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PHILADELPHIA ELECTRIC COMPANY

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PHILADELPHIA, PA. 19101

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SHIELDS L. DALTRIFF  
VICE PRESIDENT  
ELECTRIC PRODUCTION

January 29, 1979

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

IE Bulletin 78-14

Mr. Boyce H. Grier, Director  
Office of Inspection and Enforcement  
Region 1  
United States Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

Dear Mr. Grier:

This letter is in response to IE Bulletin No. 78-14, which you forwarded to us on December 19, 1978, concerning the deterioration of Buna-N components in ASCO solenoids used in control rod scram systems. The "Action to be Taken by Licensees" and our responses are treated sequentially.

Action to be Taken by Licensee

1. Review Buna-N material applications in your control rod scram system and determine the time since installation, and for installed material, the time since packaging.

Response

The Peach Bottom Unit 2 control rod drive (CRD) equipment was delivered to the site in the third week of 1970 and the Unit 3 CRD equipment was delivered in the 43th week of 1971. Initial criticality for Units 2 and 3 occurred on September 16, 1973, and August 7, 1974, respectively. The dates that the Buna-N components were installed in the valves and the dates for packaging of components have not been obtained.

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The CRD scram pilot valves are listed by CRD Unit numbers in Tables I and II with the dates on which specified Buna-N parts were replaced on Peach Bottom Units 2 and 3 respectively. The packaging dates for replacement parts already installed are unavailable.

2. Report the results of the review set forth in item 1 above and describe your schedule for replacement, both in response to this Bulletin and for periodic maintenance.

Response

Results of the review of item 1 is stated in item 1 and listed in Tables I and II.

The recommended replacement of Buna-N components set forth in General Electric SIL No. 123, Revision 1, Supplement 1, will be completed by the end of each unit's next refueling outage in CRD scram system solenoid valves. For Peach Bottom Units No. 2 and 3 respectively, the next refueling outages are tentatively scheduled for the Spring of 1980 and the Fall of 1979. In an effort to expedite this work, maintenance will be done on as many solenoid valves as is practicable during outages which may occur prior to the next fuel cycle.

3. Describe the bases for your schedule of replacement identified in response to item 2 above. Justify any proposed replacement time in excess of three years.

Response

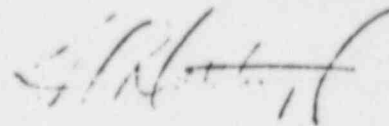
Philadelphia Electric Company embarked upon a periodic maintenance program in accordance with recommendations found in General Electric SIL No. 123, March 21, 1973 and General Electric SIL No. 123, Revision 1 January 30, 1973 following their issuance. The scope of the maintenance work that has been completed is listed in Tables I and II. The maintenance program was subsequently altered to comply with the recommendations set forth in General Electric SIL No. 123 Revision 1, Supplement 1, August 1973. The maintenance work completed in accordance with the latest SIL is also listed in Tables I and II.

Some CRD scram pilot valves from both Peach Bottom Units have had Buna-N parts replaced in compliance with the most recent SIL. A representative sample of the Buna-N components which were replaced in the solenoid valves were inspected by the plant maintenance engineer. There were no component failures found, but evidence of hardening of some core assembly components and subassembly gaskets was observed.

A periodic maintenance program which follows the recommendations of General Electric SIL No. 120, Revision 1, Supplement 1 has been implemented. This SIL under Recommended Action states, "General Electric recommends that BWR operators establish a preventive maintenance program to replace all core assemblies, diaphragms and associated parts in all CRD scram pilot valves, backup scram valves, scram discharge volume vent and drain pilot valves, and scram discharge volume test valves at periodic intervals. The Buna-N parts used in these valves have at least a seven year shelf and in-service life from the packaging date on the rebuild kit. Thus, the valves should be rebuilt periodically to assure that the Buna-N parts are not used in excess of seven years. It is recommended that the work be scheduled in any one outage such that the associated CRDs are selected from a distributed checkerboard pattern. The remaining valves can be rebuilt during subsequent outages."

Peach Bottom Units No. 2 and 3 have experienced no solenoid valve failures related to deterioration of Buna-N material in CRD scram systems. This successful operating record, in conjunction with the results of our maintenance and inspection programs, and our past and present periodic replacement programs insure the reliability of the CRD scram system.

