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V. S. BOYER
SR. VICE PRESIDENT
NUCLEAR POWER

September 17, 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 September 16, 1983.
 - (3) Letter from V. S. Boyer to D. G. Eisenhut,
dated December 2, 1983
 - (4) Letter from V. S. Boyer to D. G. Eisenhut,
dated May 16, 1984

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.

This letter includes: (I) the fifth Modifications
Progress Report (Attachment 1); (II) an update of the penetration
sealing program; (III) an update of the fire damper program
including a schedule exemption request and a 10 CFR 50, Appendix
R, Section III.G.2, fire barrier exemption request; and (IV) a
section addressing miscellaneous fire barrier concerns.

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I. Modification Progress Report

A comparison of the attached Modification Status Report and the previous Modification Status Report, dated May 1984, reveals that ten modifications have been completed and three expected completion dates have been changed. These changes are due either to the inability to provide specific equipment outages (Mod 1029A); delays in obtaining equipment (Mod 1029U); or unavoidable construction delays (Mod 1309, Text Section III). The outages have been difficult to obtain since some of the equipment serves both units in both the operating and shutdown conditions (i.e., shutdown cooling valves, HVAC equipment). Obtaining qualified circuit breakers (Mods 1029J, K, L) continues to be a concern.

Modifications required to implement the alternative shutdown requirements have been added to the Progress Report.

II. Penetration Seal Program III.M

- A. A total of 6150 penetration seals through 342 fire barriers have been or are in the process of being upgraded.
- B. Unit 3 barriers are essentially complete. Approximately 2% of the penetrations remain to be sealed. The remaining work is composed of clean-up items consisting of the following:
 - (1) Seals requiring an outage to perform the work, particularly high voltage conduit seals.
 - (2) Seals associated with fire dampers which remain to be upgraded.
 - (3) Miscellaneous items including closing of nonconformances identified during inspection, accessibility problems due to high radiation, and particularly difficult installations to engineer.

A roving fire watch has been instituted in accordance with Peach Bottom Technical Specifications until the barriers are completed.

- C. Unit 2 barrier penetration seals are 95% complete. Work is expected to be complete prior to the end of the current refueling outage.
- D. Penetration Seal Deviations (PSDs) - The reference (3) letter briefly described our mechanism to control deviations from approved seal details. A sample penetration seal deviation form was also transmitted. Enclosed for your information are several examples of completed penetration seal deviation forms (Attachment 2). The deviations reflect both deviations from accepted seal designs and situations where 3-hour qualified penetration seals were not required to provide an acceptable fire barrier. Each of the deviations is considered to be minor. In accordance with Generic Letter 83-33, each of these deviations has been evaluated to verify that the affected fire barriers provide a fire resistance that exceeds the fire loading in the area. We have enclosed the penetration seal deviation index (Attachment 3) that has been compiled to date. At the conclusion of the penetration seal upgrade program, the completed penetration seal deviation package will be forwarded to the NRC for information.

III. HVAC Damper Program III.G.2

- A. The installation of three-hour qualified dampers in ventilation ducts penetrating safe shutdown barriers is continuing. The following tabulation provides a status of the fire damper program:

	Unit 3	Unit 2	Common
Total	43	44	57
Qualified	11	6	15
Complete	2	4	12
Exemption	17	20	22
To Do	13	14	8

As stated in the reference (3) letter, several obstacles arose during damper installation that have impacted the damper upgrade program.

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 re-evaluation 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 cannot assure critical equipment availability during operation without ventilation to that equipment.

Additionally, productivity has not improved as expected. The lack of improvement is attributable to the uniqueness of each installation caused not so much by the ductwork/damper installation requirements, but by the interferences associated with each installation.

Therefore, we hereby request, pursuant to the requirements of 10 CFR 50.12, an exemption from our previously transmitted completion date of September 15, 1984. Our proposed schedule would be to complete No. 3 unit damper installations in the same time frame as the Unit No. 2 and Common dampers, namely, by the end of the current No. 2 Unit refueling outage. In accordance with plant Technical Specifications, an hourly fire watch has been established for those Unit No. 3 fire barriers which require dampers. Our installation effort continues to be concentrated in Unit No. 3. As accessibility in high radiation areas becomes available or outages occur, the dampers will be completed.

- B. Twenty-one locations have been identified where installation of fire dampers in heating and ventilating penetrations through safe shutdown barriers would adversely affect safeguard systems.

1. Pursuant to Section 50.12 of the Commission Regulations, we request an exemption from the requirements of 10 CFR 50, Appendix R, Section III.G.2, requiring separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a three-hour rating.

The following numbers address the dampers listed in Attachment 4.

- a. Nos. 1, 2, 21, 22 - Inadvertent closure of a damper in the supply or exhaust ductwork of the outboard main steam isolation valve room could cause a Group I isolation (i.e., MSIV closure) and a resultant reactor transient. The temperature monitors utilized for steam leak detection have caused Group I isolations in the past when the ventilation system has been shutdown due to reactor building isolations. MSIV closure at power is one of the severest reactor transients, yet it is of primary importance that we detect a genuine steam leak; therefore, no modification to the temperature monitors is contemplated. For the above reason, we request an exemption from the requirement of installing a three-hour rated fire damper in the supply and exhaust ductwork. This same fire area contains 386 square feet of unrated blowout panel as well as an open labyrinth to adjacent fire areas for steam pressure relief. These concerns are detailed in Section IV.d of this letter.
- b. Nos. 3-12, 16, 17, 19, 20, 23, 24, 27 - Each one of these penetrations is associated with the Standby Gas Treatment System (SGTS). All are 24" circular duct except No. 27 which is a 36" carbon steel exhaust pipe from the SGTS fans. Each of these damper locations is in one of two main exhaust lines to the SGTS. One line is from the refueling floor, and the second line is from the reactor building. The reactor building is separated from the refueling floor by a sealed hatch. Each of these lines is a main feed, and inadvertent closure of any damper would jeopardize secondary containment capability in the event of a reactor building isolation. The concern is compliance with single failure criteria,

i.e., defeating SGTS with a single damper failure. The duct is too small to insert two dampers side-by-side because of system friction losses. (Single failure would thereby decrease flow but not defeat the system.) A second alternative would be to install new sections of duct at each barrier penetration location which would parallel the existing ductwork and serve as a bypass in the event a damper failed closed. Though this is a viable approach, the cost and time associated with providing new bypasses would be extremely high. The job would consist of adding 17 bypass ducts; core boring through reinforced concrete floor slabs and walls as thick as three feet; evaluating each of these walls and floors for structural integrity before core boring; engineering design to avoid existing plant interferences; and scheduling and monitoring all work activities to assure we have an operable SGTS system.

Plant Technical Specifications require both units be shutdown and no fuel movement if one branch of SGTS is out-of-service for over seven days.

The fire loading on opposite sides of the affected barriers is a maximum of 41 minutes; however, as evidenced by Attachment 4, the combustible loadings are generally considerably lower. Little, if any, transmission of smoke should occur through the ductwork. In the event of a fire, the SGTS should not be running because it is only used for Reactor Building isolations caused by various plant unusual events.

Therefore, based on the significant safety concern, the low combustible loadings in the areas and the minimal chance of smoke transmission, we request the exemption.

