GULF STATES UTILITIES COMPANY
POST OFFICE BOX 2951 • BEAUMONT, TEXAS 77704
AREA CODE 409 838 6631

July 31, 1985
RBG - 21762
File No. G9.5

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Denton:

River Bend Station - Unit 1
Docket No. 50-458

Enclosed for your review is Gulf States Utilities Company (GSU) supplemental response to the request for additional information dated June 13, 1984 from the Nuclear Regulatory Commission (NRC) Staff regarding the status of corrective action on five recent 10CFR21 notices issued by Transamerica Delaval, Inc. (TDI). Enclosure 1 summarizes each GSU Deficiency Report (DR) while the attachments contain copies of the GSU responses previously provided.

Sincerely,

J. E. Booker

J. E. Booker
Manager-Engineering
Nuclear Fuels & Licensing
River Bend Nuclear Group

JEB/ERG/je

Add: Reg Files - Original

IE19
1/40

GSU Deficiency Report (DR) No. 298, "Air Start Check Valves"
GSU provided its report to Region IV by letter No. RBG-21,451, dated 7/5/85 (attachment 1). Attachment 2 is an internal memorandum No. SCRB-7222, which describes the results on nondestructive examinations performed on Williams-Hager valves which have been removed and returned to TDI.

GSU Deficiency Report (DR) No. 299, "Fuel Oil Backpressure Regulators" GSU's evaluation letter NO. RBG-21,223, dated June 6, 1985, was provided to NRR in an earlier report. Since that report, the replacement backpressure valves have been replaced by spring piston type valves manufactured by Fulflo Company. The design of this valve precludes the fuel spray problem experienced with the original valves. The Fulflo valve does not have a bellows or diaphragm whose failure could cause gross leakage. To further improve the operating reliability, a manual bypass has been installed, which could be used in the event of failure of the backpressure valve.

The Fulflo valves have been qualified by SWEC to Safety Class 3 and Siesmic Category I (non-ASME) requirements. Mill Test Reports have been reviewed to verify that suitable material requirements have been met. The 15 inches of 1 inch pipe on either side of the valve is procured, designed, analyzed, and installed to the requirements of ASME, Section III.

The Fulflow valves have operated successfully for over 200 hours at River Bend and for over 8000 hours at other nuclear facilities.

GSU Deficiency Report (DR) No. 313, "Exciter Control Cabinet Cooling" GSU's report to Region IV was provided by letter no. RBG-21,453, dated July 3, 1985. The modifications will provide filtered outside air to the control cabinets from safety related HVAC fans. The modification will be complete prior to initial criticality.(Sheduled completion of construction is 7/31/85.)

In the event the modifications are not complete at fuel load, cabinet doors will be kept open and temperatures will be monitored by observing temperature sensitive labels attached to the affected parts periodically during and after each diesel operation. In the event that an overtemperature condition occurs, the diesel will be declared inoperable until the affected parts are replaced.

Attachment 1

GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775

AREA CODE 504 635 6094 346 8651

July 5, 1985
RBG- 21451
File Nos. G9.5, G9.25.1.1

Mr. Robert D. Martin, Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Martin:

River Bend Station - Unit 1
Docket No. 50-458
Final Report/DR-298

On July 3, 1985, GSU notified Region IV by telephone that it had determined DR-298 concerning air start check valves for standby diesel generators supplied by Transamerica Delaval, Incorporated to be reportable under 10CFR50.55(e). The attachment to this letter is GSU's final 30-day written report pursuant to 10CFR50.55(e)(3) with regard to this deficiency.

Sincerely,

J. E. Booker

J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

JEB/PJD/amg

cc: Director of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC Resident Inspector-Site

INPO

8507190451

ATTACHMENT

July 5, 1985
RBG- 21451

DR-298/AIR START CHECK VALVES

Background and Description of the Problem

The deficiency concerns air start check valves supplied by the Williams Gauge Co. (now Clow Corporation) for standby diesel generators manufactured by Transamerica Delaval, Incorporated (TDI). TDI in its letter dated March 12, 1985, described how flames emanating from an air start assembly were noticed during diesel operation at another facility. Upon examination, it was found that two of these four air check valves installed by TDI were broken and/or cracked. The remaining two were undamaged. The cause of the problem is not known at this time. Failure of these valves has been known to occur only after 900 hours of operation.