Very truly yours,



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

TABLE I

PEACH BOTTOM UNIT 2 CRD SCRAM SOLENOID MAINTENANCE

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
18-03	5/10/77	5/10/77	--	--
22-03	5/10/77	5/10/77	--	--
26-03	5/17/76	5/17/76	--	--
30-03	5/17/76	5/17/76	--	--
34-03*	9/25/78	9/25/78	9/25/78	9/25/78
38-03	--	--	--	--
42-03	--	--	--	--
1L-07	5/17/76	5/17/76	--	--
18-07	5/17/76	5/17/76	--	--
22-07	5/17/76	5/17/76	--	--
26-07	5/17/76	5/17/76	--	--
30-07	5/10/77	5/10/77	--	--
34-07	--	--	--	--
38-07	--	--	--	--
42-07	--	--	--	--
46-07*	9/25/78	9/25/78	9/25/78	9/25/78
10-11	--	--	--	--
14-11	--	--	--	--
18-11*	9/25/78	9/25/78	9/25/78	9/25/78
22-11	--	--	--	--
26-11	5/17/76	5/17/76	--	--
30-11	5/17/76	5/17/76	--	--
34-11	--	--	--	--
38-11	5/10/77	5/10/77	--	--
42-11	5/10/77	5/10/77	--	--
46-11	--	--	--	--
50-11	--	--	--	--
06-15	--	--	--	--
10-15*	9/25/78	9/25/78	9/25/78	9/25/78
14-15	--	--	--	--
18-15	--	--	--	--
22-15*	9/25/78	9/25/78	9/25/78	9/25/78
26-15	--	--	--	--
30-15	--	--	--	--
34-15	--	--	--	--
38-15	--	--	--	--
42-15	--	--	--	--

\* Valve replaced.

TABLE I (Cont'd)

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Caskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
46-15*	9/25/78	9/25/78	9/25/78	9/25/78
50-15	--	--	--	--
54-15	--	--	--	--
02-19	5/17/76	5/17/76	--	--
06-19	5/17/76	5/17/76	--	--
10-19	5/17/76	5/17/76	--	--
14-19	5/17/76	5/17/76	--	--
18-19	5/17/76	5/17/76	--	--
22-19	5/17/76	5/17/76	--	--
26-19	5/17/76	5/17/76	--	--
30-19	--	--	--	--
34-19*	9/25/78	9/25/78	9/25/78	9/25/78
38-19	5/17/76	5/17/76	--	--
42-19	5/17/76	5/17/76	--	--
46-19	5/17/76	5/17/76	--	--
50-19	5/17/76	5/17/76	--	--
54-19	5/17/76	5/17/76	--	--
58-19	5/17/76	5/17/76	--	--
02-23	--	--	--	--
06-23*	9/25/78	9/25/78	9/25/78	9/25/78
10-23	--	--	--	--
14-23	--	--	--	--
18-23*	9/25/78	9/25/78	9/25/78	9/25/78
22-23	--	--	--	--
26-23	--	--	--	--
30-23	5/17/76	5/17/76	--	--
34-23	5/17/76	5/17/76	--	--
38-23	5/17/76	5/17/76	--	--
42-23	5/17/76	5/17/76	--	--
46-23	--	--	--	--
50-23	--	--	--	--
54-23	--	--	--	--
58-23*	9/25/78	9/25/78	9/25/78	9/25/78
02-27	5/17/76	5/17/76	--	--
06-27	5/17/76	5/17/76	--	--
10-27	5/17/76	5/17/76	--	--
14-27	5/17/76	5/17/76	--	--

\* Valve replaced.

TABLE I (Cont'd)