- c. No. 18 - This particular damper location does not affect a safeguard system; however, duct construction and fire loading support an exemption request. This is an 18" carbon steel pipe which supplies ventilation air to the torus. the duct is hardpiped from the barrier to the torus. Any smoke transmission

to the torus, which is one-half filled with water, would be inconsequential. The likelihood of a fire in the torus is extremely remote based on the minimal combustible loading of cables associated with lighting and valves. Based on the above, we request an exemption for this barrier.

2. The following dampers are not qualified to a 3-hour rating, but provide adequate fire barrier protection for the fire area loadings. (See Attachment 4)
 - a. Nos. 13, 14, 15 - Each of these particular ducts contain 2 fire dampers in series which are rated at 1 1/2 hours each. The dampers are similar in construction to those identified and described in reference (2). These dampers are located in the floor of a ductchase exiting the chemical laboratory. The fire loadings are minimal; .09 hours in the chemical laboratory, and zero hours in the ductchase. The installed dampers are more than adequate to meet Generic Letter 83-33 requirements for fire area boundaries.
 - b. Nos. 25, 26 - As indicated in Attachment 4, the ducts between the identified barriers contain 1 1/2 hour rated dampers located outside the walls on each side of the damper. These dampers were installed outside the wall because of existing equipment interference in the area. The fire loadings on each side of the barrier are minimal and the "duct" is manufactured of schedule 40 steel. The installation is sufficient to meet the required fire barrier resistance.

IV. Fire Barriers - III.G.2

A. Water Curtain - Mod 1029U

A water curtain has been installed in the west corridor of the Units 2 & 3 Reactor Buildings elev. 135 separating the north and south ends of each building. Each system will be modified so that the primary method

of deluge system actuation is automatic. Cross zoned fixed temperature heat detectors will be installed on each side of the water curtain. The systems can also be activated using the manual break-glass control stations located in the stairwell adjacent to the fire area and also from an electrical remote station in the Reactor Building Stairwell. Smoke detectors are already in service in the vicinity of the water curtains. Unit 3 water curtain automation is hindered by equipment unavailability and will be completed as soon as possible. Unit 2 will be completed by the end of the current refueling outage. This reflects a change in our expected completion date on the Mod Progress Report transmitted with reference (4).

B. Fire Doors

We are currently in the midst of an extensive fire door review and upgrade program. Fire doors in safe shutdown barriers were reviewed to assure compliance with U.L. and NFPA requirements. The majority of problems identified were screw holes or small punctures in doors and door frames. There were also instances where U.L. labels had been removed from qualified fire doors. Documentation is available to substantiate the ratings of these doors.

Two doors were identified which were not purchased to U.L. requirements. Doors Nos. 305 and 356 are located at elevation 165 in the Control Structure Fan Room and separate that room from the M.G. Set Ventilation Supply Fans. The door and frame construction as shown on the applicable vendor print is 16 gauge hollow metal, equal to the labeled doors. The door installation, jams and heads are identical to the labeled doors, as is all door hardware. The combustible loading on each side of the barrier is minimal, .0 hr. and .5 hr. Therefore, the existing doors are suitable for the installation and are in accordance with the fire barrier guidelines identified in Generic Letter 83-33.

C. Gratings in Fire Barriers

The Alternative Shutdown Capability Assessment transmitted with reference (2) identified several exemptions and their bases. Section 7.2.1 presented the bases for a III.G.2 exemption for fire areas 05 and 12, the Torus Compartments. Page 7-7 incorrectly identified

the size of the steel gratings provided for torus access and pressure relief as 10 square feet each. In reality, these gratings are 50 square feet and 40 square feet, respectively. The sizes, though substantially larger than originally reported, do not alter the basis for the exemption request detailed in Section 7.2.1.

Additionally, this same section failed to identify an 87 square foot grating which is located between the Torus Room and the Neutron Monitoring Rooms, El. 135, (Room Numbers 210, 255). The fire loading in the Neutron Monitoring Room is .04 hours consisting of cable insulation and jacketing. The Neutron Monitoring Room walls and penetrations, though they are not safe shutdown barriers and were not part of the penetration seal upgrade program, are sealed and of a construction to provide radiation shielding. It should not affect the bases detailed in the exemption request.

D. Elowout Panels

Fire areas 208 and 254, the outboard MSIV Rooms, are each provided with a total of 386 square feet of blowout panel and also are open to the adjacent Reactor Building general access areas by an open labyrinth (see Attachment 5). The blowout panels and open labyrinth are provided for steam venting in the event of a high energy line break. The blowout panels have no fire rating. One panel and also the labyrinth vents from the MSIV Room (fire loading .02 hrs.) to the Reactor Building general access area, El. 135 ft. (fire loading .68 hrs.). The second panel vents into the Moisture Separator Area of the Turbine Building (fire loading .41 hrs.). The labyrinth vents vertically approximately 10' off the floor; therefore, there are no clear openings at grade elevation to the adjacent fire area.

The only equipment inside the MSIV Rooms required to operate are the injection valves for the RCIC and HPCI systems (Methods A and B, respectively). There is also a steam supply valve for the RCIC system within the area; however, it is normally in its correct operating position.

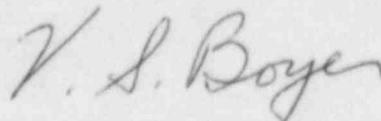
The RCIC or HPCI injection valves are operated during the initial phases of the safe shutdown. Once these valves are in their operating position, there is no requirement to operate them further. The valves cannot be caused to operate spuriously from the MSIV Rooms.

For a fire initiating inside the MSIV rooms, Method C (June 1982 submittal) is used to safely shutdown the plant. The fire loading within the room is not sufficient to breach the blowout panels or to escape the labyrinth. For a fire initiating outside the MSIV rooms, Method A or B (June 1982 submittal) is used, depending upon the specific location of the fire, to safely shutdown the plant. The requisite valve operations inside the MSIV rooms will be performed prior to the barriers being breached.

Therefore, pursuant to Section 50.12 of the Commission Regulations, we request an exemption from the requirements of 10 CFR 50, Appendix R, Section III.G.2, requiring separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating based on the overriding nuclear safety concerns; the fact that the affected equipment in the MSIV Rooms operates early in the shutdown scenario and no spurious actuation in the room can effect valve positioning; and the relatively low combustible loadings, particularly in the outboard MSIV Room.

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

Very truly yours,



Attachments

cc: A. R. Blough, Site Inspector
NRC Document Control Desk

PBAPS Fire Protection Mod Progress Report

Revised to Account for Proposed Alternative Shutdown System
(This Report Supersedes the May, 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.	Reroutes in progress. No encapsulation necessary.	2-EOO	1029B
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. Short sections of ZA2M001 and ZA2D855 associated with a Junction Box are also incomplete.	2-EOO	1029A
Reroute ZD2Q1024K in Fire Zones 6-5E and 6-5G.	Reroute in progress.	2-EOO	1029B
Fix ZA3Q1827A (reroute in Fire Zone 11-12C).	Complete	Completed	1029B
Encapsulate ZB3M002 in Fire Zone 11-12C.	Raceway encapsula- tion complete. J-Box to be encapsulated.	Raceway completed. J-Box - 12/31/84	1029A
Encapsulate ZA2M417; ZB3D002 in Fire Zone 11-75.	Complete	Completed	1029A

