



Pennsylvania Power & Light Company

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Norman W. Curtis
Vice President Engineering & Construction-Nuclear
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August 27, 1981

Mr. Boyce H. Grier
Director, Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406



SUSQUEHANNA STEAM ELECTRIC STATION
INTERIM REPORT OF A POTENTIALLY REPORTABLE DEFICIENCY
INVOLVING LIMITORQUE LIMIT SWITCH ROTORS AND TORQUE SWITCHES
ERs 10C450/100508 FILE NOS. 821-10/840-4
PLA-915

Dear Mr. Grier:

This letter serves to provide the Commission with an interim report of a potentially reportable deficiency involving the failure of Limitorque limit switch rotors and torque switches. The condition involves cracking of the gray plastic type material which is the main constituent in these components. The problem was originally reported by telephone to Mr. L. Narrow of NRC Region I by Mr. A. Sabol of PP&L on July 13, 1981. During that conversation, Mr. Narrow was advised that the condition was considered potentially reportable under the provisions of 10 CFR 50.55(e).

The condition (cracks in the gray material) weakens the components and can lead to eventual failure by breakage. The attachment to this letter contains a description of the problems, the cause investigation and corrective action presently underway, and the safety impact that exists. PP&L NCR #81-338 and Bechtel NCR #6020 currently identify the deficiency.

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 expect to issue a final report on this condition in October, 1981.

Very truly yours,

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

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Attachment

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Mr. Boyce H. Grier

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August 27, 1981

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

Mr. G. McDonald, Director (1)
Office of Management Information & Program Control
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ATTACHMENT TO PLA-915

Subject

Limitorque Limit Switch Rotors and Torque Switches (Gray Material)

Description of Potential Problem

The limit switches on the Limitorque valve operators are valve position switches, which are used for the control of the valve operator and for indication of valve position. The torque switches are used for the control of the valve operator when valves are required to be opened or closed to predetermined values of torque, or as a backup to the limit switch.

A problem has been identified with limit switch rotors and torque switches, both inside and outside of primary containment, whose bodies are made of a gray material.

Cracks have been found which extend half way through the gray material limit switch rotor, weakening it to the extent that it is easily broken. Similarly, torque switches have exhibited large cracks in the gray material around the mounting screws and have been known to fail at the pin on the rotor shaft which engages the adjustment cams on the torque switches. The pins have been shearing off, thus disabling the switch.

Cause

PP&L Engineering does not have conclusive evidence as to the cause and nature of the cracks. This is being investigated by Limitorque Corporation.

PP&L Engineering must evaluate the data that Limitorque Corporation provides and the results of a site inspection program (see "Corrective Action" below) before a cause can be determined.

Safety Impact

The torque and limit switches are used to control safety related system valve operations. Failure of these valves to operate could have affected adversely the safety of operation of the nuclear power plant.

Although the extent of the cracking problem is not yet defined, it has been determined that this condition is potentially reportable under the requirements of 10 CFR 50.55(e).

Corrective Action

Limitorque Corporation has been sent a letter (PLE-961 dated 7/9/81) which identifies the problem and requests them to determine the cause, scope and corrective action for the cracking problem.

An inspection of Limitorque valve operators, which contain the gray material limit switch rotors and torque switches, is currently being performed to determine the extent of the cracking problem. Preliminary results indicated that 17 of the first 60 gray rotors checked had noticeable cracks. A Limitorque representative visited the jobsite during the week of July 20, 1981 to review the problem.

The initial corrective action by the Integrated Startup Group is to replace all gray material limit switch rotors and the cracked torque switches with components made of a different type and color material which is suitable for this application. The final report is expected to be issued by October 30, 1981.