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SHIELDS L. DALTROFF  
VICE PRESIDENT  
ELECTRIC PRODUCTION

(215) 841-5001

August 8, 1979

Re: Docket Nos.: 50-277  
50-278

IE Bulletin 79-08  
Additional Information

Mr. Boyce H. Grier, Director  
Office of Inspection & Enforcement  
Region I  
United States Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

Dear Mr. Grier:

This correspondence is in response to your "Request for Additional Information on IE Bulletin 79-08" as received by telecopy in our office on July 24, 1979. Responses to your questions are presented below.

Item 2, Question 1

1. Item 2 of IEB 79-08 requires that containment isolation initiation design and procedures be reviewed to assure that manual or automatic isolation is initiated for all lines whose isolation does not degrade needed safety features or cooling capability upon all automatic initiations of safety injection. This includes those lines designed to transfer potentially radioactive gases and liquids out of containment. Clarify your response to indicate whether your design and procedures conform to these requirements.

Response

The containment isolation provisions for each fluid system and instrument line which penetrates primary containment have been

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reviewed. Attached is a tabulation of these lines and their isolation provisions.

The Peach Bottom design, as other BWR's, does not utilize "initiation of safety injection" as a signal to initiate isolation of the primary containment. Automatic isolation valves receive diverse actuation signals from the Primary Containment and Reactor Vessel Isolation Control System (FSAR Section 7.3). These isolation signals are listed and described on the attached table.

Automatic isolation is initiated for all fluid lines which penetrate the primary containment whose isolation does not degrade needed safety features or cooling capability, with the following exceptions:

- a. Closed Cooling Systems - Closed cooling water lines are provided with one remote manual isolation valve outside containment (see penetrations N-23, 24, 53, 54, 55, 56). Automatic isolation of these lines is not provided since they provide a heat sink for in containment equipment.
- b. Torus Vacuum Relief Lines - Vacuum in the torus is relieved by two lines between the suppression chamber and the reactor building. One valve in each line is air operated and is opened when a differential pressure switch de-energizes a dc solenoid valve to release air from the air operator. This valve fails open upon loss of air supply. The other valve in each line is a self-operating vacuum breaker (see penetrations N-205A, B).
- c. CRD Hydraulic System - The CRD insert and withdrawal lines are each provided with two isolation barriers. The first is a ball check valve which is internal to the control rod drive mechanism. The outer barrier is provided by valves within each hydraulic control unit (see penetrations N-37, 38). It has been accepted practice not to provide automatic isolation valves for these lines to preclude a possible failure mechanism of the scram function.
- d. Each TIP System guide tube is provided with an isolation valve which closes automatically upon receipt of a containment isolation signal after the TIP cable and fission chamber have been retracted. In series with the isolation valve, an additional isolation shear valve is included. Both valves are located outside the drywell. In the event of a containment isolation signal, the TIP System receives a command to retract the traveling probes. Upon full retraction, the isolation valve is closed automatically. Valve position (full open or full

closed) of the automatic closing valve is indicated in the main control room. If a traveling probe does not retract, this information would be supplied to the operator who would investigate the situation to determine if the shear valve should be operated. This valve is designed to shear the cable and seal the guide tube upon an actuation signal. Closing of the shear valve is performed by operator action from the main control room. Each shear valve is operated independently. The valve is an explosive-type valve, dc operated, with monitoring of each actuating circuit provided.

The isolation provisions for all systems designed to transfer potentially radioactive gases and liquids out of containment have also been reviewed. It has been verified that all of those lines which could transport contaminated fluid to undesirable locations, with the exception of the four sample lines reported previously, have suitable isolation provisions. Isolation of these lines is provided by normally closed, check, or automatic valves.

The following automatic isolation valves are provided for this purpose. Each receives an isolation signal upon initiation of its respective system:

MO-13-34, 35	RCIC Stm. Line Drain
MO-13-12, 13	RCIC Condensate Pump Discharge to Radwaste
MO-23-42, 43	HPCI Stm. Line Drain
MO-23-39, 40	HPCI Condensate Pump Discharge to Radwaste

#### Item 2, Question 2

2. The isolation procedure for the four conductivity sample lines discussed in your response should be revised to include manual or automatic isolation on all automatic initiations of safety injection. Provide the results of your engineering design review to determine whether automatic isolation of these lines is required.

#### Response

Engineering review has indicated that the four conductivity sample lines from the Residual Heat Removal System heat exchangers should be provided with an automatic isolation feature. A single solenoid valve controlled by the Primary containment Isolation system is planned for each sample line. These valves will be seismically and environmentally qualified for this service. Until these valves can be procured, installed and tested, the isolation procedure discussed in our response to IE Bulletin 79-08 will remain in effect.