<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. Reroute complete; encapsulation in progress.	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	Completed	1029A
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
Encapsulate OG03H and ZA2AG121B in Fire Zone 35-122.	Complete	Completed	1029A
Redesign 2A1706R - encapsulate OGO3H and ZA2AG121B in Fire Zone 37-124.	Complete	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.	Relocation complete Encapsulation in progress.	2-EOO	1029C 1029A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate ZA2A1505A in Fire Zone 40-127.	Complete	Completed	1029A
Encapsulate ZB2D1802A, B and ZB2BD01E in Fire Zone 41-128.	Complete	Completed	1029A
Encapsulate ZA2B1249, ZA2B143 and ZC2B1247 in Fire Zone 50-130.	Reroute complete. Encapsulation in progress.	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 5900 seals are complete of an estimated 6150 total. Clean-up items remain on Unit #3 (see body of letter). Remainder are No. 2 Unit to be complete by end of outage.	9/15/84 for Unit #3 except for outage seals and misc. clean-up items. 2-EOO	1110

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
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. Awaiting bus outage. Bus outage scheduled during unit outage.	3-Completed 2-EOO	2-1029G 3-1029H
Change the settings on the 480V load center circuit breakers: Unit 2-1013 ... 1322; Unit 3-1212 ... 1114.	Complete in Unit 3. Unit 2 design complete. Awaiting bus outage. Bus outage scheduled during unit outage.	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. Eisenhut, dated January 12, 1983.)	Qualification of motor control centers which house breakers is complete. PECo was working with Westinghouse in order to obtain qualified breakers. Westinghouse abandoned their qualification program. PECO is seeking alternatives.	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.	50% complete. Awaiting bus outage to complete remaining installation. Bus outage scheduled during unit outage.	2-EOO	1029M

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Replace the existing ground overcurrent relays for the following 4kV circuit breakers: Unit 2; 152-1606 and 152-1704.	Design complete. Relays ordered. Delivery 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
System Automation of Water Curtain in the West Corridors of reactor building.	Design in progress	2-EOO 3 - To be determined based on equip. delivery.	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

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
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	Complete	Completed	1029B
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 a junction box. Awaiting equipment outage to complete encapsulation. Equip. outage scheduled during Unit outage.	2-E00	1029A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
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 complete.	2-EOO	1029B
Reroute ZB2Q2074A	Design complete. No encapsulation necessary.	2-EOO	1029B
Reroute ZA2B5944A from Fire Zone 11-72B.	Design in progress.	2-EOO	1029B
Install a single smoke detector in the drywell access hatch areas of both units, Fire Zones 6-22 and 13-28. The detectors are to be tied into existing loops on 135' of the Rx Bldgs.	Complete	Completed	1029W
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

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
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.	35 dampers remain to be installed. Design is 85% complete.	2-EOO 3 - End of Unit 2 Outage	1309
Install battery charger cross-tie feeds. These cross-tie feeds will be encapsulated as required.	Installation in progress.	2-EOO dependent upon equipment delivery.	1029B
Encapsulate ZA2M416 in Fire Zone 6-5H.	To be rerouted to avoid encapsulation requirements, reroute in progress.	2-EOO	1029A
Encapsulate cable ZD2B3983A in Fire Zone 38-125.	Complete	Completed	1029A
Reroute ZD3D489 in Fire Zone 32-119.	Design complete.	2-EOO	1029A
Encapsulate ZB3M149 in Fire Zone 31-118.	Complete	Completed	1029A
Encapsulate ZB3M149 in Fire Zone 33-120.	Complete	Completed	1029A
Relocate B and D Diesel Generator MCC feeds as identified in the body of the letter. These feeds will be encapsulated as required.	Relocation complete. Encapsulation design in progress.	2-EOO	1029B
Encapsulate ZC3D481 and ZC3D482 in Fire Zone 34-121.	Complete	Completed	1029A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Encapsulate ZA2D841 in Fire Zone 35-122.	Complete	Completed	1029A
Encapsulate ZC3D481 and ZC3D482 in Fire Zone 36-123.	Complete	Completed	1029A
Encapsulate ZA2D841 in Fire Zone 37-124.	Complete	Completed	1029A
Encapsulate ZC2A484 in Fire Zone 48-144.	Complete	Completed	1029A
Reroute 5 cables in Fire Zone 6-5H - ZC2B3814A; ZC2Q1228A, B; ZC2Q1230B, C.	Design complete. Installation scheduled.	2-EOO	1029B
Reroute ZC2Q1228B and ZC2Q1230B in Fire Zone 6-5J.	Design complete. Installation scheduled.	2-EOO	1029B
Reroute 4 cables in Fire Zone 25-72A - ZC2Q1221B; ZC2Q1230B ZD3Q1227B; ZD3Q1229B	Unit 2 design complete & installation scheduled. 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 sufficient duration.	1029B

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Reroute 12 cables in Fire Zone 28-78H (Cable Spreading Room)	Unit 2 design complete and installation scheduled. 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 & installation scheduled. Unit 3 complete except for circuit switchover.	2-EOO 3 - Next system outage of sufficient duration.	1029B
Install 2 additional smoke detectors in Fire Zone 50-78A to provide area coverage.	Complete	Completed	1029W

ALTERNATIVE SHUTDOWN MODIFICATIONS

Provide new panels to be established as the alternative control stations for the B and D safeguard channel diesel generators.	Design in progress.	2-EOO (86)	1351A
Establish alternative controls and indication for the B&D safeguard channel diesel generators at new panels identified above.	Design in progress.	2-EOO (86)	1351A
Provide alternative control and indication for 4kv circuit breakers 20A1606, 2A1807, 30A1606, and 30A1807.	Design in progress.	Unit 3 work 3-EOO Unit 2 work 2-EOO (86)	1351A

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Provide alternative status indication for 4kv circuit breakers 20A1601, 20A1608, 20A1801, 20A1808, 30A1601, 30A1608, 30A1801, and 30A1808.	Design in progress.	Unit 3 work 3-EOO Unit 2 work 2-EOO (86)	1351A
Provide alternative bus voltage indication for 4kv bus 20A16, 20A18, 30A16, and 30A18.	Design in progress.	Unit 3 work 3-EOO Unit 2 work 2-EOO (86)	1351A
Provide a linear heat detection system in the cable trays in fire area 25.	Awaiting approval of mod via SER from the NRC.	2-EOO (86)	1351B
Provide encapsulation of circuits as required for alternative shutdown mods/capability.	Identification of encapsulation needed is in progress.	Unit 3 work 3-EOO Unit 2 work 2-EOO (86)	1351C
Provide alternative control and breaker status indication for the 4kv circuit breaker for the B safeguard channel ESW pump (20A1603).	Unit 2 equipment is involved with mod. Design to be started.	2-EOO (86)	1351D
Provide a new panel to establish an alternative control station for the Unit 2 HPCI system. The new panel will also house equipment for mods 1352B, 1352G and 1352H.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352A
Establish alternative controls and indication for the Unit 2 HPCI system at the panel identified above.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352A
Establish alternative diagnostic instrumentation for Unit 2 alternative shutdown systems at the Unit 2 HPCI ACS.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352B

