UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

JUN 6 1979

In Reply Refer To:
RII:JPO
50-348
50-364

Alabama Power Company
Attn: F. L. Clayton, Jr.
Executive Vice President
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Gentlemen:

Enclosed is supplement IE Bulletin 79-01A. It requires action by you with regard to power reactor facilities with an operating license except for the 11 SEP plants which are listed in Enclosure 3.

This Bulletin is also being sent for information to the 11 SEP plants and all power reactor facilities with a construction permit. No action or written response is required for construction permit facilities or the 11 SEP plants.

Should you have questions regarding this Bulletin or the actions required of you, please contact this office.

Sincerely,

for James P. O'Reilly
Director

Enclosures:
1. IE Bulletin No. 79-01A
2. List of IE Bulletins
   Issued in the past
   12 months
3. List of SEP Plants (11)

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

June 6, 1979

IE Bulletin No. 79-01A

SUPPLEMENT NO. 79-01A TO IE BULLETIN 79-01 - ENVIRONMENTAL QUALIFICATION OF CLASS 1E EQUIPMENT (DEFICIENCIES IN THE ENVIRONMENTAL QUALIFICATION OF ASCO SOLENOID VALVES)

Description of Circumstances:

Recently, a noncompliance report under 10 CFR Part 21 was received by the NRC from the Henry Pratt Company, manufacturer of butterfly valves which are installed in the primary containment at the Three Mile Island Unit 2 Nuclear Station. These butterfly valves are used for purge and exhaust purposes and are required to operate during accident conditions. The report discusses the use of an unqualified solenoid valve for a safety-related valve function which requires operation under accident conditions. The solenoid valve in question is Catalogue No. HT-8331A45, manufactured by the Automatic Switch Company (ASCO) of Florham Park, New Jersey. This pilot valve is used to pilot control the pneumatic valve actuators which are installed on the containment ventilation butterfly valves at this facility.

The deficiency in these solenoid valves identified in the Part 21 Report concerns the parts made of acetal plastic material. The acetal disc holder assembly and bottom plug in the pilot valve assembly are stated by ASCO to have a maximum service limit of 400,000 Rad integrated dosage and 200 degrees temperature. According to ASCO, exposure of these acetal plastic parts to specified maximum environmental conditions may render the solenoid pilot valve inoperable which would cause the associated butterfly valve to malfunction.

Further investigation at ASCO by the NRC staff has revealed that the valve seals in most ASCO solenoid valves contain Buna "N" elastomer material, which reportedly has a maximum service limit of 7,000,000 Rad integrated dosage and 180 degrees F temperature. The investigation further revealed that ASCO has available a line of qualified solenoid operated pilot valves (ASCO Catalogue No. NP-1) which have no plastic parts, utilize ethylene propylene or viton elastomers and have a continuously energized operating life of four years, under normal ambient conditions up to 140 degrees F. According to the manufacturer, at the end of this period, the coil, manual operator (optional feature) and all resilient parts must be replaced. These preventive maintenance instructions are specified in the installation and instruction bulletins which are provided to the purchaser with each shipment of solenoid valves.

The final items of concern identified during this investigation deals with the application of Class "A", "B", or "F", solenoid coils which are exposed to an accident environment. In this regard, ASCO representatives stated that the

high temperature coils identified as Class "HT" or "HB" are the only coils considered suitable for service under accident conditions; whereas, Class "A", "B", and "F" coils are not.

With respect to the corrective measures to be taken to resolve the above concerns, ASCO recommends the following:

1. The parts of the solenoid valve made of acetal plastic material should be replaced with similar parts made of metal which can be provided by ASCO.

2. The valve seals and gaskets which are made of Buna "N" material should be replaced with either ethylene propylene or viton elastomers, considered by ASCO as suitable for the service intended.

3. Review and determine that the coils of the solenoid valves installed inside containment are Class "HT" or "HB" as required for high temperature environmental conditions.

4. Review and determine that the solenoid enclosures installed inside containment have at least a NEMA 4 enclosure rating.

5. Establish a preventive maintenance program to assure replacement of those valve parts identified above in the time period recommended in the appropriate ASCO valve bulletin.

6. ASCO also stated that all unqualified solenoid valves inside containment be retrofitted to qualified ASCO No. NP-1 valves in lieu of the above.

7. Questions from licensees to ASCO concerning corrective measures should reference both catalogue and serial numbers of each valve in question. These numbers are stamped on the metal nameplate on each solenoid valve.

Action to be Taken by Licensees of all Power Reactor Facilities (except those 11 SEP Plants listed on Enclosure 3) with an Operating License:

1. Determine whether or not ASCO solenoid valves are used or planned for use in safety-related systems at your facility(ies).

2. If such valves are used or planned for use, identify the safety system involved and determine that: (a) valves which could be subjected to a LOCA environment are qualified to that environment. Specifically that no parts made of acetal plastic or Buna "N" materials or Class "A", "B", or "F" solenoid coils are used in such valves; (b) a preventive maintenance program is being conducted such that the solenoid coil, the manual operator (if applicable), and the resilient parts of the valve are being replaced in accordance with the time period established by the manufacturer and documented as the qualified life of the assembled component.

