



73e

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

Docket Nos. 50-317
50-318

SEP 12 1979

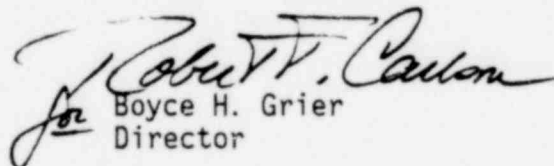
Baltimore Gas and Electric Company
ATTN: Mr. A. E. Lundvall, Jr.
Vice President, Supply
P. O. Box 1475
Baltimore, Maryland 21203

Gentlemen:

Enclosed is IE Bulletin 79-23 which requires action by you with regard to your power reactor facility(ies) with an operating license or a construction permit.

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

Sincerely,


for Boyce H. Grier
Director

Enclosures:

1. IE Bulletin No. 79-23
2. List of IE Bulletins Issued in the Last Six Months

cc w/encls:

R. M. Douglass, Manager, Quality Assurance
L. B. Russell, Chief Engineer
W. Gibson, General Supervisor, Operational QA
R. C. L. Olson, Senior Engineer
K. H. Sebra, Principal Engineer

1045 162

7909270048

ENCLOSURE 1

Accession No. 7908220104

SSINS No.: 6820

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

IE Bulletin No. 79-23

Date: September 12, 1979

Page 1 of 3

POTENTIAL FAILURE OF EMERGENCY DIESEL GENERATOR FIELD EXCITER TRANSFORMER

Description of Circumstances:

Florida Power and Light Company recently reported a problem encountered during a 24-hour full load test of the emergency diesel generators (EDG) at their Turkey Point facility. Approximately 10 hours into the test, the A-EDG tripped due to a differential-relay lockout on B and C phases; the B-EDG was manually stopped, thus interrupting the test at that point in time.

Subsequent investigation and testing by the licensee revealed a design error on both the A and B EDGs which resulted in overheating of the Exciter Power Transformers (EPTs) at sustained high load operation.

The following nameplate data applies to the equipment installed at Turkey Point:

Emergency Diesel Generator

General Motors (Electro-Motive Division)
Model EMD-999-20
Engine-turbocharged, 2 cycle,
EMD design 20-645E4
Generator-EMD-design Model A-20

Exciter Power Transformer

GE-single phase
Model-9T24Y1004
Serial-MD
Cycles-60
KVA 15
Insulation-4160 V

The manufacturer's findings and recommendations regarding the above problem are described below:

1045 163

"A potential problem can exist if the neutral of the generator and the neutral of the primary windings of the excitation power transformer (EPT) (sometimes referred to as the control power transformer (CPT)) are connected. A direct connection between the neutrals, or a connection through common grounding of both neutrals, are equally undesirable conditions. Whenever either of these undesirable conditions exist, high circulating currents can be induced by harmonics. These currents may exceed transformer ratings and result in transformer damage or failure.

The connection between the neutrals, either direct or through common grounding, may have been designated in the original wiring design, or may have been subsequently added by a contractor or by power plant personnel to balance excitation transformer voltages relative to the generator. No significant benefit is obtained by balancing the primary voltage of the excitation transformer by means of these connections."

According to the manufacturer, "to avoid this potential transformer damage or failure, the circuitry of each installation should be examined to determine if a circuit exists between the neutral of the primary windings of the EPT or CPT and the generator neutral. If the condition exists, the neutral circuit should be disconnected, and the transformer primary neutral allowed to float."

Licensees may utilize Regulatory Guide 1.108, Revision 1, as a reference for the periodic testing of diesel generator units used as on-site electric power systems at nuclear power plants.

Action to be Taken by Licensees:

For all power reactor facilities with an operating license or a construction permit:

1. Determine whether or not connections have been made between low KVA rated transformers and high KVA rated EDGs without adequate limitations on the flow of circulating currents. If applicable, provide a description of the corrective action being taken to address this problem.
2. Provide a schedule for the completion of a sustained full-load operation test of the EDGs for a duration of not less than 24 hours, or provide the results of the similar long duration, full-load test which has already been completed on the EDGs installed at your facility. The test should demonstrate full-load carrying capability for an interval of not less than 24 hours, of which 22 hours should be at a load equivalent to the continuous rating of the diesel generator and 2 hours at a load equivalent to the 2 hour rating of the diesel generator. The test should also verify that voltage and frequency requirements are maintained and that the cooling system functions within design limits.
3. Provide a written report of the above actions within 45 days of the receipt of this Bulletin.

Enclosure 1

IE Bulletin No. 79-23
Date: September 12, 1979
Page 3 of 3

Reports should be submitted to the Director of the appropriate NRC Regional Office. A copy of your report should be sent to the U. S. Nuclear Regulatory Commission, Office of Inspection and Enforcement, Division of Reactor Operations Inspection, Washington, D.C. 20555.