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Provide alternative control and breaker status indication for for the 4kv circuit breaker for the Unit 2 B safeguard channel RHR pump (20A1602).	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352C
Provide isolation of control circuits for Unit 2 RHR valves that cannot be subjected to spurious operations.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352C
Provide alternative control and breaker status indication for the 4kv circuit breaker for the Unit 2 B safeguard channel HPSW pump (20A1607).	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352D
Provide alternative control and breaker status indication for Unit 2 4kv emergency circuit breakers 20A1605 and 20A1806 that feed 4kv/480v load centers.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352E
Provide alternative DC power feeds for control and motive power for Unit 2 alternative shutdown systems.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352F
Provide alternative controls for three Unit 2 safety relief valves (SRV's) at the Unit 2 HPCI ACS.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352G
Establish Unit 2 alternative process monitoring instrumentation at the Unit 2 HPCI ACS.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352H

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Provide emergency lighting for Unit 2 alternative control stations and routes access and egress for the ACS's.	Unit 2 work. Design on hold until Unit 3 work is complete.	2-EOO (86)	1352I
Provide a new panel to establish an alternative control station for the Unit 3 HPCI system. The new panel will also house equipment for mods 1353B, 1353G, and 1353H.	Design in progress.	3-EOO	1353A
Establish alternative controls and indication for the Unit 3 HPCI system at the panel identified above.	Design in progress.	3-EOO	1353A
Provide alternative diagnostic instrumentation for Unit 3 alternative shutdown systems at the Unit 3 HPCI ACS.	Design in progress.	3-EOO	1353B
Provide alternative control and breaker status indication for the 4kv circuit breaker for the Unit 3 D safe-guard channel RHR pump (30A1802).	Design in progress.	3-EOO	1353C
Provide isolation of control circuits for Unit 3 RHR valves that cannot be subjected to spurious operations.	Design in progress.	3-EOO	1353C
Provide alternative control and breaker status indication for the 4kv circuit breaker for the Unit 3, D safe-guard channel HPSW pump (30A1804).	Design in progress.	3-EOO	1353D

<u>Mod Description</u>	<u>Status</u>	<u>Expected Completion Dates</u>	<u>Mod. No.</u>
Provide alternative control and breaker status indication for Unit 3 4kv emergency circuit breaker 30A1605 and 30A1806 that feed 4kv/480v load centers.	Design in progress.	3-EOO	1353E
Provide alternative DC power feeds for control and motive power for Unit 3 alternative shutdown systems.	Design in progress.	3-EOO	1353F
Provide alternative controls for three Unit 3 safety relief valves (SRV's) at the Unit 3 HPCI ACS.	Design in progress.	3-EOO	1353G
Establish Unit 3 alternative process monitoring instrumentation at the Unit 3 HPCI ACS.	Design in progress.	3-EOO	1353H
Provide emergency lighting for Unit 3 alternative control stations and routes of access and egress for the ACS's.	Design in progress.	3-EOO	1353I

PSD # 024

Mechanical Engineering Division

Penetration Seal Deviation Form

Peach Bottom Atomic Power Station Units 2 & 3
Penetration Seals

Date: 8-20-84

Location: Units 2 & 3 North & South Isolation Valve rooms Elevation
135'-0" floor penetrations (Rooms 203, 204, 248 and 249).
Condition prior to Upgrade:

all penetrations are sleeves containing a large insulated
pipe and an instrument tray penetrating the barrier. On
the 'A' side (isolation valve room) the instrument tray
Description of Upgraded Penetration Seal: (Pg. 2)

On the 'A' side the instrument tray is encapsulated
in calcium-silicate insulation at the barrier to
allow the installation of a flexible boot on this side.
Justification: (Pg. 2)

The perimeter of the pipe insulation was built
up to encapsulate the instrument tray so that
the sealing ring area is tight without voids. This
is considered an acceptable seal since both sides
of the barrier are non hazardous with negligible com-
bustible loading (0.00 hrs both sides).

Bisco Penetration I.D. Nos.:

RB2-135-203-5005

(36" SLV w/ 32" PIPE)

RB3-135-248-5006

(32" SLV w/ 24" PIPE)

RB3-135-249-5002

(32" SLV w/ 24" PIPE)

RB3-135-249-5008

(32" SLV w/ 24" PIPE)

Prepared by: K. M. G. 8-20-84

Approved by: J. H. G. 8/22/84

Approved by: J. R. C. 8/22/84

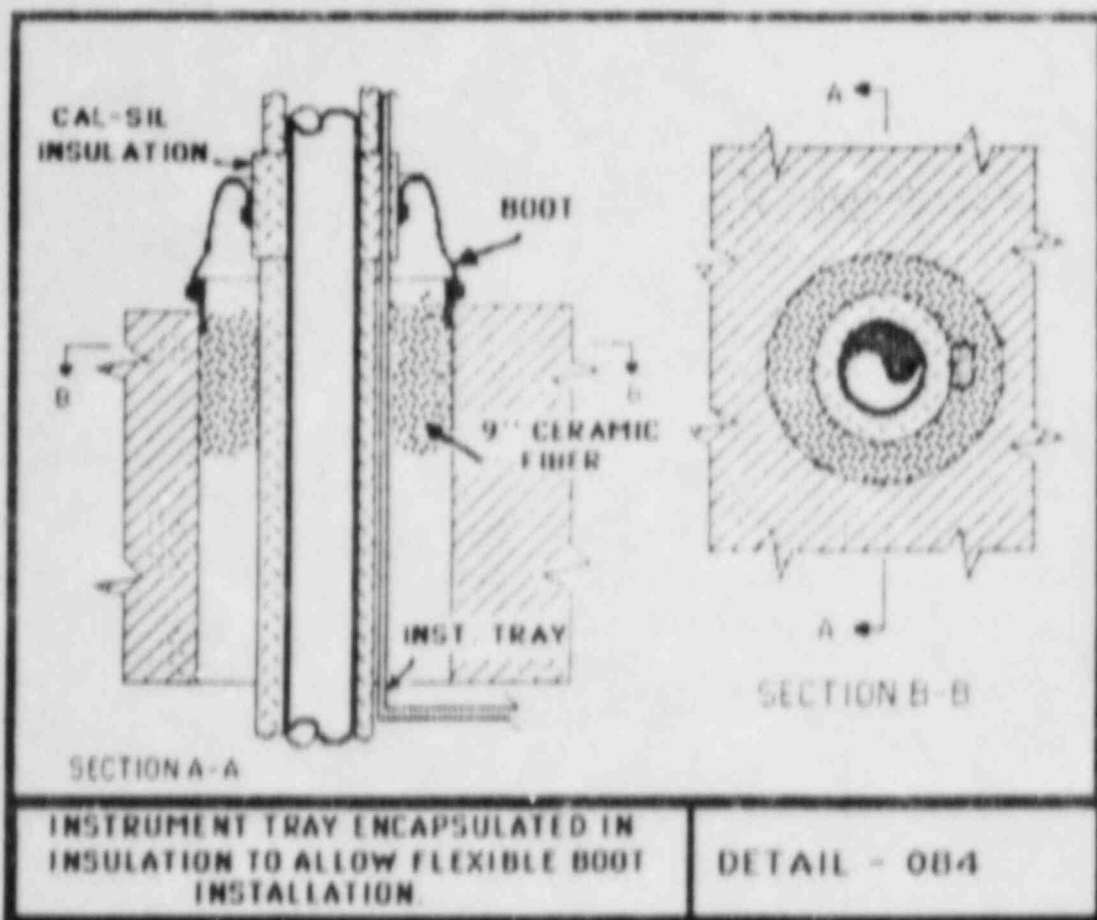
C Detail Prior to Upgrade (Cont.):

PSD # 024

runs parallel and close to the pipe. On the 'B' side (tunnel room) close to the barrier, the instrument tray turns and runs perpendicular to the pipe preventing the installation of a flexible boot on this side.

