G 3-1029H

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Change the settings on the 480V load center circuit breakers: Unit 2-1013 ... 1322; Unit 3-1212 ... 1114.	Complete in Unit 3. Awaiting Unit 2 outage. Design complete.	3-Completed 2-EOO	3-1029H 2-1029G
Replace the following 480V motor control center magnetic-only circuit breakers with thermal magnetic circuit breakers: Unit 2-3671 ... 2851; Common-4955, 5055, 6131, Unit 3-3851 ... 6033. (As previously committed to in correspondence from S. L. Daltroff to D. G. Eisenhower, dated January 12, 1983.)	Qualification of motor control centers which house breakers is complete. PECO is working with Westinghouse in order to obtain qualified breakers.	First refueling outage or planned outage that lasts at least 60 days, commencing after 6/1/84. Breakers still not qualified.	2-1029J, Common-1029K, 3-1029L
Add new ground overcurrent relays to the following 4kV circuit breakers: Unit 2-152-1606 and 152-1709.	Design complete. Relays available.	2-EOO	1029M
Replace the existing ground overcurrent relays for the following 4kV circuit breakers: Unit 2; 152-1606 and 152-1704.	Design complete. Relay order being expedited.	2-EOO	1029N
Add eight-hour battery power supply capability to the Emergency Lighting System in the following locations: Main Control Room, Remote Shutdown Panels, Cable Spreading Room (selected locations), Four Emergency Switchgear Rooms, HPSW Pump bays and the fifth bay in the DG Building.	Complete (Alternative shutdown system design will add additional areas.)	Completed	1029R
Provide a water curtain in the west corridors of reactor building, elev. 135; Units 2 and 3.	Complete	Completed	1029U

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
System Automation of Water Curtain in the West Corridors of reactor building.	Design in progress	2-EOO 3 - September 15, 1984	1029U
Isolate the corridor behind the emergency switchgear rooms.	Complete	Completed	1029S
Provide dikes for Emergency Load Centers on elevation 165, Units 2 and 3.	Complete	Completed	1029T
Provide smoke detectors in Fire Zones 50-78A and 50-82 since the zones have a fixed combustible loading and no existing smoke detection system.	Complete	Completed	1029W
Provide smoke detectors in Fire Zones 2-70, 11-72E, 11-72F, and 11-74 since the zones have a fixed combustible loading and no existing smoke detection system.	Complete	Completed	1029W
Provide line type heat detectors in cable tray in Fire Zone 29-108 since the area has a fixed combustible loading and no existing fire detection system.	Complete	Completed	1029W
Provide smoke detectors in Fire Zones 26-76 and 22-77 due to the possibility of transient combustibles in these zones.	Complete	Completed	1029W
Reroute conduit ZB2D785 outside of Fire Zones 50-78B and 50-78W.	Design complete. Outage work.	2-EOO (administrative controls will be provided after July 1, 1983, until completed)	1029B

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate ZA2A1506A in Fire Zone 50-131.	Complete	Completed	1029A
Encapsulate raceways ZA2M165 and ZA2M166 in the north half of Fire Zone 6-5H.	Encapsulation complete except for short sections associated with junction boxes. Encapsulation of junction boxes is outage work due to blocking requirements.	2-E00	1029A
Encapsulate raceway ZB3P315 in the south half of the Fire Zone 13-13H.	Encapsulation complete except for a short section associated with a junction box. Encapsulation of junction boxes is outage work due to blocking requirements.	Next system outage of sufficient duration.	1029A
Reroute 2Q1019B, F and encapsulate new Zone 5-5H.	Design in progress	2-E00	1029B
Encapsulate ZC2A1705A in Fire Zone 11-12C.	No longer necessary due to change in safe shutdown strategy.	N/A	
Reroute ZB2Q2074A, and encapsulate new raceway in Fire Zone 4-4C.	Design complete. (part of CS/ADS)	2-E00	1029B
Reroute ZA2B5944A from Fire Zone 11-72B.	Design in progress.	2-E00	1029B
Install a single smoke detector in the drywell access hatch areas of both units, Fire Zones 6-22 and 13-28.	Complete	Completed	1029W