3. All holders of operating licenses of power reactor facilities are obligated to meet the review and reporting requirements established in previously issued IE Bulletin 79-01, regarding environmental qualification of electrical equipment installed in their plants.

No additional written response to this Supplement IE Bulletin is required other than those responses described above. NRC inspectors will continue to monitor the licensees' progress in completing the requested action described above. If additional information is required, contact the Director of the appropriate NRC Regional Office.

Approved by GAO, B180225 (R0072); clearance expires 7/31/80. Approval was given under a blanket clearance specifically for identified generic problems.

LISTING OF IE BULLETINS
ISSUED IN LAST TWELVE MONTHS

Bulletin No.	Subject	Date Issued	Issued To
79-12	Short Period Scrams at BWR Facilities	5/31/79	All GE BWR Facilities with an OL
79-11	Faulty Overcurrent Trip Device in Circuit Breakers for Engineered Safety Systems	5/22/79	All Power Reactor Facilities with an OL or a CP
79-10	Requalification Training Program Statistics	5/11/79	All Power Reactor Facilities with an OL
79-09	Failures of GE Type AK-2 Circuit Breaker in Safety Related Systems	4/17/79	All Power Reactor Facilities with an OL or CP
79-08	Events Relevant to BWR Reactors Identified During Three Mile Island Incident	4/14/79	All BWR Power Reactor Facilities with an OL
79-07	Seismic Stress Analysis of Safety-Related Piping	4/14/79	All Power Reactor Facilities with an OL or CP
79-06B	Review of Operational Errors and System Misalignments Identified During the Three Mile Island Incident	4/14/79	All Combustion Engineering Designed Pressurized Water Power Reactor Facilities with an Operating Licensee
79-06A (Rev 1)	Review of Operational Errors and System Misalignments Identified During the Three Mile Island Incident	4/18/79	All Pressurized Water Power Reactor Facilities of Westinghouse Design with an OL
79-06A	Review of Operational Errors and System Misalignments Identified During the Three Mile Island Incident	4/14/79	All Pressurized Water Power Reactor Facilities of Westinghouse Design with an OL

LISTING OF IE BULLETINS
ISSUED IN LAST TWELVE MONTHS

Bulletin No.	Subject	Date Issued	Issued To
79-06	Review of Operational Errors and System Misalignments Identified During the Three Mile Island Incident	4/11/79	All Pressurized Water Power Reactors with an OL except B&W facilities
79-05A	Nuclear Incident at Three Mile Island	4/5/79	All B&W Power Reactor Facilities with an OL
79-05	Nuclear Incident at Three Mile Island	4/2/79	All Power Reactor Facilities with an OL and CP
79-04	Incorrect Weights for Swing Check Valves Manufactured by Velan Engineering Corporation	3/30/79	All Power Reactor Facilities with an OL or CP
79-03	Longitudinal Welds Defects In ASME SA-312 Type 304 Stainless Steel Pipe Spools Manufactured by Youngstown Welding and Engineering Co.	3/12/79	All Power Reactor Facilities with an OL or CP
79-02	Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts	3/2/70	All Power Reactor Facilities with an OL or CP
79-01	Environmental Qualification of Class IE Equipment	2/8/79	All Power Reactor Facilities with an OL or CP
8-14	Deterioration of Buna-N Component In ASCO Solenoids	12/19/78	All GE BWR facilities with an OL or CP
78-13	Failures in Source Heads of Kay-Ray, Inc., Gauges Models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061 and 7061B	10/27/78	All general and specific licensees with the subject Kay-Ray, Inc. gauges

LISTING OF IE BULLETINS
ISSUED IN LAST TWELVE MONTHS

Bulletin No.	Subject	Date Issued	Issued To
78-12B	Atypical Weld Material in Reactor Pressure Vessel Welds	3/19/79	All Power Reactor Facilities with an OL or CP
8-12A	Atypical Weld Material in Reactor Pressure Vessel Welds	11/24/78	All Power Reactor Facilities with an OL or CP
8-12	Atypical Weld Material in Reactor Pressure Vessel Welds	9/29/78	All Power Reactor Facilities with an OL or CP
78-11	Examination of Mark I Containment Torus Welds	7/21/78	BWR Power Reactor Facilities for action: Peach Bottom 2 and 3, Quad Cities 1 and 2, Hatch 1, Monticello and Vermont Yankee
78-10	Bergen-Paterson Hydraulic Shock Suppressor Accumulator Spring Coils	6/27/78	All BWR Power Reactor Facilities with an OL or CP
78-09	BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures	6/14/79	All BWR Power Reactor Facilities with an OL or CP
78-08	Radiation Levels from Fuel Element Transfer Tubes	6/12/78	All Power and Research Reactor Facilities with a Fuel Element transfer tube and an OL
78-07	Protection afforded by Air-Line Respirators and Supplied-Air Hoods	6/12/78	All Power Reactor Facilities with an OL, all class E and F Research Reactors with an OL, all Fuel Cycle Facilities with an OL, and all Priority 1 Material Licensees

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Enclosure No. 3

SEP Plants

Plant	Region
Dresden 1	III
Yankee Rowe	I
Big Rock Point	III
San Onofre 1	V
Haddam Neck	I
LaCrosse	III
Oyster Creek	I
R. E. Ginna	I
Dresden 2	III
Millstone	I
Palisades	III

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