Description of Upgraded Penetration Seal (Cont.):

and 9" of ceramic fiber within the barrier. The 'B' side remains open. See detail 084.



INSPECTION ACCEPT/REJECT CRITERIA

1. AT FLOOR VERIFY
 - a) INSTRUMENT TRAY IS ENCAPSULATED IN CAL-SILICATE ABOVE THE FLEXIBLE BOOT SEALING RING ON THE PIPE SO THAT NO VOIDS ARE AROUND THE SEALING SURFACE
 - b) SEE APPLICABLE BOOT DETAIL FOR INSPECTION CRITERIA
 - c) IF ONLY KADWOOL (WHITE CERAMIC FIBER) OR NELSON FLAME STOP PUTTY (ORANGE) IS INSIDE THE PENETRATION OPENING AND A BOOT IS NOT IN PLACE, CHECK THE CONST. DIVISION TEMPORARY SEAL LOG BOOK TO VERIFY CONTROL
2. ON THE SIDE OPPOSITE THE BOOT (LABELED DETAIL 084 IN THE COMPUTER PRINTOUT), VERIFY THE KADWOOL IS INTACT BY A VISUAL SEARCH FOR LOOSE KADWOOL PERTRUDING FROM THE PENETRATION OR OTHER EVIDENCE THAT MAY INDICATE THE UNPACKING OF THE FIBER IN THE PENETRATION
3. PENETRATION SEAL USE
 - a) 3 HOUR FIRE SEAL

PSD # C66

Mechanical Engineering Division

Penetration Seal Deviation Form

Peach Bottom Atomic Power Station Units 2 & 3
Penetration Seals

Date: 7-30-84

Location:

Condition prior to Upgrade:

These items are junction boxes embedded in the wall containing conduits with or without cables. The junction boxes are embedded, but do not penetrate the wall.

Description of Upgraded Penetration Seal:

(pg. 2)

No seal upgrade was required. See detail 066.

Justification:

The conduits do not penetrate the barrier within a 5 foot radius of the barrier entry point. Since the cabling (a combustible source) is in a conduit which

Bisco Penetration I.D. Nos.:

(pg. 2)

Various. See "PSD 066 Listing" Computer printout.

Prepared by: K. M. G. [Signature] 7-30-84

Approved by: J. H. [Signature] 8/15/84

Approved by: [Signature] 8/15/84

Condition Prior to Upgrade (cont):

PSD # 066

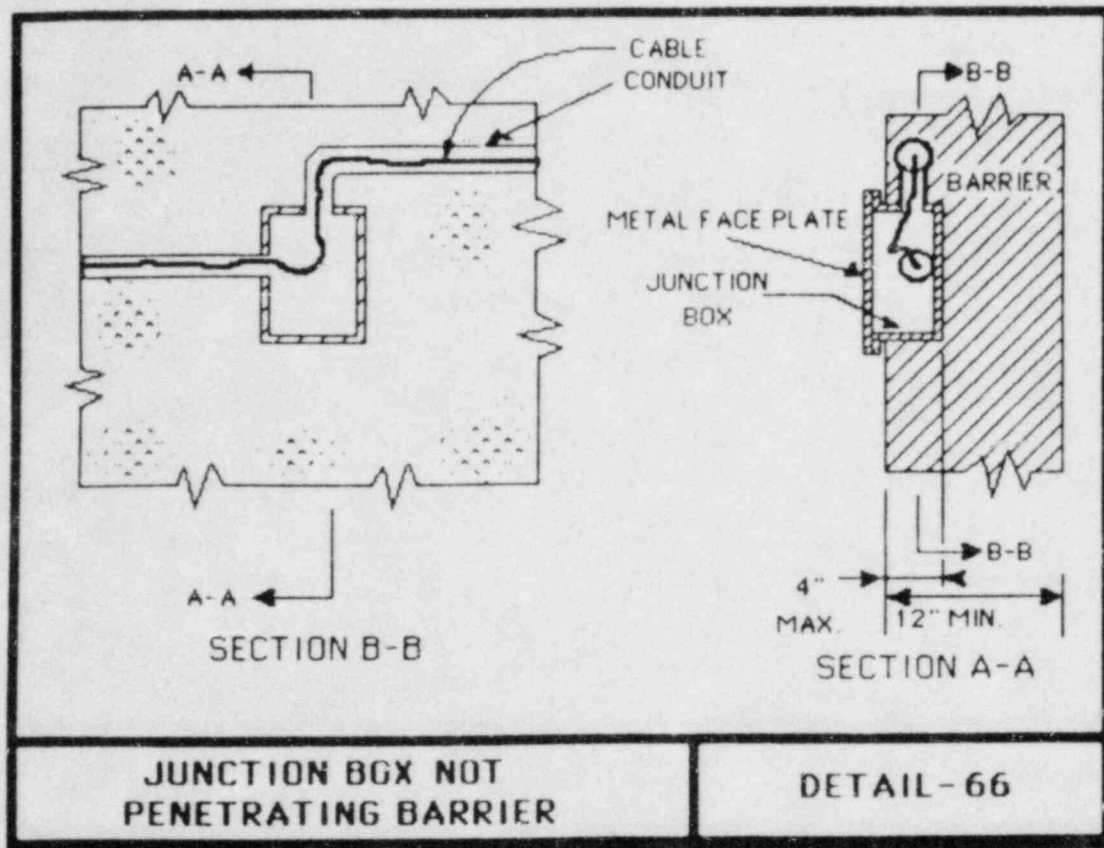
The junction boxes are hermetically sealed. The conduits are also embedded in the barrier, and do not exit the fire barrier on the opposite side within a 5 foot radius of the point at which it enters the barrier.

Justification (cont):

is embedded in concrete, it is not directly subjected to an open flame. Additionally, the chances that flaming material would be propagated through the barrier via a conduit during the application of a hose stream is considered negligible since the junction boxes are hermetically sealed which would prohibit the introduction of combustible materials internal to the junction boxes.

With the junction boxes being hermetically sealed and embedded within the barrier, smoke and hot gases are restricted from penetrating the barrier. The cabling located within the barrier does not present a significant smoke and hot ^{gas} hazard since it is isolated from open flames and insulated from the heat of the fire.

The concrete walls and floors will provide a heat sink for the conduit. Heat generated from a fire occurring on the conduit access side of the barrier transported into the conduit will be dissipated through the steel conduit wall into the heat sink. Temperature on the unexposed side of the barrier will not be significantly increased.