The valves for the River Bend Station (RBS) diesels are identified with TDI Part No. KE-008-000. The diesels at RBS to date have run for approximately 330 hours.

A similar problem has not occurred at RBS; however, steps were taken to determine whether a similar deficiency might exist.

Safety Implication

While there is no physical evidence which indicates the existing valves at RBS are deficient, GSU conservatively assumes that the valves could have failed. Failure of the check valves could seriously degrade the diesel's performance to a condition where it would fail to start, or because of compression leakage during the firing stroke could result in external flaming with unplanned diesel shutdown. The safe operations of the plant could therefore be adversely affected by this condition.

Corrective Action

TDI's recommendation is to disassemble each of the two check valves/engine on RBS engine R-48 type for nondestructive examination.

In lieu of this procedure, replacement units were obtained from a different manufacture under TDI Warranty Order No. W-39?58 for both diesels. Nonconformance and Disposition Report No. 12,209 has been initiated to remove the potentially deficient valves, to perform loose particle examination and return the existing valves to TDI, and to install the replacement valves.

Attachment 2

File DR-298

MEMORANDUM

TO: L. A. England July 14, 1985

FROM: J. R. Hamilton SCRB-7222

FILE CODE NO. G9.25.1.1
10CFR50.55(E) CONDITIONS OF
CONSTRUCTION PERMITS (DEFICIENCY REPORTS)
RIVER BEND STATION-UNIT I

Subject: **DR 298 "Air Start Check Valves"**
LP Inspection of Williams-Hager (Clow Corp) Check Valves

The TDI 10CFR21 notice dated 3/12/85 recommended liquid penetrant inspection of the valve disk guide. Our evaluation letter SCRB-7170, dated 7/5/85 describes the action to replace the potentially defective valves with valves of different design and manufacture. This work has been completed by MWR-85002793.

The purpose of this letter is to provide the results of LP inspections on the Williams Hager valve. This inspection was performed for the benefit of the NRC and other owners who may not have replaced the Williams valves. The results showed no indications in the disk guide (this was the part that failed at Grand Gulf). A number of casting defects were observed in the valve body and the guide spider, as noted on the attachments Reference IOC of 6/25/85 and Inspection Report dated dated 7/10/85. There was no evidence that the casting defects affected the function of the valves.

You may wish to forward this information to Region IV and Dr. Berlinger at NRR.

J R Hamilton

J. R. Hamilton
Supervisor, NSSS
River Bend Nuclear Group

JRH:cm

Attachment(s)

cc: NDC
PESG-85-479

RIVER BEND UNIT 1 WORK REQUEST W.R. NO. JUN 7 85 R 1 001137

1. Equipment I.D.	2. Equipment Description	4. Prepared by
1EGS*EG1A/B HPM 06-T112	A" & B" standby DG's	Doug Kratzer 6/1/85 x2243

3. Reported Condition/Maintenance Requested

Replace air start check valves per attached N&D 11,752.

Let me know the MWR # assigned to this work.

5. Deficiency Tag Placed ☐
6. Safety Related YES ☑ NO ☐
7. Priority 1 ☐ 2 ☐ 3 ☑ 4 ☐ 5 ☐
8. LCO ☐ N/A
9. SS/COF Dwight Hartz

10. Q 1 ☒ Q 2 ☐ Q 3 ☐ Q N A ☐
11. Design Change Number ☐ YES ☒ NO
12. Clearance Number ☒ YES ☐ NO R85 6-85-1582
13. R.W.P. Number ☐ YES ☒ NO
14. Open Flame Number ☐ YES ☒ NO
15. Transient Fire Load Anal. Req. ☐ YES ☒ NO
16. Storage Requisition Number
17. Account Number J50910 12

18. Job Plan SEE CONTINUATION SHEET.

VALVE IS LOCATED BETWEEN ENGINE AND GENERATOR, EAST END OF TOP CAT WALK

QC NOTIFICATION POINT 7-5-85

19. Planner Signature D. Kratzer 6/1/85
20. QC Supervisor Notified [signature] 6/18/85
21. Approval [signature] 6/18/85

22. SS/COF Comments & Precautions

23. Released For Work By [signature]
Date 6/18/85

24. Maintenance Performed

ELECTRICALLY DISCONNECTED VALVES

Replaced air start check valves per Att. N&D 11,752

ELECTRICALLY RE-CONNECTED VALVES.

