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August 28, 1979

Director of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Attn: A. Schwencer, Chief  
Operating Reactors Branch No. 1  
Division of Operating Reactors  
Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1  
Docket No. 50-334  
Supplemental Information On Response To IE Bulletin 79-01 and 79-01A

Gentlemen:

The purpose of this letter is to provide an integrated, updated response to IE Bulletins 79-01 and 79-01A which concerned qualifications of electrical equipment located within the Beaver Valley Unit No. 1 Containment Structure.

We have determined that certain electrical control wires and terminal blocks, which are presently installed, have either never been qualified by testing or are lacking in sufficient documentation to verify that the installed equipment was manufactured during a time period when the manufactured product was identical to similar equipment which had been qualified.

We later identified that numerous ASCO 125 volt solenoid operated pilot valves which are installed in the same circuits are definitely not qualified for operation in the post LOCA environment.

A complete list of the circuits which contain the nonqualified solenoids and questionable terminal blocks and control wiring is attached. The station On-Site Safety Committee met to discuss these matters and concluded that all solenoid valves would be deenergized upon receipt of an accident signal. The deenergization of these pilot solenoids would cause these three way valves to remove the air supply from the diaphragms of the valves which they actuate and vent the air from the diaphragms. This action would permit the valves to spring closed to their required post accident positions. In addition, each of the involved valves which serves a containment isolation function inside the containment is in a line that has an installed automatic isolation valve outside the containment. The pilot valves for the valves outside the containment are installed in such locations that they are qualified for the post accident environment to which they could be subjected.

A review was performed to determine which of the valves which are located within the containment might have cause to be operated during the post accident recovery period. The wiring to these solenoid valves was replaced with a qualified wire with sufficient documentation to provide traceability of the newly installed wire.

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The solenoid pilot valves located in the containment which the station staff determined might have cause to be operated subsequent to the accident were changed out "in kind." This action provided valves for these applications with a maximum amount of remaining service life.

We have further been informed by ASCO that many of our solenoids are categorized as Type HP, which is a heavy duty type of solenoid operator. Should we choose to replace these with the NP type which is presently recommended for nuclear applications we shall have to reduce the orifice size in the pilot valve from that which is presently installed. Such an action will increase the amount of time required to vent the valve upon deenergization and will affect the tripping time of the associated diaphragm operated valve. Since the allowable tripping time of each of the containment isolation valves is identified in the technical specifications, we must first verify that an increase in the present operating time will not result in an unacceptable operating time. Our Engineering Department is presently studying this problem. We plan to replace all unqualified solenoid valves within the containment during our fall refueling outage.

We have arranged to perform qualification tests on Meter Device Corporation terminal blocks similar to those which are located within the containment. These terminal blocks will be tested at the Forest Hills Laboratories of the Westinghouse Electric Corporation. We anticipate that the testing will be completed by the end of August. A report of the results of these tests will be forwarded to you as soon as the report is available.

We have revised our emergency procedures to include steps to remove electric power from these solenoid circuits and to shut down the containment air compressors which provide the air supply to these valves in the event of accidents that could cause an increase in containment temperature and humidity. We believe that these actions in combination with the redundant containment isolation valves which are located outside the containment provide adequate assurance that continued operation of the station until these matters are resolved will not constitute a threat to the health and safety of the public.

We have verified that the existing breaker coordination scheme on the DC Battery Buses will assure that the failure of any of the distribution breakers in the cabinets supplying the solenoid valves will not result in the loss of other essential loads supplied from the station battery.

We have also determined that four steam generator level instrument transmitters are located at an elevation within the containment such that these four instruments will be submerged during the recirculation phase of post LOCA operation.

All three of the narrow range level transmitters on the 'B' Steam Generator and one of the narrow range level transmitters on the 'C' Steam Generator have the potential to become submerged.

The station On-Site Safety Committee determined that this condition was acceptable for continued operation until the fall refueling at which time these level transmitters will be relocated to a higher elevation.

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The logic used to arrive at this determination was as follows:

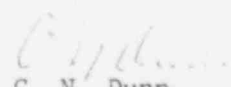
1. All three steam generators are equipped with a wide range level transmitter which can be utilized to verify the water level of the steam generators.
2. A single steam generator provides an adequate heat sink subsequent to a reactor trip and prior to the start up of the residual heat removal system to provide core cooling.
3. One steam generator has all three narrow range level transmitters and one other steam generator has two narrow range level transmitters located above the maximum containment post accident water level. This fact assures that redundant level transmitters are available on two out of three of the steam generators even in the event that the maximum post accident water level is achieved.
4. The protection functions that are associated with the narrow range steam generator level transmitters are performed within the first minutes of the accident at which time the transmitters of concern will not be submerged.