INSPECTION ACCEPT/REJECT CRITERIA

1. VERIFY THAT THE SIDE OF THE BARRIER OPPOSITE THE SIDE DESIGNATED "DETAIL-66" ON THE COMPUTER SCHEDULE CONTAINS NO UNACCOUNTED FOR CONDUIT WITHIN A 5 FOOT RADIUS OPPOSITE THE JUNCTION BOX.
2. VERIFY THAT THE JUNCTION BOX COVER IS SECURELY FASTENED IN PLACE

BISCO DWG. NO.	PENET NO.	DESCRIPTION	EXIST SEAL	SEAL TYPE	A SIDE SEAL	B SIDE SEAL	DATE COMPLETE	C K	REMARKS	CORAD NO.
RB3-165-ST22-W-1 OF 1	4004	6" X 6" EMB. J-BOX	OPEN	F	DNP	DET. 66	N.S.R.		PSD 066	10011
RB3-165-ST22-W-1 OF 1	4004A	3/4" C	OPEN	F	DNP	DET. 66	N.S.R.		PSD 066	10012
RB3-135-252-E-3 OF 3	2034	6" X 6" PARTIALLY EMB. JUNCTION BOX		F	DET. 66	DNP	N.S.R.		PSD 066	10761
RB3-135-252-E-3 OF 3	2034A	1" C	OPEN	F	DET. 66	DNP	N.S.R.		PSD 066	10762
RB3-135-252-E-3 OF 3	2034B	1" C	OPEN	F	DET. 66	DNP	N.S.R.		PSD 066	10763
RB3-135-252-E-3 OF 3	2034C	1" C	OPEN	F	DET. 66	DNP	N.S.R.		PSD 066	10764
RB3-135-252-E-3 OF 3	2035	6" X 6" EMB. JB			DET. 66	DNP	N.S.R.		PSD 066	10795
RB3-135-252-E-3 OF 3	2035A	3/4" C	OPEN	F	DET. 66	DNP	N.S.R.		PSD 066	10796
RB3-135-254-1-N-1 OF 1	1025	4" X 4" JB		F	DET. 66	DNP	N.S.R.		PSD 066	10854

PSD # 036

Mechanical Engineering Division

Penetration Seal Deviation Form

Peach Bottom Atomic Power Station Units 2 & 3
Penetration Seals

Date: 8-17-84

Location: Diesel Generator Building North and South interior walls.

Condition prior to Upgrade:

Cardox piping penetrating fire barriers, shrouded in steel plating. Penetrations are grouted at the barriers both sides. All pipes are 3" in 4" con bores.

Description of Upgraded Penetration Seal:

No upgrade required. See detail 069.

Justification:

Because of the trays welded construction and the amount of time and effort which would be required to make the penetration available for sealing, an engineering evaluation was conducted. This review found the beginning of the pipe run (ESW booster pump bay north wall) and the last pipe pene- (P82.)

Bisco Penetration I.D. Nos.:

DGC-127-A-3011
DGC-127-A-3012
DGC-127-A-3013
DGC-127-A-3014
DGC-127-B-3002

DGC-127-B-3003
DGC-127-B-3004
DGC-127-C-1014
DGC-127-C-3015
DGC-127-C-3016

Prepared by: K. M. Ginn 8-17-84

Approved by: C. J. Godes 8/22/84

Approved by: G. S. Reich 8/22/84

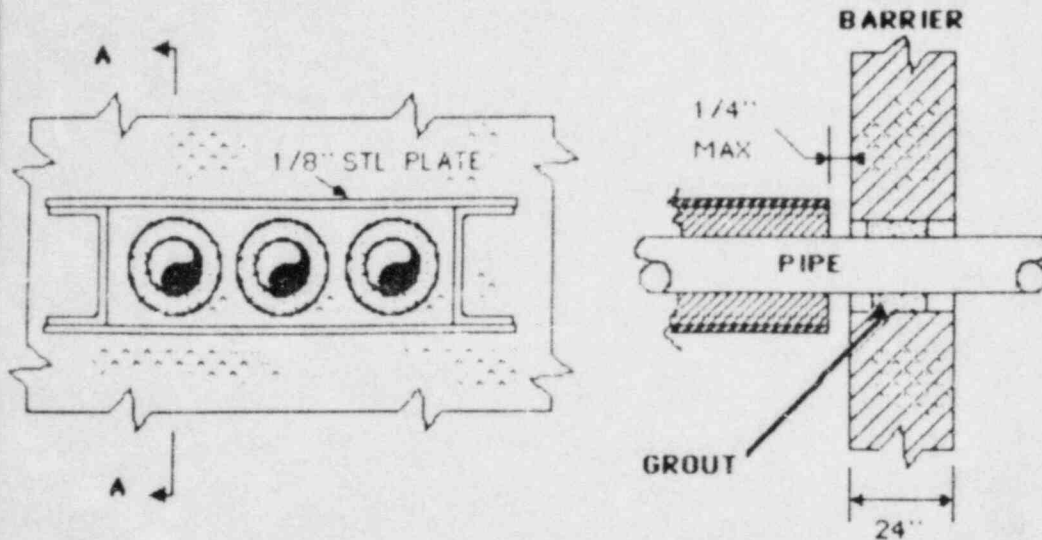
Justification (Cont'):

PSD # 036

tration (E4 emergency diesel generator bay south wall) to be sealed in grout and in good condition. Additionally, portions of core bores in intermediate barriers were visible above the shrouding. These also were found to be sealed with grout.

Each diesel generator bay is separated by a 24 inch concrete barrier. The annular space around the penetrations of interest appear to be sealed full depth with grout. The steel plating tray or shroud surrounding these pipes, though not hermetically sealed, it is of such construction as to allow a minimal amount of flaming material to reach the barrier. Their location - high in the overhead - also makes the possibility of flaming material transport through the barrier remote. Additionally, passage of flaming material through the barrier at these penetrations when subjected to a hose stream is not considered probable since no direct hose stream path to the penetration exist. Although each diesel generator bay has a combustible loading of 0.63 hrs. (38 minutes), for the reasons listed above, the existing seals are considered adequate. In addition, obviously each diesel generator is protected by a total flooding CO₂ system.

NOTE. NUMBER OF PIPES VARIES.



**SHROUDED CARDOX LINES
(NON-HERMETICALLY SEALED)**

DETAIL - 69

INSPECTION ACCEPT/REJECT CRITERIA

1. VERIFY PLATES (TOP AND BOTTOM) ARE INTACT AT BARRIER.
2. VERIFY SOUNDNESS OF GROUT AT BARRIER AS BEST AS POSSIBLE. REJECTION FOR LARGE / DEEP VOIDS OR LOOSE AND CRUMBLY CONDITION