25. Workers Signature Date/Time
Johnny Peterson 7-5-85 18:00
Johnny Peterson 7-6-85 17:00
Gregory Burgess 7/6/85 1700

26. Man-Hours 1/2 1 2 26

27. Foreman R. E. McCarty

28. Functional Test & Restoration

PERFORM SYSTEM LEAK CHECK

SYSTEM IS SATISFACTORY IF NO LEAKAGE IS FELT AT THE FLANGE CONNECTIONS

QC WITNESS POINT 7/10/85

29. Functional Complete [signature] SAT ☑ UNSAT ☐ Date/Time 7/10/85 1525
30. SS Approval [signature] Date/Time 7/10/85 1546
31. QC Review Complete [signature] Date/Time 7-14-85 0921

8500270193

0192 2-99-82

COPY 1 — White COPY 2 — Green COPY 3 — Canary COPY 4 — Pink COPY 5 — Goldenrod

THIS FORM FOR HAND WRITTEN MEMO - ONE SUBJECT ONLY

GSU 2501 00 65

INTER-OFFICE MEMORANDUM
GULF STATES UTILITIES COMPANY

DATE 6/25/85

LOCATION	TO T BASKIN	SUBJECT
LOCATION	FROM JR HAMILTON	

AREAS TO BE LP INSPECTED ON AIR START CHECK VALVES. SEE PAGE 3/6 OF TDI 3/12/85 LETTER

(1) DISK, ESPECIALLY THE GUIDE PIN FILLET RADIUS
(2) SEAT RING GUIDE SPIDER
(3) SPRING SEATING SURFACE IN BODY

RETAIN VALUES IN REJECT AREA PENDING REVIEW OF LP RESULTS BY GSU ENGINEERING AND PROJECTS

PLEASE REPLY TO

SIGNED John Hamilton

LIQUID PENETRANT INSPECTION OF THE FOUR AIR START CHECK VALVE GUIDE PIN FILLET RADII AND SEAT RING GUIDE SPIDERS HAVE BEEN COMPLETED. SEE ATTACHED COPY OF LIQUID PENETRANT REPORT FOR RESULTS.

THE INSPECTION OF THE SPRING SEATING SURFACES COULD NOT BE PERFORMED DUE TO THE POROUS NATURE OF THE VALVE BODY CASTING AND THE AMOUNT OF OIL OR GREASE ABSORBED WITHIN THIS SURFACE. LIMITED CLEANING CAPABILITIES WERE NOT SUFFICIENT TO OBTAIN A CONCLUSIVE TEST. A VISUAL INSPECTION OF THESE AREAS REVEALED GROSS CASTING DEFECTS.

DATE 7/10/85

SIGNED T M Baskin

THIS COPY FOR ADDRESSEE

THIS FORM FOR HAND WRITTEN MEMOS ONLY

1/6

Transamerica Delaval

Transamerica Delaval Inc
Engine and Compressor Division
560 85th Avenue
P.O. Box 2161
Oakland, California 94621
(415) 577-7400

March 12, 1985

Director, Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Sir:

In accordance with the requirements of Title 10, Chapter 10, Code of Federal Regulations, Part 21, Transamerica Delaval Inc., hereby notifies the Commission of a potential defect in a component of a DSR or DSRV Standby Diesel Generator. There could exist a potential problem with a Check Valve in the On-engine Mounted Starting Air Piping which could result in Engine non-availability.