Item 2, Question 3

3. Discuss how you intend to provide permanent positive control of the three 3/4-inch lines used for the integrated leak rate test to assure compliance with the requirements of IEB 79-08.

Response

Provisions are being added to lock these valves closed. As mentioned in our response to IE Bulletin 79-08, a special block (Supervision Safety Block Permit) has been applied to the three 3/4 inch Integrated Leak Rate Test (ILRT) test lines. Since the only time that these test valves would be used is during a refueling outage for the conduct of the ILRT, a procedural sign-off step is being added to the controlling ILRT procedure to require application of the Safety Block Permit and locking the valve closed for completion of the procedure. The ILRT procedure must be complete prior to reactor start-up. These valves will also be on the locked valve list.

Item 2, Question 4

4. Confirm that containment isolation of the Residual Heat Removal Sample Lines is initiated either manually or automatically on all automatic initiations of safety injection. In addition, provide the results of your engineering design review to determine whether automatic isolation of these lines is required.

Response

The four conductivity sample lines from the Residual Heat Removal System heat exchangers as discussed in question 2 above do not presently have automatic isolation on all automatic initiations of the Core Standby Coolant Systems. This situation will be remedied by adding solenoid valves in each sample line to be controlled by the Primary Containment Isolation System.

Item 2, Question 5

5. Provide a schedule for any actions on item 2 that have not yet been completed.

Response

Our present goal is to procure, install and test the Residual Heat Removal System heat exchanger conductivity sample line isolation valves by December 31, 1979. Until that time, manual isolation will continue to be accomplished as discussed in our response to IE Bulletin 79-08.

Item 7, Question 1

Provide the results of your review of the design of systems capable of transferring radioactive gases and liquids out of containment.

Response

1. The review for the inadvertent release paths has been completed. No pathways were found which could inadvertently transfer either radioactive liquid or gas out of primary containment. Those engineered safety features (ESF) systems which are not required to initiate in the event of an accident are isolated and interlocked to prevent inadvertent transfer of radioactive liquids and gases. Those ESF systems which are required following an accident are not isolated.

Item 7, Question 2

2. Verify that inadvertent transfer of radioactive gases or liquids from containment will not occur on resetting engineered safety features instrumentation.

Response

No means were found which could result in an inadvertent transfer of radioactive liquid or gas due to the resetting of engineered safety features (ESF) instrumentation. The ESF system designs are such that an action is carried to completion. Resetting of the isolation requires manual operator action under controlled conditions following instrumentation reset.

Item 7, Question 3

3. Discuss the basis upon which continued operability is assured of the features designed to prevent inadvertent transfer of radioactive gases and liquids out of containment.

Response

The functional capability of the Primary Containment Isolation Systems is verified by Technical Specification mandated surveillance tests as follows:

- a) All of the initiating devices are functionally tested every month.
- b) Each logic system is functionally tested every 6 months.

Additionally, administrative procedures assure that these systems are not worked on without specific approval of shift supervision. Work is performed in accordance with approved work procedures.

Item 8, Question 1

1. We understand from your response that operability tests are performed on redundant safety-related systems prior to removal of any safety-related system from service. Since you may be relying on prior operability verification within the current Technical Specification surveillance interval, operability should be further verified by at least a visual check of the system to the extent practicable, prior to removing the redundant equipment from service. Please supplement your response to provide a commitment that you will revise your maintenance and test procedures to adopt this position.

Response

We have revised our "Procedure for Corrective Maintenance" to require that "Shift Supervision shall verify by test or inspection the operability of redundant safety-related (Q-listed) systems required by the Technical Specifications."

The applicable test procedures have been reviewed and revised as necessary to require that any testing that could adversely affect the operability or reliability of a safety-related system is not permitted until verification of any redundant safety-related systems is either done by test or inspection.

Item 8, Question 2

- 2 It is not clear from your response that all involved reactor operational personnel in the oncoming shift are explicitly notified above the status of systems removed from or returned to service. Please indicate how this information is transferred at shift turnover.

Response

Shift Supervision and Operators reporting for duty receive a verbal report from the previous shift covering the following:

- a. General operating condition of the plant.
- b. Specific operations performed and difficulties encountered during the previous shift.
- c. Scheduled plant operations.
- d. Equipment outages and maintenance work in progress.
- e. Status of all safety related equipment and conditions.



In addition, Shift Supervision and Operators read past entries in the applicable logs to familiarize themselves with recent plant performance, operations, and problems. The on-coming man assumes shift responsibility at this point.