PAGE	1	August 21, 1984	10:00 AM
PSD#	DET.#	P.S.D. INDEX DESCRIPTION, LOCATION, REMARKS, ETC.	ENGR. DATE
PSD-001		MECHANICAL PENETRATIONS WITH WELDED ANNULAR ANCHORS SEALED WITH 12" OF CERAMIC FIBER.	CJG
PSD-002		GROUT AND KAOWOOL SEALS.	CJG
PSD-003		EMPTY CONDUITS WITH OR WITHOUT PLUGS.	CJG
PSD-004		CONTINUOUS CONDUIT AND CONDUITS >5 FT. FROM BARRIER.	CJG
PSD-005	*39	FIRE SEAL ON ONE SIDE ONLY FOR INTERNAL CONDUIT SEALS WITH ACCESS < 5 FT. FROM BARRIER.	CJG
PSD-006		CONTROL ROOM FLOOR SEALS.	CJG
PSD-007		STANDARD GROUT SEALS i.e. (>8" OF GROUT)	CJG
PSD-008	*40	GROUT SEALS IN HOLLOW BLOCK WALLS.	CJG
PSD-009	*39	MECHANICAL PENETRATIONS UPGRADED WITH 3 HOUR RATTED LINK SEALS.	CJG
PSD-010		3" OF CERAMIC FIBER AND POLYURETHANE FIRE SEALS.	CJG
PSD-011		ELECTRICAL BUS DUCT.	CJG
PSD-012		KAOWOOL SEALS BEHIND CARD READERS.	CJG
PSD-013		R.T.V. SEALS BEHIND DOOR FRAMES IN THE DIESEL GEN. BLD.	CJG
PSD-014		EQUIPMENT ACCESS HATCHES.	CJG
PSD-015		ELEV. 116'-0" R.H.R. RM. HEATING & VENTILATION OPENINGS.	RSS
PSD-016	*67	JUNCTION BOXES FOR FIRE ALARM PULL SWITCHES EMBEDDED IN THE BARRIER WITH CONDUIT AND NOT PENETRATING THE BARRIER.	KMM 8-16-84
PSD-017	*68	MECHANICAL PENETRATIONS WITH BOOT & FIBER ON ONE SIDE AND NON-FIRE RATED LINK SEALS ON THE OPPOSITE SIDE.	KMM 8-13-84
PSD-018	*70	WELDED STEEL PLATES BOTH SIDES OF BARRIER	BCR
PSD-019	*71	WELDED STEEL PLATE ONE SIDE WITH GROUT OR CELLULAR CONCRETE ON THE OPPOSITE SIDE.	BCR
PSD-020		POST ACCIDENT SAMPLING SYSTEM (PASS) PENETRATIONS.	KMM
PSD-021		SMOKE AND HOT GAS SEALS FOR CONDUITS.	CJG
PSD-022	FB*	CERAMIC FIBER FIRE SEALS WITH FLEXIBLE BOOT SEALS ON HAZARDOUS SIDE ONLY. UNIT 2 & 3 PHR ROOMS ONLY.	KMM 8-20-84
PSD-023		CERAMIC FIBER FIRE SEALS WITHOUT BOOTS EITHER SIDE.	KMM

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August 21, 1984

10:00 AM

P.S.D. INDEX

PSD#	DET.#	DESCRIPTION, LOCATION, REMARKS, ETC.	ENGR.	DATE
PSD-024	*84	INSTRUMENT TRAY ENCAPSULATION IN INSULATION TO ALLOW FLEXIBLE BOOT INSTALLATION. UNIT 2 & 3 ISOLATION VALVE ROOMS.	KMM	8-20-84
PSD-025		CERAMIC FIBER SEALS WITHOUT FLEXIBLE BOOT SEAL ON EITHER SIDE OF THE BARRIER. UNIT 3, ROOM 453.	KMM	
PSD-026	*72	CAULKING CRACKS IN BLOCK WALLS.	BCR	
PSD-027	*73	SEALING INSTRUMENT TRAYS WITH CERAMIC FIBER & CAULK.	BCR	
PSD-028	*74	3" OF GROUT & 5" OF CERAMIC FIBER.	BCR	
PSD-029	*75	SEALING CARDREADER PENETRATIONS WITH 790 CAULK.	BCR	
PSD-030		SEALING BLOCKOUT WITH 12" (MIN) OF CERAMIC FIBER.	KMM	
PSD-031	*76	HOLLOW MASONRY BLOCK FILLED WITH SF-20.	BCR	
PSD-032		OPEN, ABANDONED THREADED PIPE.	KMM	
PSD-033	*77	CAULK AROUND I-BEAM POCKETS.	BCR	
PSD-034		OPEN ENDED, (ONE SIDE) ABANDONED PIPE OF WELDED CONSTRUCTION.	KMM	
PSD-035	*78	SEALING CONDUITS WITH O.Z. BUSHINGS.	BCR	
PSD-036	*69	SHROUDED CARDOX LINES. (NON-HERMETICALLY SEALED)	KMM	8-20-84
PSD-037	*83	PIPE SECTION PENETRATING BARRIER. CAPPED ONE SIDE, VALVED ON OPPOSITE SIDE.	KMM	8-21-84
PSD-038	*79	CHICO USED AS A FIRE OR SMOKE & HOT GAS SEAL.	BCR	
PSD-039	*80	SMOKE & HOT GAS SEAL ON SIDE > 5 FT. IN LIEU OF FIRE SEAL DUE TO ACCESSIBILITY.	BCR	
PSD-040		COAXIAL, ALS AND SHIELDED CABLES.	KMM	
PSD-041		HVAC WITH LESS THAN 3 HR. RATED FIRE DAMPER.	RSS	
PSD-042		HEAVY GAUGE METAL HVAC DUCT WORK WITHOUT FIRE DAMPERS THROUGH THE FIRE BARRIER.	RSS	
PSD-043		ANNULAR SPACE AROUND PIPE SEALED WITH 12" CF AND NON-RATED LINK SEAL DUE TO SHIELDING PIPE OBSTRUCTIONS OUTSIDE BARRIER ON BOTH SIDES.	KMM	
PSD-044		ANNULAR SPACE AROUND PIPE SEALED WITH 12" CF DUE TO GUARD PIPE OBSTRUCTION OUTSIDE BARRIER, ON BOTH SIDES.	KMM	
PSD-045	*81	INTERNAL CONDUIT SEALED WITH GROUT AND UPGRADED WITH CF.	BCR	
PSD-046		CERAMIC FIBER FIRE SEALS WITH FLEXIBLE BOOT SEALS ON THE HAZARDOUS SIDE ONLY, UNIT 3 PHR FLOOR, ELEV. 135'-0"	KMM	

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August 21, 1984

10:00 AM

P.S.D. INDEX

PSD#	DET.#	DESCRIPTION, LOCATION, REMARKS, ETC.	ENGR.	DATE
PSD-047	*82	TWIN I-BEAM VOID.	BCR	
PSD-048	*84	INSTRUMENT TRAY ENCAPSULATION IN INSULATION TO ALLOW FLEXIBLE BOOT INSTALLATION IN ROOM 447.	KMM	
PSD-061	*61	POWER RECEPTICLES NOT PENETRATING THE FIRE BARRIER.	KMM	8-6-84
PSD-062	*62	LIGHT RECEPTICLES NOT PENETRATING THE FIRE BARRIER.	KMM	8-6-84
PSD-063	*63	CONDUITS WITH CABLES NOT PENETRATING THE FIRE BARRIER.	KMM	8-6-84
PSD-064	*64	CONDUITS W/O CABLES NOT PENETRATING THE FIRE BARRIER.	KMM	8-6-84
PSD-065	*65	OPEN ENDED CONDUITS WITHOUT CABLES NOT PENETRATING THE FIRE BARRIER.	KMM	8-6-84
PSD-066	*66	ELECTRICAL JUNCTION BOXES EMBEDDED IN THE BARRIER WITH CONDUIT BUT NOT PENETRATING THE FIRE BARRIER.	KMM	8-6-84
PSD-067	*67	FIRE ALARM PULL BOXES EMBEDDED IN THE BARRIER WITH CONDUITS NOT PENETRATING THE FIRE BARRIER.	KMM	