Transamerica Delaval has supplied the DSR and DSRV Engines with the potential defect to the following sites:

Utility	Site	Serial No.	Model
Long Island Lighting	Shoreham	74010/12	DSR 48
Middle South Energy	Grand Gulf	74033/36	DSRV 16
Gulf States Utilities	River Bend	74039/40	DSR 48
Duke Power Company	Catawba	75017/20	DSRV 16
Southern California Edison	San Onofre	75041/42	DSRV 20
Consumers Power	Midland	77001/04	DSRV 12
SMUD	Rancho Seco	81015/16	DSR 48

At Grand Gulf on March 11, during operational testing on Engine 74033, flames were noticed coming out of a flexible coupling on the Air Start Header Assembly. The Engine was shutdown and number 6 right bank Air Start Valve was removed. A 3/8 diameter, 7/8 long non-magnetic piece was observed lying on top of the Piston. This resulted in further examination, and it is felt that this piece broke off of a Starting Air Check Valve Disk. This Disc has a top and a bottom guide. It appears this piece broke off of the bottom guide. There are 4 of these Valves on the RV 16 Engine. Grand Gulf checked the other 3. One of these was cracked and the other 2 were ok. LPI was used to check the valves.

These Check Valves were supplied by the [illegible] Co. (Williams-Hager) of Pittsburgh, Pa. They were installed on the Engine by Transamerica Delaval.

Grand Gulf has the failed parts. They are conducting an investigation to determine the cause of failure.

8503180316

2/6

Transamerica
Delaval

We have contacted the Manufacturer to report this failure, and will meet with them March 13 so that they begin their investigation.

In the mean time, our recommendation for corrective action is to disassemble the Check Valves on the Engine and inspect the Disk Guide for cracks (LPI). Attached is a copy of the assembly drawing of this Valve showing the area of concern.

We will inform all the sites listed in Paragraph 2 on this letter of this potential problem by sending them copies of this letter as indicated on the cc's.

Since action is required by others, we cannot estimate at this time when the final corrective action will be complete. We will keep you informed of our progress.

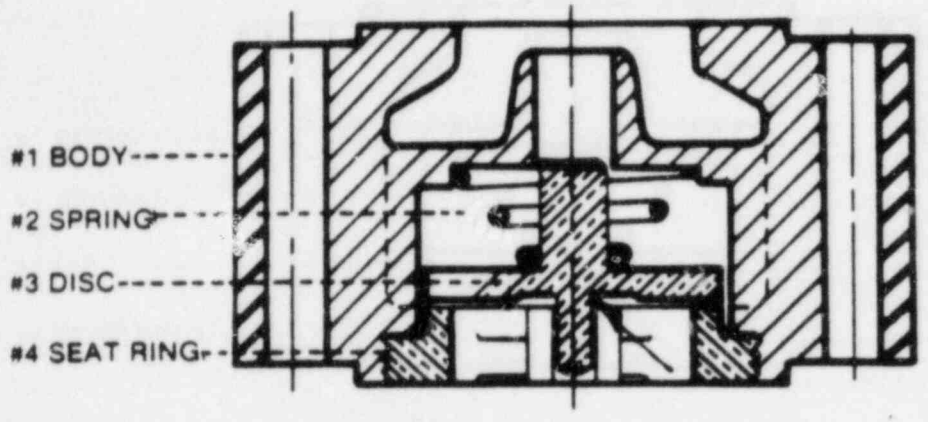
Our evaluation of the potential problem was completed on March 12, 1985. We were informed by Grand Gulf of the potential problem late on March 11, 1985.

Very truly yours,

R E Boyer

R. E. Boyer
Manager, Quality Assurance

REB:hw
Attachments



OPERATING AND MAINTENANCE INSTRUCTIONS

A Remove valve from line.

B Turn valve to rest on outlet face with the inlet face upward. This will remove spring tension against Seat Ring (Part No. 4).

C Unscrew Seat Ring (Part No. 4). This is fabricated with a loose fit to insure easy removal.

D Remove Disc (Part No. 3) and Spring (Part No. 2).

E Reassemble by inserting Spring (Part No. 2), Disc (Part No. 3) and screw in Seat Ring (Part No. 4) until it hits the depth stop which is part of Body (Part No. 1). Seat Ring (Part No. 4) will then be flush with Body (Part No. 1).

F Reinstall valve in line making sure flow arrow on valve body is in the same direction as flow through Valve.

G Gasket on the inlet side of valve (Seat Ring No. 4 side) must completely seal Seat Ring thread to prevent leakage.