Following shift relief, Shift Supervision and Operators make an inspection of instruments, equipment, and areas under their control as early as possible during their shift unless specifically directed otherwise by Shift Supervision or Station Supervision. During this inspection, priority is given to work areas identified by the previous shift. This inspection includes a test of Control Room annunciators to verify their operability and a front panel check of ECCS to verify switch, valve and controller status.

In addition, tags are used in the Control Room to indicate the system and equipment status. These tags are used for mechanical and electrical blocking of equipment and for information regarding equipment status. The tags do not obscure indicating lights or controls when mounted on the control board.

A meeting is held in the Control Room at the beginning of each shift. The meeting includes all shift personnel and is lead by the Shift Superintendent and covers applicable topics as follows:

1. Plant status
2. Special operations taking place.
3. Significant maintenance
4. Operating procedure changes
5. Tech. Spec. changes.
6. Scheduled operations
7. Shift Superintendent's goals for that shift.

Item 10, Question 1

1. The existing procedures are stated to be under revision. Please provide your schedule for completion.

Response:

The existing procedures are presently undergoing review and revision with final PORC approval expected prior to August 25, 1979.

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

Very truly yours,



Attachment

cc: United States Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Division of Reactor Operations Inspection  
Washington, DC 20555



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# Peach Bottom Atomic Power Station - Units 2 & 3 Containment Isolation Valves

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Pos. Number	Line Description	Fluid Contained	Line Size	Valve Number	Valve Location	Valve Type	Isolation Group (signals)
N-7A to D	Main Steam	steam	26"	AO-2-80A to D AO-2-86A to D	Inside Outside	GB GB	I (A,B,C,D,E) I (A,B,C,D,E)
N-8	Main Steam Drain	steam/water	3"	AO-2-74 AO-2-77	Inside Outside	GB GB	I (A,B,C,D,E) I (A,B,C,D,E)
N-9A	Feedwater	water	24"	2-28A 2-96A MO-2-38A MO-23-19	Inside Outside Outside Outside	CK CK GT GT	- - II (A,B,F) RM
N-9B	Feedwater	water	24"	2-28B 2-96B MO-13-21 MO-12-68 MO-2-38B	Inside Outside Outside Outside Outside	CK CK GT GB GT	- - RM II (A,C,D,G) II (A,B,F)
N-10	Steam to RCIC Turbine	steam	3"	MO-13-15 MO-13-16	Inside Outside	GT GT	II (A,B,C) II (A,B,C)
N-11	Steam to HPCI Turbine	steam	10"	MO-23-15 MO-23-16	Inside Outside	GT GT	I (A,B,C) I (A,B,C)
N-12	RHR Shutdown Cooling Section	water	20"	MO-10-17 MO-10-18	Inside Outside	GT GT	II (A,B,E) II (A,B,E)
N-13A,B	RHR Shutdown Cooling Return	water	24"	MO-10-25A,B AO-10-46A,B AO-10-163A,B	Outside Inside "	GT CK DCV	I (A,B) - if in shutdown cooling RMP
N-14	RWCU Pump Suction	water	6"	MO-12-15 MO-12-18	Inside Outside	GT GT	II (A,C,D,G) II (A,C,D,G)
N-16A,B	Core Spray Pump Discharge	water	12"	MO-14-11A,B AO-14-13A,B AO-14-15A,B	Outside Inside "	GT CK DCV	RM - RMP
N-17	RHR Head Spray	water	6"	MO-10-32 MO-10-33	Inside Outside	GT GT	II (A,B,E) II (A,B,E)
N-18	Drywell Fl. Dr. Pump Disch.	water	3"	AO-20-82 AO-20-83	Outside Outside	DCV DCV	II (A,B) I (A,B)
N-19	Drywell Equip. Dr. Pump Disch.	water	3"	AO-20-94 AO-20-95	Outside Outside	DCV DCV	II (A,B) II (A,B)
N-21	Service Air Supply	air	1"	- -	Inside Inside	GB GB	LC LC
N-22	Inst. Gas Supply	air	1"	AO-2769A	Outside Outside	CK DCV	II (A,B)

