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United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

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Reference: Vogtle Electric Generating Plant - Units 1 and 2, 50-424, 50-425;
Transamerica Delaval Diesel Generator Thrust Bearings

Attention: Mr. James P. O'Reilly

Gentlemen:

On March 23, 1984, Mr. C. W. Hayes, Vogtle Project Quality Assurance Manager, reported a potential deficiency to Mr. John Rogge of the USNRC. This potential deficiency concerned the lubrication of the turbocharger thrust bearings of the Transamerica Delaval diesel generators.

Georgia Power Company has completed its evaluation of this concern and has determined that a substantial safety hazard and significant deficiency could exist. It should be noted that Transamerica Delaval has already reported the existence of this condition to the USNRC in their letter of February 15, 1984.

Based upon guidance contained in NUREG-0302, Revision 1, and other documents received from the NRC, Georgia Power Company is reporting this event as a significant deficiency pursuant to the requirements of Part 10 CFR 50.55(e). A summary of our evaluation is attached for your information.

Please note that the evaluation summary does not contain the corrective action. A recommended corrective action has not yet been received from Transamerica Delaval. Georgia Power Company expects to submit the corrective action in a supplemental report to the NRC on or about June 5, 1984.

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Yours truly,

D. O. Foster

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EVALUATION FOR A SUBSTANTIAL SAFETY HAZARD
EVALUATION FOR A SIGNIFICANT DEFICIENCY

Transamerica Delaval Turbocharger Thrust Bearings Lubrication

Initial Report:

On March 29, 1984, Mr. C. W. Hayes, Vogtle Quality Assurance Manager, reported a potential deficiency to Mr. John Rogge of the USNRC concerning the lubrication of the turbocharger thrust bearings.

Background Information:

On February 15, 1984, Transamerica Delaval, Inc. notified the USNRC of a potential defect in a component of their model DSR or DSRV standby diesel generators. A potential problem exists with the lubrication of the turbocharger thrust bearing which could result in engine non-availability. The engine supplied to Georgia Power Company's Plant Vogtle was listed as having this potential defect.

At the Shoreham and Catawba Sites, a turbocharger failure recently occurred. Investigation has indicated the cause of the failure at both sites to be insufficient lubrication of the thrust bearings of the turbochargers. The turbochargers are manufactured by Elliott Company and installed on the engine by Transamerica Delaval.

The lubrication problem occurs when the engine generators are in the standby mode. The prelube system provides lubrication to the critical components during this period. The flow of oil is reduced to the turbocharger to prevent excess oil from entering the intake or combustion air system.

Once the engine starts, and the main lube system is up to pressure, adequate lube oil is provided. The insufficient lubrication of the turbocharger thrust bearing only occurs on a quick start after a prolonged period in the standby mode. Turbocharger thrust bearing failure occurs only after many quick starts.

This subject was a subject of a previous 10 CFR 21 report by Transamerica Delaval dated December 16, 1980. The engines shipped to Plant Vogtle incorporated the original design modification that was to correct this concern.

Engineering Evaluation:

The turbochargers are an integral part of the diesel engines of the onsite power system. The onsite power system for each power unit consists of two redundant trains. Thus, there are two diesel generators for each power unit. Each diesel engine has two turbochargers.

The standby diesel generators provide onsite power to safety-related equipment to ensure its continued operation following an accident occurring coincident with a loss of offsite power. Because the design, fabrication, and service conditions of both diesel generators for each unit are essentially the same, it is reasonable to postulate a common mode failure of the turbocharger thrust bearings on both engines due to insufficient lubrication of the thrust bearing when the engine is

in the standby mode. This condition could result in a loss of power to both trains of the Engineered Safety Features (ESF) equipment. Because the defect of insufficient lubrication of the turbocharger thrust bearing results in a failure of the emergency onsite power supply and consequential failure of the ESF system, it has been concluded that this defect represents a substantial safety hazard and significant deficiency in the design of the diesel generators, and is reportable under both Part 10 CFR 21 and 10 CFR 50.55(e).

A review has also been conducted of the quality assurance program at Transamerica Delaval and it has been concluded that there has not been a significant breakdown in their QA program.

Conclusion:

This condition has been concluded to represent a deficiency in the design of the diesel generators. Based upon the reporting requirements of the USNRC, Georgia Power Company considers this condition to be reportable per the requirements of Part 10 CFR 50.55(e) and Part 10 CFR 21. Based upon reporting guidance supplied by the NRC in NUREG-0302, Rev. 1, Georgia Power Company is reporting this condition under the reporting requirements of Part 10 CFR 50.55(e).

Corrective Action:

Georgia Power Company has received a recommended corrective action to the turbocharger thrust bearing lubrication problem from Transamerica Delaval. The Vogtle Project Architect/Engineer, Bechtel Power Corporation, is currently evaluating the recommended corrective action for specific application to Vogtle equipment. Georgia Power Company intends to submit to the NRC on or about June 5, 1984, the corrective action that is to be taken for the Vogtle diesel generators.