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Alabama Power  
*the southern electric system*

January 31, 1984

Docket Nos. 50-348  
50-364

Director, Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Units 1 and 2  
Diesel Generator Operability Testing Technical Specification 3/4.8.1

Gentlemen:

In accordance with the NRC request of January 20, 1984, Alabama Power Company has determined the number of times the diesel generators have been declared inoperable since the issuance of technical specification changes in March and May of 1982 for Units 1 and 2 respectively. The changes to the technical specification were approved by the NRC because the previous technical specification required testing at greater frequencies than the diesel generator manufacturer recommended, thus creating a condition which was considered to be detrimental to the engines. In addition, the revised technical specification provided a more realistic allowance for performing required maintenance activities. The surveillance requirements were therefore changed to enhance the reliability of the diesel generators.

In the 23 months since approval of the change, the Farley Nuclear Plant diesel generators have been declared inoperable on ten occasions. Nine of these malfunctions were minor in nature, and in each instance the affected diesel generator was returned to service within three days. These minor malfunctions included such actions as personnel error during testing and surveillance; fouled air start valves; and a faulty distributor. On the other occasion, during testing following annual preventive maintenance, a diesel generator was declared inoperable due to excessive noise and load oscillation caused by a cracked cylinder liner. This diesel generator was declared operable 13 days after discovery. A description of this incident is attached for review.

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Mr. S. A. Varga  
U. S. Nuclear Regulatory Commission

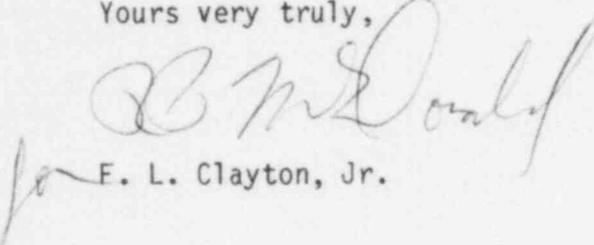
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For comparison purposes, during the 23 months immediately preceding the technical specification change, the diesel generators were declared inoperable 42 times despite the fact that Unit 2 was not on line for 12 months of that period. Of the 42 cases, a diesel generator was inoperable for more than three days on three occasions.

This indicates that a significant improvement in diesel generator reliability has been achieved as a result of the technical specification changes. Without NRC approval of the Technical Specification change, Alabama Power Company would not have had adequate time for completing the preventive maintenance necessary to maintain the diesels to this state of reliability. Alabama Power Company is ready to discuss the performance of the Farley diesel generators upon your request.

If you have any questions, please advise.

Yours very truly,



F. L. Clayton, Jr.

FLCJr/JAR:grs-D4  
Attachment

cc: Mr. R. A. Thomas  
Mr. G. F. Trowbridge  
Mr. J. P. O'Reilly  
Mr. E. A. Reeves  
Mr. W. H. Bradford

Attachment

Description of Diesel Generator (DG) 1-2A Failure  
of November 20, 1983

- ° DG 1-2A was taken out of service for the 18 month preventive maintenance (PM) routine.
- ° The PM was completed under the supervision of a Colt Industries technical representative.
- ° The DG was started and loaded by procedure. At the 3500 KW step, the DG started surging accompanied by load swings.  
  
The symptoms were indicative of governor problems.
- ° The DG was shut down and oil was added to the governor.
- ° The DG was restarted and loaded. Again, at the 3500 KW load step, the DG began surging accompanied by load swings and knocking.  
  
The Control Room was requested to shut down DG 1-2A.  
  
As the DG was being unloaded, the knocking became louder and the Colt technical representative tripped the DG locally.
- ° Following, or in conjunction with, the DG trip, a crankcase explosion occurred.
- ° The crankcase inspection covers were removed and water leakage was observed at #10 cylinder.
- ° The #10 cylinder liner had a 360° through wall crack. The liner was scored and the liner appeared porous in parts of the cracked area.
- ° The #10 piston was pulled apart at the wrist pin area.
- ° There was no other damage found.
- ° Sump oil samples analysis results were consistent with a jacket water leak (16% water and high chromium).
- ° Oil sample analysis results of the new oil added to the sump prior to the failure were satisfactory.
- ° The liner and associated connecting rod were replaced.
- ° On December 3, 1983, DG 1-2A was declared to be operable.

Based on the above and on the appearance of the cylinder liner crack, the plant maintenance superintendent speculated that the failure was due to a defect in the liner. Jacket water leakage into the cylinder led to the ultimate failure. The cylinder liner is currently at Colt for evaluation.