H Ordering Information) — (1) Size (2) Pressure Drilling (3) Figure Number (4) Serial Number (5) Metal Specification (Bronze or Stainless Steel)

4/c

Transamerica Delaval

Page
Date
U.S. Nuclear Regulatory Commission

CC: Long Island Lighting Co.
Shoreham Nuclear Power Station
North Country Rd.
Wading River, New York 11791

Attention: Mr. M. H. Milligan
Project Engineer

Middle So. Energy - Grand Gulf
P.O. Box 1640
Jackson, Mississippi 39205

Attention: Mr. J. B. Richard
Sr. Vice-Pres. Nuclear Production

Gulf States Utilities Co.
Stone & Webster Eng. Co.
Cherry Hill Operations Center
3 Executive Campus
P.O. Box 5200
Cherry Hill, New Jersey 08034

Attention: Project Manager (J.O. No. 12210)
Gulf States Project

Southern California Edison
P.O. Box 800
Rosemead, Calif. 91770

Attention: Procurement Manager

Duke Power - Catawba
Mill Power Supply Co.
P.O. Box 32307
Charlotte, North Carolina 28232

Attention: W. T. Robertson, President

5/6

Transamerica
Delaval

CC: (continued)

Consumers Power Co.
1945 West Parnall Road
Jackson, Michigan 49201

Sacramento Municipal Utilities Dist.
SMUD
6201 "S" St., P.O. Box 15830
Sacramento, Calif. 95813

Attention: Mr. J. Glaubitz

merica
Transamerica Delaval Inc
Engine and Compressor Division
550 85th Avenue
P.O. Box 2161
Oakland, California 94621
(415) 577-7400

6/C

RECEIVED

Mar 18 12 25 PM '85

RIVER BEND
RECORDS

1985

Office of Inspection & Enforcement
ear Regulatory Commission
n, D.C. 20555

fer to my letter of March 12, 1985 which described a
problem with a Check Valve in accordance with 10CFR21.

ike to correct a statement I made in the last sentance of
paragraph. Grand gulf did not perform an LPI inspection
lve Disk. The 2 which I stated were ok were visually ex-
ly.

urth paragraph I stated the Valves were supplied by the
Gauge Co. (Williams-Hager) of Pittsburgh. The Williams
was purchased by the Cloy Corporations of Oskaloosa,
the nameplates of the Valves will show Cloy Corporations
s Williams-Hager.

end copies of this letter to all the Sites listed in
2 of the March 12, 1985 letter as indicated in the cc's.

y yours,

r
Quality Assurance

8503180316

STONE & WEBSTER ENGINEERING CORPORATION

QAD-9.31-RB
Revision B
Attachment 3.3

RECORD OF LIQUID PENETRANT EXAMINATION

1-623-RB

MATERIAL	TYPE (CARBON STEEL, STAINLESS STEEL, CUNI, ETC.) STAINLESS STEEL		
GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD ☒ OTHER*	FABRICATION PROCESS	☑ CAST ☐ WORKED ☐ WELDED ☐ OTHER *
SURFACE CONDITION	☐ MACHINED ☐ GROUND ☑ AS FABRICATED ☐ OTHER*	INSPECTION HOLD POINT (ROOT, FINAL, EXCAVATION, ETC.) FINAL	
PROCEDURE	TEMPERATURE NA °F (IF NOT BETWEEN 60°-125°F)	PROCEDURE NUMBER QAD 9.31 - ~~RB~~ C / 0 (PROC. / REV. / CHG.)	SPECIAL TESTING CONDITION NO NA

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1 PRE-CLEANER	Magna Flux	SKC-NF/ZC-7B	85A044
2 PENETRANT	" "	SKL-HF/SKL-S	84F047
3 EMULSIFIER AND/OR REMOVER	" "	SKC-NF/ZC-7B	85A044
4 DEVELOPER	" "	SKD-S	84F015
5 POST EXAMINATION CLEANER	" "	SKC-NF/ZC-7B	85A044

* SKETCH OR OTHER DETAIL USE OTHER SIDE IF NECESSARY.
ONE OF THE GUIDE SPIDERS ON EGS*EGIB

#1 - LINEAR INDICATION 7/32" LONG
#2 - LINEAR INDICATION 11/32" LONG
#3 - LINEAR INDICATION 5/16" LONG

DID LP EXAM ON:
① DISK AND SEAT RING GUIDE SPIDER.