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-Assembly Gaskets</u>
18-27	5/17/76	5/17/76	--	--
22-27	5/17/76	5/17/76	--	--
26-27	5/17/76	5/17/76	--	--
30-27	5/17/76	5/17/76	--	--
34-27	5/10/77	5/10/77	--	--
38-27	5/10/77	5/10/77	--	--
42-27	5/10/77	5/10/77	--	--
46-27	--	--	--	--
50-27*	9/25/78	9/25/78	--	--
54-27	--	--	--	--
58-27	--	--	--	--
02-31*	9/25/78	9/25/78	9/25/78	9/25/78
06-31	--	--	--	--
10-31	--	--	--	--
14-31*	9/25/78	9/25/78	9/25/78	9/25/78
18-31	--	--	--	--
22-31	5/10/77	5/10/77	--	--
26-31	5/10/77	5/10/77	--	--
30-31*	9/25/78	9/25/78	9/25/78	9/25/78
34-31	5/10/77	5/10/77	--	--
38-31	5/10/77	5/10/77	--	--
42-31	--	--	--	--
46-31*	9/25/78	9/25/78	9/25/78	9/25/78
50-31	--	--	--	--
54-31	--	--	--	--
58-31	--	--	--	--
02-35	--	--	--	--
06-35	--	--	--	--
10-35*	9/25/78	9/25/78	9/25/78	9/25/78
14-35	--	--	--	--
18-35	5/10/77	5/10/77	--	--
22-35	5/10/77	5/10/77	--	--
26-35	5/10/77	5/10/77	--	--
30-35	--	--	--	--
34-35	--	--	--	--
38-35	--	--	--	--
42-35*	9/25/78	9/25/78	9/25/78	9/25/78

\* Valve replaced.

TABLE I (Cont'd)

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
46-35	--	--	--	--
50-35	--	--	--	--
54-35	--	--	--	--
58-35	--	--	--	--
02-39	--	--	--	--
06-39	--	--	--	--
10-39	--	--	--	--
14-39	--	--	--	--
18-39	--	--	--	--
22-39*	9/25/78	9/25/78	9/25/78	9/25/78
26-39	--	--	--	--
30-39	--	--	--	--
34-39	5/17/76	5/17/76	--	--
38-39	5/17/76	5/17/76	--	--
42-39	5/17/76	5/17/76	--	--
46-39	5/17/76	5/17/76	--	--
50-39	5/17/76	5/17/76	--	--
54-39	--	--	--	--
58-39	--	--	--	--
02-43	5/17/76	5/17/76	--	--
06-43	5/17/76	5/17/76	--	--
10-43	5/17/76	5/17/76	--	--
14-43	5/17/76	5/17/76	--	--
18-43	5/17/76	5/17/76	--	--
22-43	--	--	--	--
26-43	5/17/76	5/17/76	--	--
30-43	5/17/76	5/17/76	--	--
34-43*	9/25/78	9/25/78	9/25/78	9/25/78
38-43	--	--	--	--
42-43*	9/25/78	9/25/78	9/25/78	9/25/78
46-43	--	--	--	--
50-43	--	--	--	--
54-43*	9/25/78	9/25/78	9/25/78	9/25/78
58-43	--	--	--	--
06-47	--	--	--	--
10-47*	9/25/78	9/25/78	9/25/78	9/25/78
14-47	--	--	--	--

\* Valve replaced.

TABLE I (Cont'd)

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
18-47	--	--	--	--
22-47*	9/25/78	9/25/78	9/25/78	9/25/78
26-47	--	--	--	--
30-47	5/17/76	5/17/76	--	--
34-47	5/17/76	5/17/76	--	--
38-47	5/17/76	5/17/76	--	--
42-47	5/17/76	5/17/76	--	--
46-47	5/17/76	5/17/76	--	--
50-47	5/17/76	5/17/76	--	--
54-47	--	--	--	--
10-51	--	--	--	--
14-51	--	--	--	--
18-51	5/10/77	5/10/77	--	--
22-51	5/10/77	5/10/77	--	--
26-51	--	--	--	--
30-51	5/10/77	5/10/77	--	--
34-51	5/10/77	5/10/77	--	--
38-51	--	--	--	--
42-51*	9/25/78	9/25/78	9/25/78	9/25/78
46-51	--	--	--	--
50-51	--	--	--	--
14-55	--	--	--	--
18-55*	9/25/78	9/25/78	9/25/78	9/25/78
22-55	--	--	--	--
26-55	--	--	--	--
30-55	5/17/76	5/17/76	--	--
34-55	5/17/76	5/17/76	--	--
38-55	5/17/76	5/17/76	--	--
42-55	5/17/76	5/17/76	--	--
46-55	5/17/76	5/17/76	--	--
18-59	--	--	--	--
22-59	--	--	--	--
26-59	--	--	--	--
10-59	5/10/77	5/10/77	--	--
14-59	5/17/76	5/17/76	--	--
18-59	5/17/76	5/17/76	--	--
42-59	5/17/76	5/17/76	--	--

\* Valve replaced.