We have been informed by the Westinghouse Electric Corporation that all steam generator level transmitters on Beaver Valley Unit No. 1 have been qualified in accordance with IEEE-323-1971 as described in WCAP 7794 and in Appendix B to WCAP 7410-L.

The level transmitters installed at Beaver Valley are Barton Model No. 386. This model is described in the Barton Catalog as suitable for high temperature service. Another Barton model is described as being suitable for explosion proof applications. These facts have caused us to conclude that the existing level transmitters at Beaver Valley would probably not be suitable for submerged service since they are not equipped with the vapor tight enclosures that are normally provided for explosion proof applications. We therefore will relocate the four narrow range steam generator level transmitters to a higher elevation during the fall refueling outage.

If you have any further questions concerning this supplemental information, please contact my office.

Very truly yours,

  
C. N. Dunn  
Vice President, Operations

Attachment

cc: D. Beckman  
Region I  
King of Prussia, Pa.

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DUQUESNE LIGHT COMPANY  
Beaver Valley Power Station

VUL - Vulkene  
CONT - Continental  
ROCK - Rockbestos

RM - 11700 - XXX  
E - Energized  
DE - De-energized

O - Open  
S - Shut  
N/A - Not Applicable

Q - Qualified  
Non-Q - Non-qualified

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## TERMINALS STRIPS

MD - Meter Device  
Mount - V-Vertical  
H-Horizontal

Location  
C-Center of Box  
TC-Top Center of

VALVE #	TITLE	NORM POS.	ACC POS.	FAIL SAFE POS.	SOV	NORM POS.	ACC POS.	F.S. POS.	RM DWG	SOV MANUF.	SOV MODEL # / S/N	MANU. SIS WIRE	O OR NON Q	T/B NUM.	TERM STRIP TYPE, SIZE, MOUNT, LOC.	ISOLATION VALVE #	RE DWG
1. TV-CC-103B1	"B" RCP Inlet Isolation	O	S	S	SOV-CC-103B1	E	DE	DE	157D	ASCO	HPX8320A26 S/N 92252A	Vulkene	Q	662	MD, 12 V, C	TV-CC-103B	RE-3BX
2. TV-CC-103C1	"C" RCP Cool Inlet Iso	O	S	S	SOV-CC-103C1	E	DE	DE	157D	ASCO	HPX8320A26 S/N 92252A	Cont	Non-Q	702	MD, 12 V, C	TV-CC-103C	RE-3BP
3. TV-CC-105A	"A" RCP Cool Inlet Header	O	S	S	SOV-CC-105A	E	DE	DE	157D	ASCO	HPX8320A26 S/N 20379A	Rock		653	MD, 6 V, C	TV-CC-105E2	RE-3BM
4. TV-CC-105B	"B" RCP Cool Inlet Hdr.	O	S	S	SOV-CC-105B	E	DE	DE	157D	ASCO	HPX9320A26 S/N 20379A	Rock		664	MD, 12 V, C	TV-CC-105D2	RE-3BN
5. TV-CC-105C	"C" RCP Cool Inlet Hdr	O	S	S	SOV-CC-105C	E	DE	DE	157D	ASCO	HPX8320A26 S/N 45235A	Cont	Non-Q	704	MD, 12 V, C	TV-CC-105D2	RE-3BN
6. TV-CC-105D1	RCP Cool Outlet	O	S	S	SOV-CC-105D	E	DE	DE	157D	NO	Name Tag	Vul	Q	703	MD, 12 V, C	TV-CC-105D3	RE-3BP
7. TV-CC-105E1	RCP Cool, Wat. Disch	O	S	S	SOV-CC-105E1	E	DE	DE	157D	ASCO	HPX8320A26 S/N 78152A	Rock		649	MD, 12 V, C	TV-CC-105E3	RE-3BM
8. TV-CC-107A	RCP Therm Barr Disch	O	S	S	SOV-CC-107A	E	DE	DE	157D	No	Name Tag	Conc	Non-Q	652	MD, 8 V, C	TV-CC-105D2	RE-3BM
9. TV-CC-107B	RCP Therm Barr. Disch	O	S	S	SOV-CC-107B	E	DE	DE	157D	ASCO	HPX9320A26 S/N 92252A	Rock		665	MD, 12 H, C	TV-CC-107D2	RE-3BN
10. TV-CC-107C	RCP Therm Barr Disch	O	S	S	SOV-CC-107C	E	DE	DE	157D	ASCO	HPX 9320A26 S/N 55287A	Cont	Non-Q	705	MD, 6 V, C	TV-CC-107D2	RE-3BN
11. TV-CC-107D1	RCP Therm Barr Disch	O	S	S	SOV-CC-107C1	E	DE	DE	157D	ASCO	HPX8320A26 S/N 88277A	Cont	Non-Q	663		TV-CC-107D2	RE-3BN
12. TV-CC-107E1	RCP Therm Barr Disch	O	S	S	SOV-CC-107E1	E	DE	DE	157D	ASCO	HPX8320A26 S/N 67534A	Cont	Non-Q	650		TV-CC-107E2	RE-3BM
13. TV-CC-110A	Cont. Recirc AirCool Inlet	O	S	S	SOV-CC-110A	E	DE	DE	22C	No	Name Tag	Vul	Q	699	MD, 6 H, C	TV-CC-110E2	RE-3BX
14. TV-CC-110B	Cont Recirc AirCool Inlet	S	S	S	SOV-CC-110B	DE	DE	DE	22C	ASCO	HPX9320A26 S/N 88277A	Vul	Q	700	MD, 6 H, C	TV-CC-110E2	RE-3BX
15. TV-CC-110C	Cont Recirc AirCool Inlet	S	S	S	SOV-CC-110C	DE	DE	DE	22C	ASCO	HPX8320A26 S/N 88277A	Vul	Q	701	MD, 6 H, C	TV-CC-110E2	RE-3BX
16. TV-CC-110D	Cont. Recirc AirCool Disch	O	S	S	SOV-CC-110D	E	DE	DE	22C	ASCO	HPX8320A26 S/N 92252A	Vul	Q	677		TV-CC-110F1 TV-CC-110F2	RE-3BN
17. TV-CC-110E3	Cont Recirc Clrs, N. Iso	O	S	S	SOV-CC-110E3	E	DE	DE	22C	ASCO	HPX9320A26 S/N 92252A	Vul	Q	676	MD, 12 V, C	TV-CC-110E2 ISO 285	RE-3BN
18. TV-CC-111A2	CRDM Shroud CLR. Supply	O	S	S	SOV-CC-111A2	E	DE	DE	157C	ASCO	HPX8320A26 S/N 92252A	Vul	Q	680	MD, 12 V, C	TV-CC-111A1	RE-3BS
19. TV-CC-111D1	CRDM Shroud CLR Disc.	O	S	S	SOV-CC-111D1	E	DE	DE	RM-157	ASCO	HPX8320A26 593508	Vul	Q	TB-681		TV-CC-111D2	RE-3BS

