



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Central files

October 31, 1980

Docket Nos. 50-272
50-311

Public Service Electric and Gas Company
ATTN: Mr. F. W. Schneider
Vice President - Production
80 Park Plaza - 15A
Newark, New Jersey 07101

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Gentlemen:

The enclosed IE Information Notice No. 80-39, "Malfunctions of Solenoid Valves Manufactured by Valcor Engineering Corporation," is forwarded to you for information. No written response is required. If you desire additional information regarding this matter, please contact this office.

Sincerely,

Boyce H. Grier
Director

Enclosures:

1. IE Information Notice No. 80-39
2. List of Recently Issued IE Information Notices

CONTACT: D. L. Capton
(215-337-5266)

cc w/encs:

- F. P. Librizzi, General Manager - Electric Production
- E. N. Schwalje, Manager - Quality Assurance
- R. L. Mittl, General Manager - Licensing and Environment
- H. J. Midura, Manager - Salem Generating Station
- R. A. Uderitz, General Manager - Fuel Supply Department

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

October 31, 1980

IE INFORMATION NOTICE NO. 80-39: MALFUNCTION OF SOLENOID VALVES MANUFACTURED
BY VALCOR ENGINEERING CORPORATION

PURPOSE:

The intent of this Information Notice is to alert holders of construction permits and operating licenses for nuclear power plants of a potentially generic problem involving the malfunctioning of certain solenoid valves manufactured by the Valcor Engineering Corporation (Valcor). The solenoid valves so involved are designated as Valcor Valve Model No. V52600-554-1. Valcor has informed us that these valves have only been supplied to the McGuire facility; however, since these valves were substituted for solenoid valves of another manufacturer that did not meet the requirements of IE Bulletin No. 79-01 and its amendments, licensees and holders of construction permits should take into account the problem identified in this Information Notice prior to making any similar substitution.

BACKGROUND:

By TWX dated June 27, 1980, Valcor submitted a preliminary 10 CFR Part 21 Report addressing the malfunctioning of Valcor solenoid valves at the McGuire facility. The malfunctioning valves have been identified as Valcor Valve Model No. 52600-554-1. This TWX was subsequently followed by a letter dated July 3, 1980, transmitting a more detailed Part 21 Report entitled, "Quality Assurance Report", a copy of which is attached hereto as Enclosure No. 1.

In brief, the malfunction appears to be an intermittent type wherein the valve fails to cycle from OPEN to CLOSE to OPEN immediately after a sustained period of operation in the energized (OPEN) mode. Although the valves are rated for "continuous operation", Valcor contends that the valves were not designed to meet the operating conditions requiring the immediate cycling from OPEN to CLOSE to OPEN after a sustained period of continuous energization. A major source of the problem, therefore, may be a misunderstanding of the term "continuous operation". By letter dated July 14, 1980 to Duke Power Company, Valcor transmitted its recommendations in this matter entitled, "Outline - Suggested Modification Procedures", a copy of which is attached hereto as Enclosure No. 2.

Enclosures:

1. Quality Assurance Report
2. Outline - Suggested Modification Procedures.

VALCOR**VALCOR ENGINEERING CORPORATION**3 LAWRENCE ROAD, SPRINGFIELD, NEW JERSEY 07081, U.S.A. • (201) 467-8400
TWX 710-306-8878 • CABLE, VALCORQUALITY ASSURANCE REPORT

SUBJECT: NRC 10CFR21 Reporting

Reference: Valcor TWX to NRC dated 6/27/80

- On June 27, 1980, the Duke Power Company advised that a failure to actuate valve Part No. V52600-554-1 affects a safety-related system. It was reported that this valve failed to cycle immediately following a sustained period of continuous energization. Valcor advised Duke that the valve was not designed to meet this operating condition.
- The Duke Power Company indicated that the above part was installed in McGuire Nuclear Station Nos. 1 and 2 as part of the Diesel Generator Control Air Solenoid Valve System providing instrument air to the Diesel System. Eight valves are involved, reference is below.
Valve failure to actuate could impair function of the Diesel Generator which provides power to safety-related electrical components.
- Valcor has reviewed its records and determined that this potential problem is isolated to the following valves shipped to the Duke Power Company for McGuire Nuclear Station Nos. 1 and 2:

	<u>Customer P.O. No.</u>	<u>Customer List Part No.</u>	<u>Quantity</u>	<u>Serial No.</u>	<u>Date Completed</u>
a.	C45389 (N12145)	04D-050 (V52600-570-1)	22	1 to 22	10-76
b.	C45389 (N12145)	04D-052 (V52600-554-1)	8	1 to 8	10-76
c.	C45389 (N13163D)	04D-053 (V52600-555-2)	3	10, 11, 12	5-78
d.	C45389 (N12145)	04D-053 (V52600-555-2)	6	1 to 6	10-76
e.	C45389 (N13163)	04D-054 (V52600-5542-1)	6	1 to 6	2-78
f.	C45389 (N13163C)	04D-055 (V52600-5542-2)	4	1 to 4	3-78
g.	C45389 (N13163C)	04D-056 (V52600-5531-1)	6	1,7,8,12,13	5-79
h.	C45389 (N13163C)	04D-057 (V57500-5220-1)	17	1 to 17	5-79

Quality Assurance Report

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4. Subject to a requirement for immediate cycling following continuous energization Valcor recommends that valves be upgraded by replacement of internal bonnet assembly parts. Installed valves will require pressure shutdown. Valcor has commenced preparation of modification instructions and will report to Duke Power by July 14, 1980.

**VALCOR ENGINEERING CORPORATION**

2 LAWRENCE ROAD, SPRINGFIELD, NEW JERSEY 07081, U.S.A. • (201) 467-8400

TWX 710-890-5876 - CABLE: VALCOR

OUTLINE - SUGGESTED MODIFICATION PROCEDURES

REFERENCE: Valcor NRC 10CFR21 Report dated 7-3-80.

NOTE: A new Solenoid Assembly that will meet the new criteria without affecting the valve Cv is not readily available.

1. All valves noted in the above referenced report can be modified in the field or at Valcor, by replacement of the Bonnet Assembly. The valves are to be re-identified by adding a revision letter to Valcor valve Part No. on nameplate. The modification to be coordinated with the Authorized Nuclear Inspector.
2. Installed valves will require pressure shutdown.
3. Modification by list Part Numbers as noted in the referenced report.
 - a. List P/N 04D-050 (V52600-570-1).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-570-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Estimated valve Cv change from 25 to 18.
 - b. List P/N 04D-052 (V52600-554-1).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-554-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 2.5 to 1.2.
 - c. List P/N 04D-053 (V52600-555-2).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-555-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 3 to 2.
Valve similar to 04D-222.

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OUTLINE - SUGGESTED MODIFICATION PROCEDURES

- d. List P/N 04D-053 (V52600-555-2).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-5551-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 3 to 2.
Valve will be similar to 04D-222.
- e. List P/N 04D-054 (V52600-5542-1).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-554-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 3 to 2.
- f. List P/N 04D-055 (V52600-5542-1).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-554-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 3 to 2.
- g. List P/N 04D-056 (V52600-5551-1).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V52661-5551-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 3 to 2.
Valve will be similar to 04D-222.
- h. List P/N 04D-057 (V57300-5220-1).
Dis-assemble valve.
Replace Bonnet Ass'y with Bonnet Ass'y P/N V573661-5220-1-1.
Re-assemble valve and perform Hydro & Operational tests.
Valve Cv will change from 3 to 2.
Valve will be similar to 04D-223.

IE Information Notice No. 80-39
October 31, 1980

Enclosure 2

RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date Issued	Issued to
80-38	Cracking in Charging Pump Casing Cladding	10/30/80	All holders of a PWR power reactor OL or CP
80-37	Containment Cooler Leaks and Reactor Cavity Flooding at Indian Point Unit 2	10/24/80	All holders of a power reactor OL or CP
80-36	Failure of Steam Generator Support Bolting	10/10/80	All holders of a power reactor OL or CP
80-35	Leaking and Dislodged Iodine-125 Implant Seeds	10/10/80	All holders of a Category G or GI Medical License
80-34	Boron Dilution of Reactor Coolant During Steam Generator Decontamination	9/26/80	All holders of a PWR Power Reactor OL
80-33	Determination of Teletherapy Timer Accuracy	9/15/80	All holders of a teletherapy license
80-32	Clarification of Certain Requirements for Exclusive-use Shipments of Radioactive Materials	9/12/80	All holders of an NRC or Agreement State License
80-31	Maloperation of Gould-Brown Boveri 480V-Type K-600S and K-Don 600S Circuit Breakers	8/27/80	All holders of a power reactor OL or CP
80-30	Potential for Unacceptable Interaction Between the Control Rod Drive Scram Function and Non-essential Control Air at Certain BWR Facilities	8/27/80	All holders of a BWR power reactor OL or CP