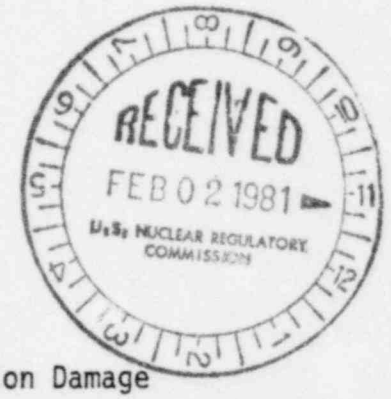
UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-352
50-353

15 JAN 1981



Philadelphia Electric Company
ATTN: Mr. John S. Kemper
Vice President
Engineering and Research
2301 Market Street
Philadelphia, PA 19101

Gentlemen:

Subject: Colt Diesel Generator - Possible Field Insulation Damage

Thank you for your letter, dated November 6, 1980, which forwarded a final report pursuant to 10 CFR 50.55(e) regarding the subject matter.

This matter will be reviewed during a subsequent inspection.

Your cooperation with us is appreciated.

Sincerely,

Robert T. Carlson

Robert T. Carlson, Chief
Reactor Construction and
Engineering Support Branch

cc:
V. S. Boyer, Senior Vice President, Nuclear Power

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4502

JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

NOV -6 1980

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

SUBJECT: Significant Deficiency Report No. 17
Colt Industries Emergency Diesel Generator -
Possible Field Insulation Damage
Limerick Generating Station, Units 1 and 2
NRC Construction Permits No. CPPR-106, 107

ATTACHMENT: Letter Colt Industries to USNRC Region III,
September 22, 1980

FILE: QUAL 2-10-2 (SDR #17)

Dear Mr. Brier:

The attachment has brought to our attention a possible deficiency in the field insulation of the subject Colt Industries emergency diesel generators which has been previously reported to the USNRC under the provisions of 10CFR, Part 21. The subject diesel generators are being supplied by Colt Industries for use at Limerick Generating Station.

We consider the potential deficiency described in the attachments a potential significant deficiency per 10CFR50.55(e) and are hereby notifying you as required.

We believe that the Colt Industries report submitted under the provisions of 10CFR, Part 21 provides the information required for 10CFR50.55(e) reporting. Therefore, we anticipate that this letter will be our only report to you on this subject.

dupe 8011140396

We will of course assure that the Limerick diesel generators are corrected in accordance with instructions received from the vendor.

Sincerely,

John S. Kemper

RJL:drd
Attachment
Copy to: Director of Inspection and Enforcement
United States Nucler Regulatory Commission
Washington, D.C. 20555

J. P. Durr, USNRC Resident Inspector, LGS

... copies

September 22, 1980

R.H. Beadle
E.L. Fay
E.D. Greene
W.T. Hailey
J. Morgan
G. Olson
J.W. Tangye
R. Koons, BPSI

Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Ill. 60137

Attention: Mr. James G. Keppler, Director, Region III

Subject: Colt Industries-Fairbanks Morse Engine Division
Emergency Diesel Generators
South Carolina Electric & Gas Co.-Summer Station 50-395
Part 21 Report - Beloit Power Systems Generators
Possible Field Insulation Damage

Gentlemen:

This is to confirm our verbal report (R.H. Beadle to D.W. Hayes) of September 19, 1980.

A Beloit Power Systems generator in commercial service at Sitka, Alaska lost its field because a lead between the collector rings and the field coils shorted to the rotor and burned in two pieces at the point of the short. Subsequent examination of another generator of identical design at the same installation showed frayed insulation at a clamp (same location as the burn through) which secures the lead to the rotor. This unit was operating satisfactorily but if the insulation damage were to progress the possibility of grounding the lead to the rotor exists.

To determine if the problem might exist at other locations our chief electrical engineer was sent to Provo, Utah which has four generators of identical design. He has reported by phone that two of the four at Provo have frayed insulation at the clamp but that there was no indication of loss of field.

Concurrent with our inspection at Provo, Beloit Power Systems was asked to evaluate the cause of frayed insulation and also if any other generators might have the same problem. Their verbal report to us is that the cause of fraying is poor workmanship in installation of the clamps and that there are other generators of identical design in this area. Specifically the eight generators shipped to Limerick (Philadelphia Electric) are of the identical design in the area where poor workmanship is known to have caused a problem.

Our plan is to inspect the Limerick generators and repair any poor workmanship which may be found. Beloit Power Systems also reports verbally that the design in this area for 5 and 6 frame alternators has been similar for a number of years and it is therefore possible that the problem may extend to operating units.

The list of Fairbanks Morse Model 38TDD-1/8 OP generator sets equipped with 5 or 6 frame Beloit Power Systems generators is as follows:

8010140343

1. 1 Unit - 2665 KW for Northeast Utilities, Millstone Nuclear Plant - Unit #
2. 2 Units - 2500 KW for Carolina Power & Light, Robinson Nuclear Plant.
3. 2 Units - 3000 KW for Northern States Power, Prairie Island Nuclear Plant.
4. 2 Units - 3000 KW for Vermont Yankee Corp., Vermont Yankee Nuclear Plant.
5. 2 Units - 3000 KW for Metropolitan Edison, Three Mile Island Nuclear Plant
6. 4 Units - 3250 KW for Philadelphia Electric Co., Peachbottom Nuclear Statio #2 & #3
7. 3 Units - 3250 KW for Baltimore Gas & Electric Company, Calvert Cliffs Nuclear Stations #1 and #2.
8. 2 Units - 3000 KW for Florida Power Corporation, Crystal River No. 3
9. 2 Units - 3000 KW for Jersey Central Power and Light Company, Three Mile Island Nuclear Station No. 2
10. 3 Units - 3250 KW for Georgia Power Company, Hatch Nuclear Plant #1.
11. 2 Units - 3250 KW for Iowa Electric Light & Power Co., Duane Arnold Nuclear Plant.
12. 4 Units - 3000 KW for Virginia Electric & Power Co., North Anna Nuclear Plant #1 & #2.
13. 2 Units - 3250 KW for Northeast Utilities, Millstone Nuclear Plant - Unit #
14. 2 Units - 3250 KW for Alabama Power Company, Farley Nuclear Plant Units #1
15. 2 Units - 3250 KW for Arkansas Power & Light Company, Arkansas Nuclear One Unit #2.
16. 2 Units - 3250 KW for Georgia Power Company, Hatch Nuclear Plant #2 (with option for additional unit).
17. 4 Units - 3250 KW for Detroit Edison Company, Enrico Fermi #2.
18. 8 Units - 3250 KW for Philadelphia Electric Company, Limerick Nuclear Station #1 & #2.

It is suggested that the generator field leads be inspected for insulation damage at the clamps attaching these leads to the generator rotor.

A conference call with NRC duty officer, Personnel from Prairie Island Nuclear Plant, R.H. Beadle, and C. Evenson of Beloit Power Systems was arranged for 9:30 AM 9/20/80 so that the method of inspection could be explained and taped for use by the NRC in explaining the inspection required to other sites. Mr. Ev was the spokesman and described the method of inspection to visually check for insulation distress at clamps and for clearance between generator field leads and the generator fan.

Edited written instructions covering the inspection method have been requested of Beloit Power Systems. We will contact NRC upon receipt to discuss method of distribution.

Very truly yours,

J.M. Moriarty
MANAGER UTILITY SALES

JMM/jl

cc: U.S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D.C. 20555