ROCK - Rockbeston

DE - De-energized

N/A - Not Applicable

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-Vertical C-C

C-Center of :

VALVE #	TITLE	NORM POS.	ACC POS.	FAIL SAFE POS.	SOV	NORM POS.	ACC POS.	F.S. POS.	RH DMC MANUF.	SOV MODEL# / S/N	SIS WIRF	Q OR NON Q	T/B NUM.	TERM STRIP TYPE, SIZE, MOUNT, LOC.	ISOLATION VALVE #	RE Dwg
20. TV-CH-200A	Regen Hx Disc	O	S	S	SOV-CH-200A	E	DE	DE	RM-159A	ASCO	Cont	Non-Q	TB-566	MD, 12	TV-CH-204	RE-3FB
1. TV-CH-200B	Regen Hx Disc	S	S	S	SOV-CH-200B	DE	DE	DE	RM-159A	ASCO	Cont	Non-Q	TB-567	V, C	TV-CH-204	RE-3FA
2. TV-CH-200C	Regen Hx Disc	S	S	S	SOV-CH-200C	DE	DE	DE	RM-159A	ASCO	Cont	Non-Q	TB-568	MD, 12	TV-CH-204	RE-3FA
3. TV-CV-102-1	Air Act Mont Outlet	O	S	S	SOV-CV-102-1	E	DE	DE	RM-168A	ASCO	Rock	Non-Q	TB-090	MD, 12	TV-CV-102	RE-3BT
4. TV-LM-101A	Cont. Sealed Press Sys.	S	S	S	SOV-LM-101A	DE	DE	DE	RM-168A	ASCO	Cont	Non-Q	TB-1008	V, C	ICV-35 and IV-LM-100A1 norm. closed	RE-3BF
5. TV-LM-101B	Cont. Sealed Press Sys	S	S	S	SOV-LM-101B	DE	DE	DE	RM-168A	ASCO	Cont	Non-Q	TB-1009	MD, 12	ICV-36 and IV-LM-100A1 norm. closed	RE-3BT
6. TV-SI-101-2	H <sub>2</sub> to SI Accum.	S	S	S	SOV-SI-101-2	DE	DE	DE	RM-167A	ASCO	Cont	Non-Q	TB-673	V, C	IV-SI-101-1 (norm. closed)	RE-3BP
7. TV-DA-100A	RC Sump Pump Disc	S	S	S	SCV-DA-100A	DE	DE	DE	RM-169A	ASCO	Cont	Non-Q	TB-520	MD, 12	IV-DA-100B	RE-3FE
8. TV-DG-108A	Prim Dr Trans Disc. Isol	S	S	S	SOV-DG-108A	DE	DE	DE	RM-169A	ASCO	Rock	Non-Q	TB-631	MD, 12	IV-DG-108B	RE-3BM
9. TV-DG-109A2	Prim Dr Trans Tank Vent	S	S	S	SOV-DG-109A2	DE	DE	DE	RM-169A	(Name Plate Missing)	Vu1	Q	TB-632	MD, 12	IV-DG-109A1	RE-3BH
0. TV-SS-109A1	Acc. H <sub>2</sub> O Samp	O	S	S	SOV-SS-000A	E	DE	DE	179A	ASCO	Cont	Non-Q	654	MD	IV-SS-109A2	RE-3BR
1. TV-SS-102A1	Cold Leg Sample	O	S	S	SOV-SS-000A				179A					3 Sets 12	IV-SS-102A2	
2. TV-SS-105A1	Hot Leg Sample	O	S	S	SOV-SS-000A				179A					V, TC	IV-SS-105A2	
3. TV-SS-111A1	PZR Rel Tk. Gas Samp.	O	S	S	SOV-SS-000A				179A						IV-SS-111A2	
4. TV-SS-100A1	PZR LIq. Samp. Lines	O	S	S	SOV-SS-000A				179A						IV-SS-100A2	
5. TV-SS-112A1	PZR Vapor Samp. Line	O	S	S	SOV-SS-000A				179A						IV-SS-112A2	