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Tag No.	Description	Unit	Material	Size	Location	Notes
N-23	RECW To Recirc. Pumps	1	water	4"	Outside	RM
N-24	RBCW from Recirc. Pumps	2	water	4"	Outside	RM
N-25	Drywall Purge Supply	3	air	18"	Outside	RM
N-26	Drywall Purge Exhaust	4	air	18"	Outside	RM
N-27E,F	Inst. Lines - Core Plate Pressure	5	water	1"	Inside	RM
N-28A,B,C,E,F	Inst. Lines - RPV Level + Pressure	6	water/steam	1"	Inside	RM
N-28D	Inst. Lines - RPV Head Pressure	7	steam	1"	Inside	RM
N-29A,B,E,F	Inst. Lines - RPV Level + Pressure	8	water/steam	1"	Inside	RM
N-30A,B,C,D	Inst. Lines - Main Stem. Pressure	9	steam	1"	Inside	RM
N-30E,F	Inst. Lines - Recirc. Loop B Flow	10	water	1"	Outside	RM
N-31A,B	Inst. Lines - Recirc. Loop A Flow	11	water	1"	Outside	RM
N-32C,D	Inst. Lines - CS Inj. Pressure	12	air	1"	Outside	RM
N-33A,B,C,D	Inst. Lines - Recirc. Pump AP	13	water	1"	Inside	RM
N-33E	Inst. Line - Recirc. Pump Motor Cooler Flow	14	water	1"	Outside	RM
N-33F	Inst. Line - Drywall Pressure	15	air	1"	Outside	RM

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N-34A,D Inst. Lines - Main Stem. Pressure

N-34E,F Inst. Lines - HPCI Stem. Pressure

N-35A,E TIP Drives

N-35F TIP Purge

N-36 CRD Return

N-37A,D CRD Insert

N-38A,D CRD Withdrawal

N-39A,B RHR Containment Spray

N-40A,D Inst. Lines - Jet Pumps

N-41 Recirc. Loop Sample

N-42 Standby Liquid Control

N-46A,B Inst. Lines - Unit 3, Drywell Pressure

N-49A,B,C Inst. Lines - Unit 3, Drywell Pressure

N-49E,F Inst. Lines - Unit 2, Drywell Pressure

N-50A Inst. Line - Recirc. Suct. Pressure

N-50B,C Inst. Lines - RAC Sftm. Pressure

N-50Q,R Inst. Lines - RACU Pump Suct. Pressure

N-51A,B CACS Sample Lines

N-51C CACS Sample Line

atmos.

steam

air

air

water

water

water

water/air

water

water

Sodium  
Hydroxide  
Solution  
air

air

air

water

steam

water

air

air

1"

1"

3/8"

1"

4"

1"

1"

1 1/4"

1"

3/4"

1 1/2"

1"

1"

1"

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73B,D,E,H  
37A,B3-113  
3-11010-10-31A,B  
10-10-26A,B  
SV-4948A,B  
SV-4949A,BAQ-2-39  
AQ-2-4011-16  
11-1710-53A,C  
10-60A,C10-53B,D  
10-60B,D10-53A,C  
10-60A,C

305A

54A,B

125A,B  
66A,BSV-2671E,D  
SV-2978B,DSV-4966C  
SV-2671C  
SV-2978C  
SV-4960C  
SV-4961CInside  
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N-200A	RHR Test + Pool Cooling Return	water	18"	MO-10-34AB MO-14A,B,C,D	Outside	GB CK	III
N-211A	RHR Torus Spray	water	6"	MO-10-38AB MO-18-39A MO-10-34AB SV-4458A,B SV-4451A,B	Outside " " " "	GB GT GT SV SV	III III III RM RM
N-212	RKC Turbine Exhaust	water	12"	13-9 13-5D AO-424D AO-4241 AO-4244	Outside " " " "	SCK CK CK DCV GT	- - - - II (C,D,E)
N-213	Torus Drain (with level inst. line)	water	1"	-	Outside	GB	H
N-214	HPCI Turbine Exhaust	water	24"	23-12 23-65 AO-4247 AO-4248 MO-4244A	Outside " " " "	SCK CK DCV DCV GT	- - - - V (C,D,E)
N-215	Inlet Line - Unit 2, Torus Level	air	1"	-	Outside	GB	H
N-216	HPCI Min. Flow	water	4"	23-62	Outside	CK	-
N-217B	HPCI + RKC Vacuum Relief	air	2"	MO-4244A MO-4244	Outside	GT GT CK	I (C,D,E) II (C,D,E)
N-218A	Inst. Gas Supply	air	1"	AO-246B	Outside	DCV	II (A,B)
N-218B	CHKS Sample Line	air	1"	SV-2671A SV-2978A	Outside	SV SV	III III
N-218C	ILRT Connection	air	3/4"	-	Outside	GB(2)	LC
N-219	Torus Purge Exhaust	air	18"	AO-2511 AO-2512 AO-2513 AO-2514 SV-2671F SV-2978F SV-4460A SV-4461A SV-4466A	Outside " " " " " " " "	B B DCV DCV SV SV SV SV SV	III III III III III III RM RM RM
N-221	RKC Vacuum Pump Discharge	air	2"	13-10 13-38	Outside	SCK CK	-