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
The detectors are to be tied into existing loops on 135' of the Rx Bldgs.			
Encapsulate ZD2P219 in Fire Zone 4-6.	Complete	Completed	1029A
Encapsulate ZA2L075 in Fire Zone 5-7.	Complete	Completed	1029A
Encapsulate ZD3L004 in Fire Zone 12-15.	Complete	Completed	1029A
Install a single smoke detector in Fire Zone 11-65C. The detector is to be tied into the existing loop on 91'-6" of the Radwaste Bldg.	Complete	Completed	1029W
Install 90 3-hour rated fire dampers in HVAC ducts penetrating fire barriers.	58 dampers received. Design is 80% complete.	2-EOO 3 - September 15, 1984	1309

Modifications Identified after the September 16, 1983,
Alternative Shutdown Submittal

Install battery charger cross-tie feeds. These cross-tie feeds will be encapsulated as required.	Design complete.	2-EOO dependent upon equipment delivery.	1029B
Encapsulate ZA2M416 in Fire Zone 6-5H.	To be rerouted to avoid encapsulation requirements, design in progress.	2-EOO	1029A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate cable ZD2B3983A in Fire Zone 38-125.	Cable location dependent on battery charger 2DD03 relocation, requires an outage.	2-EOO	1029A
Encapsulate ZB3M149 and ZD3D489 in Fire Zone 32-119.	Encapsulation in progress for ZB3M149, ZB3D489 to be rerouted to avoid encap- sulation, design in progress.	2-EOO	1029A
Encapsulate ZB3M149 in Fire Zone 33-120.	Encapsulation in progress.	2-EOO	1029A
Relocate B and D Diesel Generator MCC feeds as identified in the body of the letter. These feeds will be encapsulated as required.	Design being investigated.	2-EOO	1029B
Encapsulate ZC3D481 and ZC3D482 in Fire Zone 34-121.	Encapsulation in progress.	2-EOO	1029A
Encapsulate ZA2D841 in Fire Zone 35-122.	Encapsulation in progress.	2-EOO	1029A
Encapsulate ZC3D481 and ZC3D482 in Fire Zone 36-123.	Encapsulation in progress.	2-EOO	1029A
Encapsulate ZA2D841 in Fire Zone 37-124.	Encapsulation in progress.	2-EOO	1029A
Encapsulate ZC2A484 in Fire Zone 48-144.	Complete	Complete	1029A
Reroute 5 cables in Fire Zone 6-5H - ZC2B3814A; ZC2Q1228A, B; ZC2Q1230B, C.	Design complete.	2-EOO	1029B
Reroute ZC2Q1228B and ZC2Q1230B in Fire Zone 6-5J.	Design complete	2-EOO	1029B

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Reroute 4 cables in Fire Zone 25-72A - ZC2Q1221B; ZC2Q1230B ZD3Q1227B; ZD3Q1229B	Unit 2 design complete. Unit 3 complete except for circuit switchover.	2-EOO 3 - Next system outage of sufficient duration.	1029B
Reroute 5 cables in Fire Zone 6-13H ZD3B3952A; ZD3Q1227A, B; ZD3Q1229B, C.	Complete except for circuit switchover.	3 - Next system outage of sufficient duration	1029B
Reroute ZD3Q1227B and ZD3Q1229B in Fire Zone 6-13J	Complete except for circuit switchover	3 - Next system outage of sufficent duration.	1029B
Reroute 12 cables in Fire Zone 28-78H (Cable Spreading Room)	Unit 2 design complete. Unit 3 complete except for circuit switchover.	2-EOO 3 - Next system outage of sufficient duration	1029B
Reroute 6 cables in Fire Zone 29-108 (Main Control Room)	Unit 2 design complete. Unit 3 complete except for circuit switchover.	2-EOO 3 - Next system outage of sufficient duration.	1029B
Install 2 addi- tional smoke detectors in Fire Zone 50-78A to provide area coverage.	Complete	Completed	1029W