TABLE II

FRASH BOTTOM UNIT - CORE SCRAM SOLENOID MAINTENANCE

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
18-03	--	--	--	--
22-03	4/23/78	4/23/78	--	--
26-03	1/20/77	1/20/77	--	--
30-03	4/23/78	4/23/78	--	--
34-03	--	--	--	--
38-03	4/23/78	4/23/78	--	--
42-03	--	--	--	--
46-07	4/23/78	4/23/78	--	--
50-07	4/23/78	4/23/78	--	--
54-07	1/20/77	1/20/77	--	--
58-07	1/20/77	1/20/77	--	--
62-07	--	--	--	--
66-07	--	--	--	--
70-07	--	--	--	--
74-07	--	--	--	--
78-07	--	--	--	--
82-07	4/23/78	4/23/78	--	--
86-07	4/23/78	4/23/78	--	--
90-11	1/20/77	1/20/77	--	--
94-11	4/23/78	4/23/78	--	--
98-11	1/20/77	1/20/77	--	--
102-11	4/23/78	4/23/78	--	--
106-11	1/20/77	1/20/77	--	--
110-11	1/20/77	1/20/77	--	--
114-11	1/20/77	1/20/77	--	--
118-11	--	--	--	--
122-11	--	--	--	--
126-11	4/23/78	4/23/78	--	--
130-11	1/20/77	1/20/77	--	--
134-11	1/20/77	1/20/77	--	--
138-11	1/11/79	1/11/79	1/11/79	1/11/79
142-11	1/20/77	1/20/77	--	--
146-11	--	--	--	--
150-11	1/20/77	1/20/77	--	--
154-11	1/20/77	1/20/77	--	--
158-11	--	--	--	--
162-11	1/20/77	1/20/77	--	--
166-11	--	--	--	--
170-11	1/20/77	1/20/77	--	--
174-11	--	--	--	--
178-11	1/20/77	1/20/77	--	--
182-11	--	--	--	--
186-11	1/20/77	1/20/77	--	--

TABLE II (Cont'd)

<u>CRD No.</u>	<u>Pistons and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
L6-15	1/20/77	1/20/77	--	--
50-15	--	--	--	--
54-15	1/20/77	1/20/77	--	--
02-19	--	--	--	--
06-19	--	--	--	--
10-19	--	--	--	--
14-19	--	--	--	--
18-19	--	--	--	--
22-19	--	--	--	--
26-19	--	--	--	--
30-19	1/20/77	1/20/77	--	--
34-19	1/11/79	1/11/79	1/11/79	1/11/79
38-19	--	--	--	--
L2-19	--	--	--	--
L6-19	--	--	--	--
50-19	--	--	--	--
54-19	--	--	--	--
58-19	--	--	--	--
02-23	1/20/77	1/20/77	--	--
06-23	--	--	--	--
10-23	--	--	--	--
14-23	1/20/77	1/20/77	--	--
18-23	1/11/79	1/11/79	1/11/79	1/11/79
22-23	--	--	--	--
26-23	--	--	--	--
30-23	--	--	--	--
34-23	--	--	--	--
38-23	--	--	--	--
L2-23	--	--	--	--
L6-23	--	--	--	--
50-23	1/20/77	1/20/77	--	--
54-23	1/20/77	1/20/77	--	--
58-23	--	--	--	--
02-27	--	--	--	--
06-27	--	--	--	--
10-27	--	--	--	--
14-27	--	--	--	--

TABLE II (Cont'd)