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

1045 165

ENCLOSURE 2

LISTING OF IE BULLETINS
ISSUED IN LAST SIX 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 |
| 79-01A | Environmental Qualification of Class 1E Equipment (Deficiencies in the Environmental Qualification of ASCO Solenoid Valves) | 6/6/79 | All Power Reactor Facilities with an OL or CP |
| 79-02 (Rev 1) | Pipe Support Base Plate Design Using Concrete Expansion Anchor Bolts | 6/21/79 | All Power Reactor Facilities with an OL or CP |
| 79-02 (Rev 1) (Supplement No. 1) | Same Title as 79-02 (Rev 1) | 8/20/79 | Same as 79-02 (Rev 1) |
| 79-03 | Longitudinal Weld Defects in ASME SA-312 Type 304 Stainless Steel Pipe Spools Manufactured by Youngstown Welding and Engineering Company | 3/12/79 | All Power Reactor Facilities with an OL or 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 |
| 79-05 | Nuclear Incident at Three Mile Island | 4/1/79 | All Babcock and Wilcox Power Reactor Facilities with an OL, Except Three Mile Island 1 and 2 (For Action), and All Other Power Reactor Facilities With an OL or CP (For Information) |

LIST OF IE BULLETINS
ISSUED IN LAST SIX MONTHS (CONTINUED)

| Bulletin No. | Subject | Date Issued | Issued To |
|------------------------|---|-------------|---|
| 79-05A | Nuclear Incident at Three Mile Island - Supplement. | 4/5/79 | Same as 79-05 |
| 79-05B | Nuclear Incident at Three Mile Island - Supplement | 5/21/79 | Same as 79-05 |
| 79-06 | Review of Operational Errors and System Misalignments Identified During the Three Mile Incident | 4/11/79 | All Pressurized Water Power Reactor Facilities with an OL Except B&W Facilities (For Action), All Other Power Reactor Facilities with an OL or CP (For Information) |
| 79-06A | Same Title as 79-06 | 4/14/79 | All Westinghouse Designed Pressurized Power Reactor Facilities with an OL (For Action), and All Other Power Reactor Facilities with an OL or CP (For Information) |
| 79-06A (Revision 1) | Same Title as 79-06 | 4/18/79 | All Westinghouse Designed Pressurized Power Reactor Facilities with an OL (For Action), and All Other Power Reactor Facilities with an OL or CP (For Information) |

LISTING OF IE BULLETINS
ISSUED IN LAST SIX MONTHS (CONTINUED)

| Bulletin No. | Subject | Date Issued | Issued To |
|--------------|--|-------------|---|
| 79-06B | Same Title as 79-06 | 4/14/79 | All Combustion Engineering Designed Pressurized Power Reactor Facilities with an OL (For Action), and All Other Power Reactor Facilities with an OL or CP (For Information) |
| 79-05C&06C | Nuclear Incident at Three Mile Island - Supplement | 7/26/79 | All PWR 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 |
| 79-08 | Events Relevant to Boiling Water Power Reactors Identified During Three Mile Island Incident | 4/14/79 | All BWR Power Reactor Facilities with an OL (For Action), All Other Power Reactor Facilities with an OL or CP (For Information) |
| 79-09 | Failures of GE Type AK-2 Type Circuit Breaker in Safety Related Systems | 4/17/79 | All Power Reactor Facilities with an OL or CP |
| 79-10 | Requalification Training Program Statistics | 5/11/79 | All Power Reactor Facilities with an OL |

LISTING OF IE BULLETINS
 ISSUED IN LAST SIX MONTHS (CONTINUED)

| Bulletin No. | Subject | Date Issued | Issued To |
|-------------------------|--|-------------|---|
| 79-11 | Faulty Overcurrent Trip Device in Circuit Breakers for Engineered Safety Systems | 5/22/79 | All Power Reactor Facilities with an OL or CP |
| 79-12 | Short Period Scrams at BWR Facilities | 5/31/79 | All GE BWR Facilities with an OL |
| 79-13 | Cracking in Feedwater System Piping | 6/25/79 | All PWRs with an OL (for Action), All Other Power Reactor Facilities with an OL or CP (For Information) |
| 79-13 (Revision 1) | Cracking in Feedwater System Piping | 8/30/79 | All Designated Applicants for OLS |
| 79-14 | Seismic Analysis for As-Built Safety Related Piping Systems | 7/2/79 | All Power Reactor Facilities with an OL or CP |
| 79-14 (Revision 1) | Same Title as 79-14 | 7/18/79 | Same as 79-14 |
| 79-14 (Supplement) | Same Title as 79-14 | 8/15/79 | Same as 79-14 |
| 79-14 (Supplement 2) | Same as Title 79-14 | 9/7/79 | Same as 79-14 |
| 79-15 | Deep Draft Pump Deficiencies | 7/11/79 | All Power Reactor Facilities with an OL or CP |
| 79-16 | Vital Area Access Controls | 7/30/79 | All Holders of and Applicants for Reactor Operating Licenses |
| 79-17 | Pipe Cracks in Stagnant Borated Water Systems at PWR Plants | 7/26/79 | All PWR Power Reactor Facilities with an OL |

LISTING OF IE BULLETINS
ISSUED IN LAST SIX MONTHS (CONTINUED)

| Bulletin No. | Subject | Date Issued | Issued To |
|--------------|--|-------------|--|
| 79-18 | Audibility Problems Encountered on Evacuation | 8/7/79 | All Power Reactor Facilities with an OL |
| 79-19 | Packaging Low-Level Radioactive Waste for Transport and Burial | 8/10/79 | All Power and Research Reactors with OL, all Fuel Facilities (except Uranium Mills), and certain Materials Licensees |
| 79-20 | Same Title as 79-19 | 8/10/79 | Certain Materials Licensees |
| 79-21 | Temperature Effects on Level Measurements | 8/13/79 | All Power Reactor Facilities with an OL or CP |
| 79-22 | Possible Leakage of Tubes of Tritium Gas Used in Timepieces for Luminosity | 9/5/79 | Each Licensee who Receives Tubes of Tritium Gas in Timepieces for Luminosity |