DID NOT LP SPRING SEATING SURFACES ON BODY ON ALL 4 VALVES DUE TO NOT BEING ABLE TO ~~CLEAN~~ CLEAN GREASE FROM LP AREA. DMD 7/10/85

EQUIPMENT USED (Thermometers, Light Meters Etc.)

M&TE Numbers

EVALUATION

REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHERSIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT AND COMMENT AS NECESSARY)
1 ① SEE ABOVE			
2 OTHER 3 VALVES			NO RELAVANT INDICATIONS
3			
4	—		
5	—		
6			

Circle Year, Addenda, and Subsection

CRITERIA APPLICABLE CODE, YEAR, ADDENDA AND PARAGRAPH NUMBERS
RESULTS TO BE REVIEWED BY GSU ENGINEERING AND PROJECTS
~~ASME III, 1974, 1977, N/A, S'74, W'79, NB, NC, ND, NE, NF-5350~~ DMD 7/10/85

ATTEST Dale H. Donnay — RESPONSIBLE CERTIFIED PERSONNEL — II — LEVEL — 7/10/85 — DATE

1-EGS*EGIA & IB

AIA START CHECK VALVES

12210.50

Attachment 3

GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE LOUISIANA 70775

AREA CODE 504 635 6094 346 8651

July 3, 1985
PBG- 21453
File Nos. G9.5, G9.25.1.1

Mr. Robert D. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Martin:

River Bend Station - Unit 1
Docket No. 50-458
Final Report/DP-313

On July 3, 1985, GSU notified Region IV by telephone that it had determined DR-313 concerning excessive temperatures inside the excitation cabinets for the standby diesel generators supplied by Transamerica Delaval, Incorporated to be reportable under 10CFR50.55(e). The attachment to this letter is GSU's final 30-day written report pursuant to 10CFR50.55(e)(3) with regard to this deficiency.

Sincerely,

J. E. Booker

J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

JEB/PJD/amg

cc: Director of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC Resident Inspector-Site

INPO

8507300556

ATTACHMENT

July 3, 1985
RBG- 21453

DR-313/EXCESSIVE TEMPERATURE
IN EXCITATION CABINETS

Background and Description of the Problem

The deficiency concerns excessive temperatures inside the excitation cabinets for the standby diesel generators supplied by Transamerica Delaval, Incorporated. The TDI diesel generator owner's group identified the problem in its DR/QR Report for River Bend Station (RBS) Component 03-650B, 1984. The problem involves the linear reactors that supply current to the exciter exceeding the temperature rating of the coil insulation unless additional ventilation is provided. Subsequently, TDI informed the NRC on May 17, 1985, pursuant to 10CFR21, of the same problem. The problem affects excitation cabinets 1EGE*CAB01A and 1EGE*CAB01B associated with diesel generators 1EGS*EG1A and 1EGS*EG1B, respectively.

Overheating in the excitation cabinets could cause premature aging and possible damage to components contained therein. The excitation system ensures proper voltage control and regulation of the generator output.

Although TDI does not explicitly state the cause of the problem in its letter of May 17, 1985, the probable cause of the problem is improper accounting of heat released from the various electrical and electronics components inside the cabinet, coupled with inadequate ventilation of the cabinet. Some components were furnished by NEI Peeples-Electric Products, Inc., for installation in the excitation cabinet manufactured by RTE-Delta.

Safety Implication

Loss of the diesel generator excitation system due to the subject postulated damage to components resulting from excessive temperatures inside the cabinet would cause the unavailability of its associated Class 1E electrical distribution system. Without a properly functioning excitation system, either the generator output voltage would fluctuate beyond its design range, resulting in voltages at the safety loads beyond their qualified operating voltage ranges, or the generator output voltage would collapse, resulting in loss of that safety-related division's electrical system. In either case, safety-related equipment required for the safe operations of the plant would be adversely affected.