<u>CRD No.</u>	<u>Press and Exh. Diagrams</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>St. assembly Gaskets</u>
18-27	--	--	--	--
22-27	--	--	--	--
26-27	--	--	--	--
30-27	--	--	--	--
34-27	1/20/77	1/20/77	--	--
38-27	1/20/77	1/20/77	--	--
42-27	1/11/79	1/11/79	1/11/79	1/11/79
46-27	1/20/77	1/20/77	--	--
50-27	1/20/77	1/20/77	--	--
54-27	1/20/77	1/20/77	--	--
58-27	--	--	--	--
02-31	1/20/77	1/20/77	--	--
06-31	--	--	--	--
10-31	1/20/77	1/20/77	--	--
14-31	--	--	--	--
18-31	1/20/77	1/20/77	--	--
22-31	1/11/79	1/11/79	1/11/79	1/11/79
26-31	--	--	--	--
30-31	--	--	--	--
34-31	--	--	--	--
38-31	--	--	--	--
42-31	--	--	--	--
46-31	--	--	--	--
50-31	--	--	--	--
54-31	--	--	--	--
58-31	--	--	--	--
02-35	--	--	--	--
06-35	1/20/77	1/20/77	--	--
10-35	1/11/79	1/11/79	1/11/79	1/11/79
14-35	1/20/77	1/20/77	--	--
18-35	--	--	--	--
22-35	1/20/77	1/20/77	--	--
26-35	--	--	--	--
30-35	1/20/77	1/20/77	--	--
34-35	--	--	--	--
38-35	--	--	--	--
42-35	--	--	--	--

TABLE II (Cont'd)

<u>CRD No.</u>	<u>Press and Exh. Diagrams</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Tickets</u>
16-35	1/20/77	1/20/77	--	--
50-35	--	--	--	--
54-35	1/20/77	1/20/77	--	--
58-35	--	--	--	--
02-39	1/20/77	1/20/77	--	--
06-39	--	--	--	--
10-39	1/20/77	1/20/77	--	--
14-39	--	--	--	--
18-39	1/20/77	1/20/77	--	--
22-39	--	--	--	--
26-39	1/20/77	1/20/77	--	--
30-39	--	--	--	--
34-39	--	--	--	--
38-39	1/11/79	1/11/79	1/11/79	1/11/79
42-39	--	--	--	--
46-39	--	--	--	--
50-39	--	--	--	--
54-39	1/20/77	1/20/77	--	--
58-39	--	--	--	--
02-43	--	--	--	--
06-43	--	--	--	--
10-43	--	--	--	--
14-43	--	--	--	--
18-43	--	--	--	--
22-43	1/11/79	1/11/79	1/11/79	1/11/79
26-43	--	--	--	--
30-43	--	--	--	--
34-43	--	--	--	--
38-43	1/20/77	1/20/77	--	--
42-43	--	--	--	--
46-43	1/20/77	1/20/77	--	--
50-43	--	--	--	--
54-43	1/20/77	1/20/77	--	--
58-43	--	--	--	--
06-47	1/20/77	1/20/77	--	--
10-47	--	--	--	--
14-47	1/20/77	1/20/77	--	--

TABLE II (Cont'd)

<u>CRD No.</u>	<u>Press and Exh Diaphragms</u>	<u>Body Gaskets</u>	<u>Core Assemblies</u>	<u>Sub-assembly Gaskets</u>
18-47	--	--	--	--
22-47	1/20/77	1/20/77	--	--
26-47	1/20/77	1/20/77	--	--
30-47	--	--	--	--
34-47	--	--	--	--
38-47	--	--	--	--
42-47	1/11/79	1/11/79	1/11/79	1/11/79
46-47	--	--	--	--
50-47	--	--	--	--
54-47	1/20/77	1/20/77	--	--
10-51	1/20/77	1/20/77	--	--
14-51	--	--	--	--
18-51	1/20/77	1/20/77	--	--
22-51	--	--	--	--
26-51	1/20/77	1/20/77	--	--
30-51	1/11/79	1/11/79	1/11/79	1/11/79
34-51	1/20/77	1/20/77	--	--
38-51	--	--	--	--
42-51	1/20/77	1/20/77	--	--
46-51	--	--	--	--
50-51	1/20/77	1/20/77	--	--
14-55	1/20/77	1/20/77	--	--
18-55	--	--	--	--
22-55	1/20/77	1/20/77	--	--
26-55	--	--	--	--
30-55	1/20/77	1/20/77	--	--
34-55	--	--	--	--
38-55	1/20/77	1/20/77	--	--
42-55	--	--	--	--
46-55	--	--	--	--
18-59	--	--	--	--
22-59	1/20/77	1/20/77	--	--
26-59	--	--	--	--
30-59	1/20/77	1/20/77	--	--
34-59	--	--	--	--
38-59	--	--	--	--
42-59	--	--	--	--