



## Pennsylvania Power &amp; Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis  
Vice President-Engineering & Construction-Nuclear  
215 / 770-5381

July 1, 1982

Mr. R. C. Haynes  
Regional Administrator, Region I  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

SUSQUEHANNA STEAM ELECTRIC STATION  
FINAL REPORT OF A DEFICIENCY INVOLVING  
EMERGENCY DIESEL GENERATORS  
ERs 100450/100508 FILE 821-10  
PLA-1154

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Dear Mr. Haynes:

This letter serves to provide the Commission with a final report on a deficiency involving Emergency Diesel Generators.

This deficiency was originally reported by telephone to Mr. S. Ebnetter of NRC Region I on May 25, 1982 by Mr. A. Sabol of PP&L.

The attachment to this letter contains a description of the deficiency, its cause, an analysis of safety implications and the corrective action taken. This information is furnished pursuant to the provisions of 10 CFR 50.55(e).

Since the details of this report provide information relevant to the reporting requirements of 10 CFR 21, this correspondence is considered to also discharge any formal responsibility PP&L may have in compliance thereto.

We trust the Commission will find this report to be satisfactory.

Very truly yours,

N. W. Curtis  
Vice President-Engineering & Construction-Nuclear

JS:sab

Attachment

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July 1, 1982

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ERs 100450/100508

Mr. R. C. Haynes

PLA-1154

File 821-10

cc: Mr. Richard C. DeYoung (15)  
Director-Office of Inspection & Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. G. McDonald, Director  
Office of Management Information & Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Gary Rhoads  
U. S. Nuclear Regulatory Commission  
P.O. Box 52  
Shickshinny, PA 18655

FINAL REPORT

SUBJECT

Emergency Diesel Generator

DESCRIPTION OF PROBLEM

During the pre-operational testing of the emergency diesel generators, it was identified that when only one RHR pump was started, starting voltage was near the motor's design minimum. During load sequencing onto the diesel generator after a LOCA and a loss of offsite power, the RHR pump comprises only a portion of the initial load block. A concern was identified that allowable voltage limits would be exceeded when the entire initial load block was started. The diesel generator vendors (Cooper-Bessemer, Engine and Electric Products, Generator) were requested to review the "as built" loading sequence. It was determined by analysis that when the first load block was sequenced onto the diesel generator, the initial voltage drop went below the design minimum.

CAUSE

The diesel generators were designed to accept load in accordance with a loading sequence provided in the Diesel Generator Technical Specification. The diesel generator design was based on an 11/75 issue of the loading sequence. During the interval from 1975 - 1982, several changes were made to the diesel generator load sequence, but not reviewed with the vendor. When the actual load sequence was submitted in 3/82, the manufacturer determined that the capability of the diesel generators was exceeded during the initial load step.

ANALYSIS OF SAFETY IMPLICATIONS

The emergency diesel generators supply power to the Emergency Safeguard System Buses, in the event of a loss of offsite power. During load sequencing onto the diesel generators, the voltage drop caused by the application of the first load block would go below the design minimum. This could prevent safety related motors from accelerating to rated speed in the required time or cause motors to stall.

If the initial voltage drop, caused by the application of the first load block, had gone uncorrected, it could have adversely affected the safe operation of the plant. PP&L considers this condition to be a deficiency in the final design, and therefore is reportable under the requirements of 10CFR 50.55(e).

CORRECTIVE ACTION

The first load block was divided into two parts by delaying the start of the RHR pumps by three seconds. DCP 758 was prepared and implemented to incorporate the necessary modification. This modification will ensure that the design minimum starting voltage is available during load sequencing onto the emergency diesel generators.