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N-223	HPCI Turbine Drain	water	2"	23-13 23-56	Outside	SCK CK	-
N-224	Core Spray Test Line - Unit 2	water	10"	110-14-26A 14-66A,C	Outside	GB CK(3)	VI
N-225	CS + Torus Water Cleanup Section	water	6"	110-13-41 110-13-39 110-14-70 110-14-71	-	GT GT GT	RI II (A,B) I (A,B)
N-226A,B,D	RHR Pump Suction	water	24"	110-10-13A,B RV-10-72A,B	Outside	GT RV	RI
N-227	HPCI Pump Suction	water	16"	110-23-58 110-23-57	Outside	GT GT	I (A,B,C) I (A,B,C)
N-228A,B,D	CS Pump Suction	water	16"	110-14-74E,D	Outside	GT	RI
N-229	CS Pump Min. Flow - Unit 2	water	4"	14-66A,D 13-29	Outside	CK(4) CK	-
N-230	RCIC Pump Min. Flow	water	2"		Outside		-
N-233	HPCI Test Line - Unit 2	water	4"	110-23-31	Outside	GT	V (D,F)
N-234	CS Test Line - Unit 2	water	10"	110-14-26B	Outside	GB CK(3)	VI
N-234A	CS Test Line - Unit 3	water	10"	110-14-26B	Outside	GB CK(3)	VI
N-234B	CS Test Line - Unit 3	water	10"	110-14-26A	Outside	GB CK(3)	VI
N-235	HPCI Test Line - Unit 3	water	4"	110-23-31	Outside	GT	V (D,F)
N-236A	CS Pump Min. Flow - Unit 3	water	4"	14-66B,D	Outside	CK	-
N-236B	CS Pump Min. Flow - Unit 3	water	4"	14-66A,C	Outside	CK(4)	-
N-250	Inst Line - Unit 3, Torus Level	air	1"	-	Outside	GB	M

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# Notes:

## 1) Valve Types:

GB - Globe  
GT - Gate  
CK - Check  
BL - Ball  
B - Butterfly  
SV - Solenoid  
RV - Relief  
SCK - Stop Check

DEV - Diaphragm Control Valve  
VB - Vacuum Breaker  
XV - Explosive Valve  
RO - Restricting Orifice  
BCK - Ball Check  
HCU - Hydraulic Control Unit  
XFCV - Excess Flow Check Valve

## 2) Isolation Signals:

### Group I

A. Reactor Low Water Level (-48")  
B. High Steam Line Flow (140%)  
C. High Steam Tunnel Temp (200°F)  
D. Low Steam Line Pressure (850 psi in Run mode)  
E. High Steam Line Radiation (3X normal)

### Group II

A. Reactor Low Water Level (0")  
B. High Drywall Pressure (2 psig)  
C. RWCU High Flow (300%)  
D. RWCU non-regen. heat exch. high Temp (200°F)\*  
E. High Reactor Pressure (shutdown cooling - 175 psig)  
F. High Reactor Pressure (600 psig)  
G. Standby Liquid Control System Operation\*

### Group III

A. Reactor Low Water Level (0")  
B. High Drywall Pressure (2 psig)  
C. Reactor Bldg. High Radiation (16 mc/hr)  
D. Refueling Floor High Rad. (16 mc/hr)

### Group IV

A. RCIC Steam Line High Flow (300%)  
B. RCIC Steam Tunnel High Temp (200°F)  
C. RCIC Steam Line Low Pressure (50 psig)\*  
D. High Drywall Pressure (2 psig)  
E. RCIC Steam Line Isolated

### Group V

A. HPCI Steam Line High Flow (300%)  
B. HPCI Steam Tunnel High Temp (200°F)  
C. HPCI Steam Line Low Pressure (100 psig)\*  
D. High Drywall Pressure (2 psig)  
E. HPCI Steam Line Isolated  
F. Reactor Low Water Level (-48")

### Group VI

A. Reactor Low Water Level (-144")  
B. High Drywall Pressure (2 psig)

### Group VII

A. LPCI Initiation:  
(Reactor Low Water Level (-144")  
(High Drywall Pressure (2 psig)  
& Reactor Low Pressure (450 psig))

### RM - Remote Manual

M - Manual (local only)

LC - Locked Closed

TT - Turbine Trip

RNP - Push Button, momentary contact opens valve for test

## \* Process Signals

## 3) Value Numbering:

All value numbers apply to both units, except 4 digit numbers. For those values, the first digit designates the unit:

2 or 4 - Unit 2  
3 or 5 - Unit 3

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