pg. 1 of 3

HVAC System	Location of Duct	Size of Duct	Fire Loadings	Reason for Exemption Request
1. MSIV Tunnel Supply Unit 3	North Wall-Main Steam Pipe Tunnel, Unit 3 Elev. 135'	36" x 20"	0.02 hrs. 'A' side 0.68 hrs. 'B' side	Inadvertent closure of the fire damper could cause a temperature rise in the tunnel, creating a possible SCRAM condition.
2. MSIV Tunnel Exhaust Unit 3	South Wall-Main Steam Pipe Tunnel, Unit 3 Elev. 135'	28" x 32"	0.02 hrs. 'A' side 0.53 hrs. 'B' side	Inadvertent closure of the fire damper could cause a temperature rise in the tunnel, creating a possible SCRAM condition.
3. Drywell Exhaust Unit 3	Floor-C.R.D. Equipment Area, Unit 3, Elev. 135'	24"Ø	0.53 hrs. 'A' side 0.18 hrs. 'B' side	SGTS
4. Refueling Floor Exhaust Unit 3	Floor-C.R.D. Equipment Area, Unit 3, Elev. 135'	24"Ø	0.53 hrs. 'A' side 0.18 hrs. 'B' side	SGTS
5. Drywell Exhaust Unit 3	Floor-Operating Area Unit 3, Elev. 165'	24"Ø	0.35 hrs. 'A' side 0.53 hrs. 'B' side	SGTS
6. Refueling Floor Exhaust Unit 3	Floor-Operating Area Unit 3, Elev. 165'	24"Ø	0.35 hrs. 'A' side 0.53 hrs. 'B' side	SGTS
7. Drywell Exhaust, Unit 3	North Wall-Reactor Sump Pump Room Unit 3, Elev. 91'6"	24"Ø	0.10 hrs. 'A' side 0.11 hrs. 'B' side	SGTS
8. Refueling Floor Exhaust Unit 3	North Wall-Reactor Sump Pump Room Unit 3, Elev. 91'6"	24"Ø	0.10 hrs. 'A' side 0.11 hrs. 'B' side	SGTS
9. Drywell Exhaust Unit 3	North Wall-Stairway 22 Unit 3 Elev. 91'6"	24"Ø	0.15 hrs. 'A' side 0.05 hrs. 'B' side	SGTS

Pls 2 of 3

HVAC System	Location of Duct	Size of Duct	Fire Loadings	Reason for Exemption Request
10. Refueling Floor Exhaust Unit 3	North Wall-Stairway 22 Unit 3 Elev. 91'6"	24"Ø	0.15 hrs. 'A' side 0.05 hrs. 'B' side	SGTS
11. Drywell Exhaust Unit 2	North Wall-Core Spray Pump Room Elev. 91'6" Unit 2	24"Ø	0.12 hrs. 'A' side 0.05 hrs. 'B' side	SGTS
12. Refueling Floor Exhaust Unit 2	North Wall-Core Spray Pump Room, Unit 2 Elev. 91'6"	24"Ø	0.12 hrs. 'A' side 0.05 hrs. 'B' side	SGTS
13. Chemical Lab Exhaust Unit 2	West Wall-Switchgear Room Duct Chase Unit 2 Elev. 165'	16" x 28"	0.09 hrs. 'A' side	Dampers, 2@ 1½ hrs. are in the duct, but are outside of the fire barrier. Obstructions prevent the installation of the dampers within the barrier.
14. General Exhaust Unit 2	West Wall-Switchgear Room Duct Chase Unit 2 Elev. 135	12" x 28"	0.09 hrs. 'A' side	Dampers, 2@ 1½ hrs are oversized and therefore not approved by Underwriter's Laboratories.
15. Radiation Chemistry Lab Supply, Unit 2	West Wall-Switchgear Room Duct Chase Unit 2 Elev. 135'	18" x 28"	0.09 hrs. 'A' side	Dampers, 2@ 1½ hrs. are oversized and therefore not approved by Underwriter's Laboratories.
16. Drywell Exhaust Unit 2	Floor-C.R.D. Equipment Area, Unit 2 Elev. 135	24"Ø	0.52 hrs. 'A' side 0.18 hrs. 'B' side	SGTS
17. Refueling Floor Exhaust Unit 2	Floor-C.R.D. Equipment Area, Unit 2, Elev. 135'	24"Ø	0.52 hrs. 'A' side 0.18 hrs. 'B' side	SGTS
18. Torus Supply Unit 2	Floor-C.R.D. Equipment Area, Unit 2, Elev. 135'	18"Ø Sch. 40	0.52 hrs. 'A' side 0.18 hrs. 'B' side	Duct is schedule 40 welded pipe.
19. Drywell Exhaust Unit 2	Floor-Operating Area Unit 2, Elev. 165'	24"Ø	0.34 hrs. 'A' side 0.52 hrs. 'B' side	SGTS

Page 3 of 3

HVAC System	Location of Duct	Size of Duct	Fire Loadings	Reason for Exemption Request
20. Refueling Floor Exhaust Unit 2	Floor-Operating Area Unit 2, Elev. 165'	24"Ø	0.34 hrs. 'A' side 0.52 hrs. 'B' side	SGTS
21. MSIV Tunnel Supply Unit 2	South Wall-Main Steam Pipe Tunnel Unit 2 Elev. 135'	35" x 21"	0.00 hrs. 'A' side 0.61 hrs. 'B' side	Inadvertent closure of the fire damper could cause a temperature rise in the tunnel, creating a possible SCRAM condition.
22. MSIV Tunnel Exhaust Unit 2	North Wall-Main Steam Pipe Tunnel Unit 2 Elev. 135'	28" x 32"	0.00 hrs. 'A' side 0.52 hrs. 'B' side	Inadvertent closure of the fire damper could cause a temperature rise in the tunnel, creating a possible SCRAM condition.
23. Drywell Exhaust Unit 2	South Wall-Stairway 19 Unit 2 Elev. 91'6"	24"Ø	0.05 hrs. 'A' side 0.05 hrs. 'B' side	SGTS
24. Refueling Floor Exhaust Unit 2	South Wall-Stairway 19 Unit 2 Elev. 91'6"	24"Ø	0.05 hrs. 'A' side 0.05 hrs. 'B' side	SGTS
25. Equipment Cell Exhaust Common	East Wall-Spent Resin Tank Room, Common Elev. 91'6"	18"Ø Sch. 40	0.03 hrs. 'A' side 0.02 hrs. 'B' side	Duct contains two 1½ fire dampers, one on either side of the barrier. Since dampers are not within the barrier, they are not approved by Underwriter's Laboratories.
26. Equipment Cell Exhaust Common	East Wall-Spent Resin Tank Room, Common, Elev. 91'6"	18" Sch. 40	0.03 hrs. 'A' side 0.02 hrs. 'B' side	Duct contains two 1½ hour fire dampers, one on either side of the barrier. Since dampers are not within the barrier, they are not approved by Underwriter's Laboratories.
27. STGS Exhaust Common	Floor-Waste Surge Tank Room, Common Elev. 116'	36"Ø Sch. 40	0.06 hrs. 'A' side 0.03 hrs. 'B' side	SGTS

624

H

G

F

E

D

C

B

A

PLANT

HATCHES

TC

EMER. MCC

POWER 200V 100/200V

POWER 200V 100/200V

POWER 200V 100/200V

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302 ft²
AT AN ELEVATION
LOCATED

1. FOR REFERENCE DRAWING LIST AND GENERAL NOTES
SEE DWG. NO 6180-M-1



U.S. DEPARTMENT OF ENERGY

OPEN VERTICAL
LABYRINTH

Also Available On
Aperture Card

8409200080 -D/

BLOWOUT PANELS
ELEVATION OF 151ft
ON EAST WALL OF
PE TUNNEL

- 84 ft² BLOWOUT PANELS
AT AN ELEVATION OF 135 ft
LOCATED ON NORTH WALL
PIPE TUNNEL

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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