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DUQUESNE LIGHT COMPANY  
Beaver Valley Power Station

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VUL - Vulkene  
 CONT - Continental  
 ROCK - Rockbestos

RM - 11700 - XXX  
 E - Energized  
 DE - De-energized

Q - Qualified  
 Non-Q - Non-qualified  
 N/A - Not Applicable

0 - Open  
 S - Shut  
 N/A - Not Applicable

SIS WIRE  
 RM - 11700 - XXX  
 E - Energized  
 DE - De-energized

MD - Meter Devices  
 Mount-V-Vertical  
 H-Horizontal

TERMINALS STRIPS  
 Location  
 C-Center of Box  
 TC-Top Center of B

VALVE #	TITLE	NORM POS.	ACC POS.	FAIL SAFE POS.	SOV	NORM POS.	ACC POS.	F.S. POS.	RM DMC	SOV MANUF.	SOV MODEL # / S/N	MANU. SIS WIRE	Q OR NON Q	T/B NUM.	TERM STRIP TYPE, SIZE MOUNT, LOC	ISOLATION VALVE #	RE DMC
36. TV-SS-104A1	RHR Outlet	0	S	S	SOV-SS-000A				179A						MD, 12 3 Sets 12	TV-SS-104A2	RE DMC
37. TV-SS-103A1	Reg Ht Rem Inlet	0	S	S	SOV-SS-000A				179A						V, TC	TV-SS-103A2	
38. LCV-CH-460A	Rgn. Hx Inlet	0	S	S	SOV-CH-460A	E	DE	DE	159A	ASCO	LB831654 S/N 63640T1	Rock		667	MD, 12 H, TC	TV-CH-204	RE-3BV
39. LCV-CH-460B	Rgn Hx Inlet	0	S	S	SOV-CH-460P	E	DE	DE	159A	ASCO	LB831654 S/N 63640T1	Rock		669	MD, 12 H, TC	TV-CH-204	RE-3BV
40. PCV-RC-455C	PZR Press Relief	S	S	S	SOV-RC-455D1 SOV-RC-455D2	DE	DE	DE	155B	ASCO	LB831654 S/N 6918 F	Cont	Non-Q	714 716	MD, 12, V, C MD, 16, H, C	N/A	RE-3BV
41. PCV-RC-456	PZR Press Relief	S	S	S	SOV-RC-456-1 SOV-RC-451-2	DE	DE	DE	155B	ASCO	LB831654 S/N - None	Cont	Non-Q	1106	MD, 12 V, C	N/A	RE-3BV
42. PCV-RC-455C	PZR Press Relief	0	S	S	SOV-RC-455C1 SOV-RC-455C2	E	DE	DE	155B	ASCO	LB931654 S/N 69180F	Cont	Non-Q	715	MD, 12 V, C	N/A	RE-3BV
43. TV-CC-103A1	RCP A CLNG In. Iso.	0	S	S	SOV-CC-103A1	E	DE	DE	157D	No	Name Plate	Vul	Q	648	MD, 12 V, C	TV-CC-103A	RE-3RRT

